

BOARD MEETING DATE: November 4, 2022

AGENDA NO. 27

**PROPOSAL:** Certify Final Subsequent Environmental Assessment for Proposed Amended Rule 1168 – Adhesive and Sealant Applications; and Amend Rule 1168

**SYNOPSIS:** Proposed Amended Rule 1168 will delay VOC limit effective dates or increase VOC limits for certain categories where the technology assessment demonstrated the proposed effective dates or limits are not feasible; create further subcategories to better characterize and refine VOC limits; prohibit the use of paraChlorobenzotrifluoride (pCBtF) and tertiary-Butyl Acetate (t-BAc); include a conditional VOC exemption for Opteon 1100 based on an assessment by OEHHA; and clarify rule language.

**COMMITTEE:** Stationary Source, September 16, 2022, Reviewed

**RECOMMENDED ACTIONS:**

Adopt the attached Resolution:

1. Certifying the Final Subsequent Environmental Assessment for Proposed Amended Rule 1168 – Adhesive and Sealant Applications; and
2. Amending Rule 1168 – Adhesive and Sealant Applications.

Wayne Nastri  
Executive Officer

SR:MK:HF:YZ:MM

---

**Background**

Rule 1168 was adopted in April 1989 to reduce VOC emissions from adhesive applications. The rule applies to products that are used during manufacturing at stationary sources and to products used by consumers that are not regulated by the CARB Consumer Product Regulation. The rule has been amended 14 times; the last amendment was in October 2017. Rule 1168 establishes VOC limits for 59 categories of adhesives, adhesive primers, sealants, and sealant primers. The primary goals of Proposed Amended Rule 1168 (PAR 1168) are to: 1) delay VOC limit effective dates or increase VOC limits for certain categories where the technology assessment demonstrated the proposed effective dates or limits are not feasible; and 2) prohibit the use of t-BAc and pCBtF.

The 2017 amendments to Rule 1168 required that a technology assessment be performed in 2020 and 2022 for nine categories subject to Rule 1168, including Foam Sealants, Plastic Welding Cements, Roofing Products, and Top and Trim categories. The technology assessment was included for most categories because there were not a significant number of products meeting the future effective limits. Manufacturers expressed concerns that not all products within the Rule 1168 category would be able to meet the further limits and that some subcategories may have to be carved out if reformulation efforts were not successful. The technical assessment identified some categories, or subcategories, that either needed more time for reformulation or were not technically feasible to meet the VOC limits that would be effective January 1, 2023.

In addition, in 2017 staff presented to the Stationary Source Committee an assessment on t-BAC, which has limited VOC exemptions in a several rules but not Rule 1168, and highlighted potential toxicity concerns for pCBtF, which is considered an exempt for all VOC rules. The Stationary Source Committee recommended staff remove existing t-BAC exemptions when the rules are amended and request OEHHA review the potential toxicity of pCBtF and remove the exemption, as resources allow, if pCBtF is deemed a potential carcinogen. In 2020, the pCBtF Hot Spots cancer inhalation unit risk factor document was adopted by OEHHA, which indicated pCBtF is a potential carcinogen. During this rule amendment, staff considered either removing the VOC exemption for pCBtF or including a prohibition of pCBtF and/or t-BAC. Most South Coast AQMD VOC rules, including Rule 1168, include a prohibition for Group II exempt compounds because they are either toxic, potentially toxic, upper atmosphere ozone depleters, or cause other environmental impacts. Staff compared the Cancer Potency Factor for pCBtF and t-BAC, and Reference Exposure Levels (REL) of t-BAC, to other prohibited Group II exempt compounds and found the toxicity to be higher. Based on staff assessment and the Stationary Source Committee direction, staff recommends prohibiting both compounds. Based on the pCBtF prohibition, staff is proposing to adjust some VOC limits and allow time for reformulation where needed, which is mostly in roofing products. t-BAC is currently not defined as exempt as a VOC in Rule 1168; therefore, no VOC limits are being impacted by the prohibition. The proposed amendment will allow manufacturers a year to reformulate any products that contain t-BAC.

### **Public Process**

PAR 1168 was developed through a public process. Staff held four Working Group Meetings on February 11, 2022, April 12, 2022, July 21, 2022, and August 11, 2022. The meetings included a variety of stakeholders such as affected manufacturers, multiple industry associations, public agencies, and environmental and community groups. A Public Workshop was held on September 1, 2022, and a Public Consultation meeting was held on September 27, 2022. In addition, staff also met with industry stakeholders and their representatives throughout the rule development process from November 12, 2021, to September 20, 2022, in conducting more than 30 individual or industry stakeholder meetings.

### **Proposed Amendments**

Under PAR 1168, the use of t-BAC and pCBtF will be prohibited, sell-through and use-through periods will be allowed for products manufactured prior to the prohibition effective date. Based on stakeholder feedback and staff's evaluation, the proposal includes a tiered prohibition schedule to allow more time for manufacturers to reformulate products that rely on pCBtF to meet existing rule VOC limits. Categories with longer phaseout schedules include shorter sell-through and use-through periods to help offset the longer timeframe.

Based on the pCBtF prohibition, PAR 1168 will delete future effective VOC limits for three roofing categories and delay the future effective date for one specialty category. Based on the technology assessment, PAR 1168 will delete the future effective VOC limits for one newly created solvent welding subcategory, delay the compliance dates for another newly created solvent welding subcategory, and two specialty adhesives, increase the VOC limit for a newly created foam sealant subcategory, and reduce the VOC limits for two newly created roofing subcategories. Overall, PAR 1168 will establish ten new categories and subcategories based on the technology assessment. In addition, PAR 1168 includes a new requirement for manufacturers to identify any products containing more than 0.01 weight percent of t-BAC and/or pCBtF and provide the weight percent in the Quantity and Emission Reports.

PAR 1168 also includes definitions for new subcategories and updates several other definitions for clarity. On August 22, 2022, the U.S. EPA issued a partial SIP disapproval for two rules that referenced ASTM Test Method D7767-11 – *Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers and Blends and Thin Coatings Made from Them* (ASTM D7767) because the test method is not approved by U.S. EPA and cannot be used to enforce a SIP rule. Rule 1168 references ASTM 7767 in the definition for Energy Curable Adhesives and Sealants; therefore, PAR 1168 deletes the definition to avoid a SIP disapproval.

PAR 1168 also includes a conditional, limited VOC exemption for Opteon 1100 based on an assessment by OEHHA. Staff is proposing that the exemption become effective only if: (1) OEHHA has sufficient information to establish a Cancer Inhalation Unit Risk Factor and does not adopt a Cancer Inhalation Unit Risk Factor for Opteon 1100 and (2) OEHHA has sufficient information to establish an acute reference exposure level (REL) and a chronic REL of Opteon 1100 and develops an acute REL (or interim acute REL) and a chronic REL (or interim chronic REL) for Opteon 1100 which are higher than the RELs for the Hydrofluoro-Olefin (HFO) it would replace. If the exemption is triggered following the OEHHA assessment, it would be limited to two-component foam sealants applied in an industrial or professional setting.

Several amendments are being proposed for streamlining and clarification. PAR 1168 includes definitions for the newly proposed subcategories and updates several other definitions. In addition, the reporting and recordkeeping requirements will be combined

under one subdivision. PAR 1168 also includes labeling requirements to address two new Chlorinated Polyvinyl Chloride subcategories and Regulated Products subject to weight percent VOC limits, and revises the lowest limit for recordkeeping exemption, and revises Table 1 to provide weight-based VOC limits for foam product categories.

### **Emissions Inventory and Emission Reductions**

The emission inventory for the proposed amended rule was determined from the Quantity and Emission Reports manufacturers are required to submit, which includes adhesives and sealants subject to Rule 1168 that were sold into or within South Coast AQMD. According to the 2017/2018 Quantity and Emission Reports, the baseline emissions are 6.2 tons per day (tpd) of VOC.

Due to the proposed delayed and amended VOC limits, the amendment will result in delayed and foregone emission reductions of 0.42 tpd and 0.28 tpd, respectively, of which, 0.15 tpd of the forgone emission reductions are due to the pCBtF prohibition with the remaining 0.13 tpd due to the results of the technology assessment. While this is a significant loss in VOC emission reductions, the 2017 amendment was adopted in part to implement Control Measure CTS-01 - Further Emission Reductions from Coatings, Solvents, Adhesives, and Sealants from the 2016 AQMP, which targeted one tpd of VOC emission reductions by 2023. The 2017 Rule 1168 amendment estimated VOC reductions of 1.38 tpd, so even with the 0.28 tpd foregone emission reductions, the rule amendment exceeded the commitment in the 2016 AQMP.

### **Key Issues**

Through the rule development process, staff has worked with the stakeholders to address comments and resolve key issues. Staff is aware of one remaining key issue regarding testing method for thin film Energy Curable Adhesives and Sealants. PAR 1168 proposes to delete the definition for Energy Curable Adhesives and Sealants, which was added during the 2017 rule amendment as a mechanism to include ASTM Test Method D7767-11 which is a test method for thin film Ultra Violet/Electron Beam/Light Emitting Diode (UV/EB/LED) materials, also referred to as Energy Curable materials. To avoid a SIP disapproval, staff is proposing to delete the definition. RadTech, the trade association that represents the UV/EB/LED industry, objects to the removal of this definition.

On August 22, 2022, U.S. EPA proposed a limited disapproval of Rule 1106 - Marine and Pleasure Craft Coatings and Rule 1107 - Coating of Metal Parts and Products due to the inclusion of ASTM Test Method D7767-11, which is not approved by the U.S. EPA and therefore cannot be used to enforce a SIP-approved rule. The U.S. EPA deemed the provisions that reference ASTM Test Method D7767-11 did not satisfy the requirements of section 110 and part D of the Clean Air Act and thus prevented full approval of the rules. South Coast AQMD has a long history with this test method and shares U.S. EPA's concerns about the enforceability of this test method. The removal of this test method will not create any barriers or deter the use of UV/EB/LED products. Manufacturers can, and often do, rely on the formulation data to calculate the VOC of



their products. Regulatory agencies must rely on test methods to determine the VOC content of regulated products. Using formulation data to calculate the VOC of products is an easier and cheaper approach for manufacturers to determine if their products will comply with rule limits. South Coast AQMD developed a Test Method Guidance Document for Rule 1168 that states that formulation data is the appropriate tool for manufacturers to verify compliance for thin film UV/EB/LED curable products.

### **California Environmental Quality Act**

PAR 1168 is considered a “project” as defined by the California Environmental Quality Act (CEQA), and the South Coast AQMD is the designated lead agency. Pursuant to South Coast AQMD’s Certified Regulatory Program (Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(l); codified in South Coast AQMD Rule 110) and CEQA Guidelines Section 15187, the South Coast AQMD has prepared a Subsequent Environmental Assessment (SEA) for PAR 1168, which is a substitute CEQA document pursuant to CEQA Guidelines Section 15252, prepared in lieu of a Subsequent Environmental Impact Report. The environmental analysis in the SEA tiers off of the previously certified Final Environmental Assessment (EA) prepared for the amendments to Rule 1168 that were adopted on October 6, 2017 (referred to herein as the October 2017 Final EA for Rule 1168) as allowed by CEQA Guidelines Sections 15152, 15162, and 15385. Because the SEA is a subsequent document to the October 2017 Final EA for Rule 1168, the baseline is the project analyzed in the October 2017 Final EA for Rule 1168. Implementation of the proposed project is expected to result in delayed and permanent foregone VOC emission reductions of 0.42 tpd and 0.28 tpd, respectively, and the Final SEA concluded that PAR 1168 would generate significant adverse environmental impacts for the topic of air quality during operation. No feasible mitigation measures were identified that would reduce these impacts to the less than significant levels. Thus, PAR 1168 contains new information of substantial importance relative to these new, potentially significant operational air quality impacts which were not known and could not have been known at the time the October 2017 Final EA for Rule 1168 was certified. [CEQA Guidelines Section 15162(a)(3)(A)]. The Final SEA is included as an attachment to this Board package (see Attachment I). In addition, Findings pursuant to CEQA Guidelines Section 15091, and a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093 were also prepared (see Attachment F of this Board package – which is referred to as Attachment 1 to the Resolution).

### **Socioeconomic Impact Assessment**

Health and Safety Code Sections 40440.8 and 40728.5 require a socioeconomic impact assessment for proposed and amended rules resulting in significant impacts to air quality or emissions limitations. This proposed rule amendment will result in the elimination of two toxic solvents, t-BAC and pCBtF, and some of the VOC emission reductions projected in the October 2017 amendments to Rule 1168 will be delayed or foregone; therefore, a cost effectiveness assessment is not required. This socioeconomic impact assessment included affected industries and a range of probable costs due to the prohibition of t-BAC and pCBtF related to manufacturer’s reformulation work and the

difference in production cost of the alternative solvents due to the prohibited t-Bac and pCBtF solvents. Considering potential cost savings using alternative solvents and additional costs on reformulation and reporting, staff estimates the average annual cost of the rule amendment is \$397,000 across all affected solvent manufacturers. The compliance cost may potentially be passed through to consumers or to end-users in the construction and other manufacturing industry sectors, some of which may be small businesses. However, minimal job impacts are expected as a result of the estimated compliance cost.

### **AQMP and Legal Mandates**

Health and Safety Code Section 40460 requires South Coast AQMD to adopt an AQMP to meet state and federal ambient air quality standards in the South Coast Air Basin. In addition, Health and Safety Code Section 40440 requires the South Coast AQMD to adopt rules and regulations that carry out the objectives of the AQMP. The proposed amendments will implement, in part, Control Measure CTS-01 – Further Emission Reductions from Coatings, Solvents, Adhesives, and Sealants.

### **Implementation Plan and Resource Impact**

Existing South Coast AQMD resources will be sufficient to implement the proposed changes to this rule with minimal impacts.

### **Attachments**

- A. Summary of Proposed Amendments
- B. Key Issues and Responses
- C. Rule Development Process
- D. Key Contacts List
- E. Resolution
- F. Attachment 1 to the Resolution – Findings and Statement of Overriding Considerations
- G. Proposed Amended Rule 1168
- H. Final Staff Report with Socioeconomic Impact Assessment
- I. Final Subsequent Environmental Assessment
- J. Board Meeting Presentation

**ATTACHMENT A**  
**SUMMARY OF PROPOSAL**

Proposed Amended Rule 1168 – Adhesive and Sealant Applications

Purpose and Applicability

- Separate Purpose and Applicability subdivisions to be consistent with other rules
- Clarify the rule applicability by adding stationary sources who use adhesives and sealants in the manufacturing process and specifying the applicability is for adhesives and sealants used within the South Coast AQMD

Definitions

- Revise, delete, and add certain definitions
  - Add new definitions for newly established product categories
  - Include a conditional exemption for Opteon 1100 in the definition for VOC Exempt Compound
  - Remove the definition for Energy Curable Adhesives and Sealants, which references ASTM Test Method 7767 Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them.

Requirements

- Amend VOC limits and effective dates for several existing and newly established product categories based on a technology assessment
- Prohibit the use of t-BAC and pCBtF using a tiered implementation schedule and use-through and sell-through periods
- Include weight-based VOC limit in Table 1 for Foam Sealants and Foam Insulation

Reporting and Recordkeeping Requirements

- Amend labeling requirements to address:
  - Regulated Products subject to weight percent VOC limits
  - New CPVC subcategories, CPVC For Life Safety Systems and Higher Viscosity CPVC Welding Cement
- Include reporting requirements for any product containing more than 0.01 weight percent of t-BAC and/or pCBtF

Exemptions

- Lower the recordkeeping exemption threshold for stationary source low emission product use
- Streamline and revise the provisions in the exemption section

**ATTACHMENT B**  
**KEY ISSUES AND RESPONSES**

Proposed Amended Rule 1168 – Adhesive and Sealant Applications

Staff worked with stakeholders to resolve a majority of their concerns through revisions to the rule language and clarification in the staff report; however, the following issue remains.

Issue

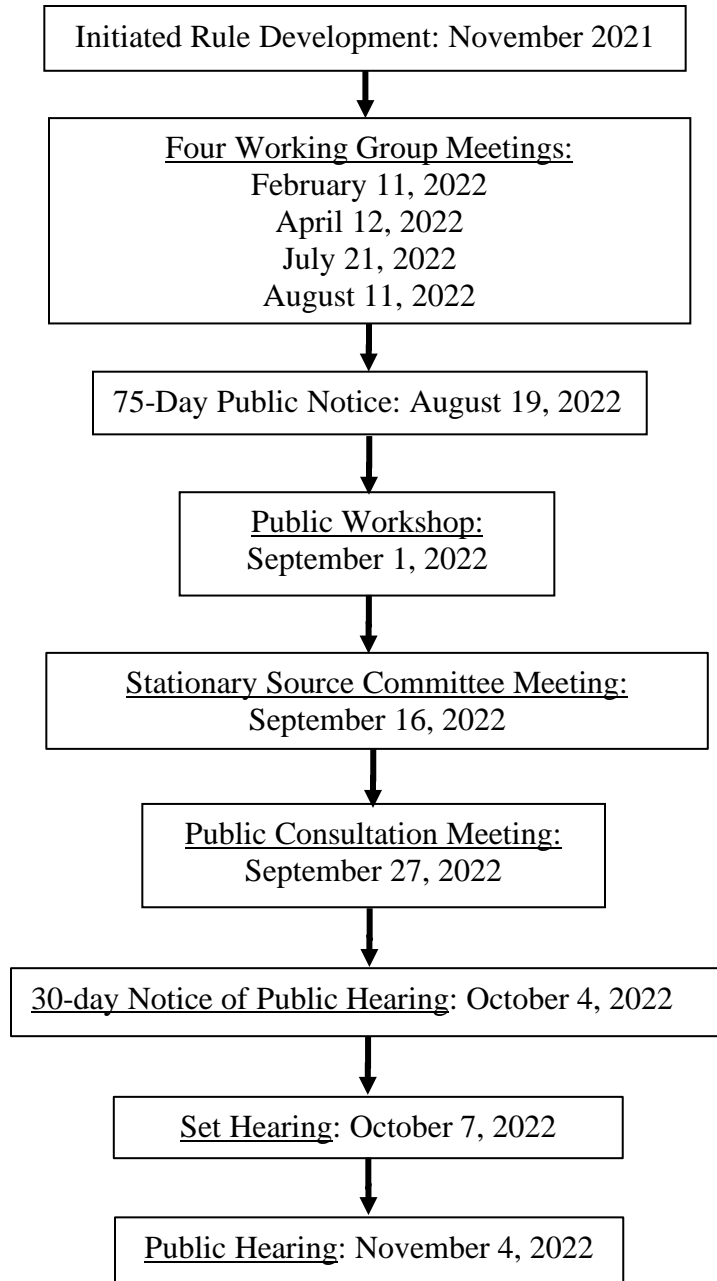
Staff is proposing to delete the definition for Energy Curable Adhesives and Sealants, which was added during the 2017 rule amendment as a mechanism to include ASTM Test Method D7767-11, the test method for thin film UV/EB/LED materials, also referred to as Energy Curable materials. However, to avoid a SIP disapproval, staff is proposing to delete the definition. RadTech, the trade association that represents the UV/EB/LED industry, objects to the removal of this definition.

Staff Response

On August 22, 2022, the U.S. EPA proposed a limited disapproval of Rule 1106 - Marine and Pleasure Craft Coatings and Rule 1107 - Coating of Metal Parts and Products due to the inclusion of ASTM Test Method D7767-11, which is not approved by the U.S. EPA and therefore cannot be used to enforce a SIP approved rule. The U.S. EPA deemed the provisions that reference ASTM Test Method D7767-11 did not satisfy the requirements of section 110 and part D of the Clean Air Act and thus prevented full approval of the rules. The South Coast AQMD has a long history with this test method and shares the U.S. EPA's concerns about the enforceability of this test method. Manufacturers can, and often do, rely on the formulation data to calculate the VOC of their products. Using formulation data to calculate the VOC of products is an easier and cheaper approach for manufacturers to verify compliance. The South Coast AQMD developed a Test Method Guidance Document for Rule 1168 that states that formulation data is the appropriate tool for manufacturers to verify compliance for thin film UV/EB/LED curable products. Staff does not anticipate any adverse impact to the UV/EB/LED industry based on this proposed change to Rule 1168.

**ATTACHMENT C**  
**RULE DEVELOPMENT PROCESS**

**Proposed Amended Rule 1168 – Adhesive and Sealant Applications**



**Twelve (12) months spent in rule development**  
**Four (4) Working Group Meetings**  
**One (1) Public Workshop**  
**One (1) Public Consultation Meeting**  
**One (1) Stationary Source Committee Meeting**

**ATTACHMENT D**  
**KEY CONTACTS LIST**

3M Chemical	International Fireproof Technology Inc
Adhesive and Sealant Council (ASC)	Illinois Tool Works (ITW)
Adhesive Solutions	Johns Manville
American Chemistry Council	LORD Corporation
American Coatings Association (ACA)	Lubrizol Corporation
Asphalt Roofing Manufacturers Association (ARMA)	Oatey Co.
BASF	Owens Corning
Bostik, Inc.	Parker Lord
Bridgestone Bandag LLC	Plastic Pipe and Fittings Association (PPFA)
California Air Resources Board	RadTech International
California Building Material Dealers Association, Inc.	RD Abbott
Carlisle Construction Materials	Roof Coatings Manufacturers Association (RCMA)
C R Laurence	Sashco Inc.
Custom Building Products	Sika Corporation
DAP Products Inc.	Single Ply Roofing Industry (SPRI)
Dow Chemical Company	Soprema Inc
Dow Corning	Soudal Accumetric
Dupont	Stabond Corporation
E4 Strategic Solutions	Tenax USA
EPDM Roofing Association (ERA)	Tremco Incorporated
Firestone Building Products	Trinity Consultants
Franklin International	Weld-On Adhesives Inc.
GAF	
HB Fuller	
Henkel Corporation	
IB Roof Systems	
ICP Adhesives and Sealants, Inc	
IFS Industries Inc	

## **ATTACHMENT E**

RESOLUTION NO. 22-\_\_\_\_\_

**A Resolution of the Governing Board of the South Coast Air Quality Management District (South Coast AQMD) certifying the Final Subsequent Environmental Assessment (SEA) for Proposed Amended Rule 1168 – Adhesive and Sealant Applications.**

**A Resolution of the South Coast AQMD Governing Board amending Rule 1168 – Adhesive and Sealant Applications.**

**WHEREAS**, the South Coast AQMD Governing Board finds and determines that Proposed Amended Rule 1168 is considered a “project” as defined by California Environmental Quality Act (CEQA); and

**WHEREAS**, the South Coast AQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(l), and has conducted a CEQA review and analysis of the proposed project pursuant to such program (South Coast AQMD Rule 110); and

**WHEREAS**, the South Coast AQMD Governing Board has determined that the requirements for a Subsequent Environmental Impact Report have been triggered pursuant to its certified regulatory program and CEQA Guidelines Section 15162(a), and that a Subsequent Environmental Assessment (SEA), a substitute document allowed pursuant CEQA Guidelines Section 15252 and South Coast AQMD’s certified regulatory program, is appropriate; and

**WHEREAS**, the South Coast AQMD has prepared a SEA pursuant to its certified regulatory program and CEQA Guidelines Section 15187, which tiers off of the Final Environmental Assessment (EA) for Proposed Amended Rule 1168 – Adhesive and Sealant Applications which was certified on October 6, 2017 (referred to as October 2017 Final EA for Rule 1168) as allowed by CEQA Guidelines Sections 15152, 15162, and 15385. Because the SEA is a subsequent document to the October 2017 Final EA for Rule 1168, the baseline is the project analyzed in the October 2017 Final EA for Rule 1168. The SEA concluded that the proposed project would have the potential to generate significant and unavoidable adverse environmental impacts for the topic of air quality during operation; and

**WHEREAS**, the Draft SEA was circulated for a 45-day public review and comment period, from September 6, 2022 to October 21, 2022, and no comment letters were received; and

**WHEREAS**, the Draft SEA has been revised to include updates to reflect changes made to Proposed Amended Rule 1168 after the public notice of availability of the Draft SEA, so that it is now a Final SEA; and

**WHEREAS**, it is necessary that the South Coast AQMD Governing Board review the Final SEA prior to its certification, to determine that it provides adequate information on the potential adverse environmental impacts that may occur as a result of amending Rule 1168; and

**WHEREAS**, no feasible mitigation measures were identified that would reduce or eliminate the significant adverse operational air quality impacts to less than significant levels and, as such, a Mitigation Monitoring Plan pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097 is not required and was not prepared; and

**WHEREAS**, it is necessary that the South Coast AQMD prepare Findings pursuant to CEQA Guidelines Section 15091, and a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093, regarding potentially significant adverse operational air quality impacts that cannot be mitigated to less than significant levels; and

**WHEREAS**, Findings and a Statement of Overriding Considerations have been prepared and are included in Attachment F in the Board letter, which is attached and incorporated herein by reference; and

**WHEREAS**, the South Coast AQMD Governing Board voting to amend Rule 1168 has reviewed and considered the information contained in the Final SEA, the Findings, the Statement of Overriding Considerations, and all other supporting documentation, prior to its certification, and has determined that the Final SEA has been completed in compliance with CEQA; and

**WHEREAS**, Proposed Amended Rule 1168 and supporting documentation, including but not limited to, the Final SEA, the Socioeconomic Impact Assessment that is contained in the Final Staff Report, and the Final Staff Report were presented to the South Coast AQMD Governing Board and the South Coast AQMD Governing Board has reviewed and considered this information, as well as has taken and considered staff testimony and public comment prior to approving the project; and

**WHEREAS**, the Final SEA reflects the independent judgment of the South Coast AQMD; and



**WHEREAS**, the South Coast AQMD Governing Board finds and determines that all changes made in the Final SEA after the public notice of availability of the Draft SEA, were not substantial revisions and do not constitute significant new information within the meaning of CEQA Guidelines Sections 15073.5 and 15088.5, because no new or substantially increased significant effects were identified, and no new project conditions or mitigation measures were added, and all changes merely clarify, amplify, or make insignificant modifications to the Draft SEA, and recirculation is therefore not required; and

**WHEREAS**, the South Coast AQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures (Section 30.5(4)(D)(i) of the Administrative Code), that no modifications have been made to the proposed project since the Notice of Public Hearing was published that are so substantial as to significantly affect the meaning of Proposed Amended Rule 1168 within the meaning of Health and Safety Code Section 40726 because changes to the applicability subdivision and the definition for Exempt Compound provide clarification and: (a) the changes do not impact emissions, (b) the changes do not affect the number or type of sources regulated by the rule, (c) the changes are consistent with the information contained in the Notice of Public Hearing, and (d) the effects of Proposed Amended Rule 1168 do not exceed the effects of the range of alternatives analyzed in the Final SEA; and

**WHEREAS**, Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the South Coast AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the Final Staff Report; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that a need exists to amend Rule 1168 to provide regulatory relief by amending some VOC limits and compliance dates for several product categories based on technology feasibility, prohibit the use of tertiary-Butyl Acetate (t-BAC) and para-Chlorobenzotrifluoride (pCBtF) due to their air toxicity, and clarify rule language; and

**WHEREAS**, the South Coast AQMD Governing Board obtains its authority to adopt, amend or repeal rules and regulations from Sections 39002, 40000, 40001, 40440, 40441, 40702, 40725 through 40728, and 41508 of the Health and Safety Code; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that Rule 1168, as proposed to be amended, is written and displayed so that its meaning can be easily understood by persons directly affected by it; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that Rule 1168, as proposed to be amended, is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that Rule 1168, as proposed to be amended, does not impose the same requirements as any existing state or federal regulations, and the proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD; and

**WHEREAS**, the South Coast AQMD Governing Board, in amending Rule 1168, references the following statutes which the South Coast AQMD hereby implements, interprets or makes specific: Health and Safety Code Sections 39002, 39616, 40001, 40406, 40702, 40440(a), 40725 through 40728.5, and Clean Air Act Sections 110, 172, and 182(e); and

**WHEREAS**, Health and Safety Code Section 40727.2 requires the South Coast AQMD to prepare a written analysis of existing federal air pollution control requirements applicable to the same source type being regulated whenever it adopts, or amends a rule, and that the South Coast AQMD's comparative analysis of Proposed Amended Rule 1168 is included in the Final Staff Report; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that the Socioeconomic Impact Assessment, as contained in the Final Staff Report, of Proposed Amended Rule 1168 is consistent with the March 17, 1989 Governing Board Socioeconomic Resolution for rule adoption; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that the Socioeconomic Impact Assessment, as contained in the Final Staff Report, is consistent with the provisions of Health and Safety Code Sections 40440.8 and 40728.5; and

**WHEREAS**, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1168 will result in increased costs to the affected industries, yet are considered to be reasonable, with a total annualized cost as specified in the Socioeconomic Impact Assessment, as contained in the Final Staff Report; and

**WHEREAS**, the South Coast AQMD Governing Board has actively considered the Socioeconomic Impact Assessment, as contained in the Final Staff Report, and has made a good faith effort to minimize such impacts; and

**WHEREAS**, the South Coast AQMD staff conducted a Public Workshop regarding Proposed Amended Rule 1168 on September 1, 2022; and

**WHEREAS**, a Public Hearing has been properly noticed in accordance with all provisions of Health and Safety Code Sections 40725 and 40440.5; and

**WHEREAS**, the South Coast AQMD Governing Board has held a Public Hearing in accordance with all provisions of state and federal law; and

**WHEREAS**, the South Coast AQMD Governing Board specifies the Planning, Rule Development and Implementation Manager of Proposed Amended Rule 1168 as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of the proposed amendments are based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

**WHEREAS**, Proposed Amended Rule 1168 will be submitted for inclusion into the State Implementation Plan; and

**NOW, THEREFORE BE IT RESOLVED**, that the South Coast AQMD Governing Board has considered the Final SEA for Proposed Amended Rule 1168 and, on the basis of the whole record before it, the South Coast AQMD Governing Board: 1) finds that the Final SEA was completed in compliance with CEQA and the South Coast AQMD's certified regulatory program, 2) finds that the Final SEA and all supporting documents were presented to the South Coast AQMD Governing Board, whose members exercised their independent judgment and reviewed, considered, and approved the information therein prior to acting on Proposed Amended Rule 1168, and 3) certifies the Final SEA; and

**BE IT FURTHER RESOLVED**, that the South Coast AQMD Governing Board does hereby adopt Findings pursuant to CEQA Guidelines Section 15091 and a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093, as required by CEQA and which are included as Attachment F and incorporated herein by reference; and

**BE IT FURTHER RESOLVED**, that the South Coast AQMD Governing Board directs staff to report back to the Stationary Source Committee in January 2026 to provide an update on the progress of the pCBtF and t-BAC phase-out, including data reported in the Rule 1168 Quantity and Emission Reports and feedback from manufacturers of roofing adhesives and sealants; and

**BE IT FURTHER RESOLVED**, that the South Coast AQMD Governing Board directs staff to report back to the Stationary Source Committee within two months of the Office of Environmental Health Hazard Assessment (OEHHA) finalizing its assessment of Opteon 1100 and if OEHHA identifies potential toxicity concerns, seek guidance on a broader directive regarding how South Coast AQMD should consider Hydrofluro-Olefins (HFOs); and

**BE IT FURTHER RESOLVED**, that the South Coast AQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Amended Rule 1168, as set forth in the attached, and incorporated herein by this reference; and

**BE IT FURTHER RESOLVED**, that the South Coast AQMD Governing Board requests that Proposed Amended Rule 1168 be submitted into the State Implementation Plan; and

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby directed to forward a copy of this Resolution and Proposed Amended Rule 1168 to the California Air Resources Board for approval and subsequent submittal to the U.S. Environmental Protection Agency for inclusion into the State Implementation Plan.

DATE: \_\_\_\_\_

\_\_\_\_\_  
CLERK OF THE BOARDS

## ATTACHMENT F

### SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

**Attachment 1 to the Governing Board Resolution for:**

**Final Subsequent Environmental Assessment for Proposed Amended Rule 1168 -  
Adhesive and Sealant Applications**

**Findings and Statement of Overriding Considerations**

**October 2022**

**State Clearinghouse No. 2017081031  
South Coast AQMD No. 20220902ST/ 08162017DT**

**Executive Officer**

Wayne Nastri

**Deputy Executive Officer**

**Planning, Rule Development and Implementation**

Sarah Rees, Ph.D.

**Assistant Deputy Executive Officer**

**Planning, Rule Development and Implementation**

Michael Krause

**Assistant Deputy Executive Officer**

**Planning, Rule Development and Implementation**

Ian MacMillan

---

**Author:** Sina Taghvae, Ph.D. Air Quality Specialist

**Technical Assistance:** Mojtaba Moghani, Ph.D. Air Quality Specialist

**Reviewed By:**

Barbara Radlein	Program Supervisor, CEQA
Yanrong Zhu	Program Supervisor
Heather Farr	Planning and Rules Manager
Barbara Baird	Chief Deputy Counsel
Josephine Lee	Senior Deputy District Counsel

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
GOVERNING BOARD**

**CHAIR:** BEN J. BENOIT  
Mayor, Wildomar  
Cities of Riverside County

**VICE CHAIR:** VANESSA DELGADO  
Senator (Ret.)  
Senate Rules Committee Appointee

**MEMBERS:**

MICHAEL A. CACCIOTTI  
Mayor, South Pasadena  
Cities of Los Angeles County/Eastern Region

ANDREW DO  
Supervisor, First District  
County of Orange

GIDEON KRACOV  
Governor's Appointee

SHIELA KUEHL  
Supervisor, Third District  
County of Los Angeles

LARRY MCCALLON  
Mayor, Highland  
Cities of San Bernardino County

VERONICA PADILA-CAMPOS  
Speaker of the Assembly Appointee

V. MANUEL PEREZ  
Supervisor, Fourth District  
County of Riverside

NITHYA RAMAN  
Council Member, Fourth District  
Cities of Los Angeles Representative

REX RICHARDSON  
Vice Mayor, City of Long Beach  
Cities of Los Angeles County/Western Region

CARLOS RODRIGUEZ  
Mayor, Yorba Linda  
Cities of Orange County

JANICE RUTHERFORD  
Supervisor, Second District  
County of San Bernardino

**EXECUTIVE OFFICER:**  
WAYNE NASTRI

**TABLE OF CONTENTS**

Page No.

<b>1.0</b>	<b>Introduction .....</b>	<b>1</b>
<b>2.0</b>	<b>California Environmental Quality Act Provisions Regarding Findings.....</b>	<b>3</b>
<b>3.0</b>	<b>Summary of the Proposed Project .....</b>	<b>5</b>
<b>4.0</b>	<b>Potentially Significant Adverse Impacts That Cannot Be Reduced Below A Significant Level.....</b>	<b>6</b>
<b>5.0</b>	<b>Findings Regarding Potentially Significant Environmental Impacts .....</b>	<b>7</b>
<b>5.1</b>	<b>Findings for Alternatives to the Proposed Project .....</b>	<b>8</b>
<b>5.2</b>	<b>Conclusion of Findings.....</b>	<b>12</b>
<b>6.0</b>	<b>Statement of Overriding Considerations .....</b>	<b>13</b>
<b>7.0</b>	<b>Mitigation.....</b>	<b>15</b>
<b>8.0</b>	<b>Record of Proceedings .....</b>	<b>15</b>

**Attachment 1 to the Governing Board Resolution for:  
Final Subsequent Environmental Assessment for Proposed Amended Rule 1168 -  
Adhesives and Sealant Applications**

---

**Findings and Statement of Overriding Considerations**

**Introduction**

**California Environmental Quality Act Provisions Regarding Findings**

**Summary of the Proposed Project**

**Potentially Significant Adverse Impacts That Cannot Be Reduced  
Below A Significant Level**

**Findings Regarding Potentially Significant Environmental Impacts**

**Findings for Alternatives to the Proposed Project**

**Conclusion of Findings**

**Statement of Overriding Considerations**

**Mitigation**

**Record of Proceedings**



## 1.0 Introduction

Proposed Amended Rule (PAR) 1168 – Adhesive and Sealant Applications is considered a “project” as defined by the California Environmental Quality Act (CEQA). [Public Resources Code Section 21000 et seq.]. Specifically, CEQA requires: 1) the potential adverse environmental impacts of proposed project to be evaluated; and 2) feasible methods to reduce or avoid any identified significant adverse environmental impacts of this project to also be evaluated. CEQA Guidelines Section 15364 defines “feasible” as “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.”

Since the proposed project is comprised of a South Coast AQMD-proposed amended rule, the South Coast AQMD has the greatest responsibility for carrying out or approving the project as a whole, which may have a significant effect upon the environment, and is the most appropriate public agency to act as lead agency. [Public Resources Code Section 21067 and CEQA Guidelines Section 15051(b)].<sup>1</sup>

The proposed project amends the October 2017 version of Rule 1168 and proposes to: 1) prohibit the use of parachlorobenzotrifluoride (pCBtF) and tertiary-Butyl Acetate (t-BAc) in Rule 1168 products due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; 3) create additional subcategories of regulated products to better characterize and refine VOC emission limits; 4) allow Opteon 1100 (cis-1,1,1,4,4,4-hexafluoro-2-butene/HFO-1336mzz-Z) as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and 5) remove definitions, and update, clarify, and streamline rule language.

The South Coast AQMD, as Lead Agency for the proposed project, prepared a Subsequent Environmental Assessment (SEA) with significant impacts to conduct an environmental review of PAR 1168 pursuant to CEQA Guidelines Section 15187. The SEA is a substitute CEQA document prepared in lieu of a Subsequent Environmental Impact Report (EIR) with significant impacts [CEQA Guidelines Section 15162], pursuant to the South Coast AQMD’s Certified Regulatory Program [Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(l); codified in South Coast AQMD Rule 110]. Pursuant to CEQA Guidelines Sections 15152, 15162, and 15385, the SEA tiers off of and is a subsequent document to the Final EA for Rule 1168 which was certified on October 6, 2017 (referred to herein as the October 2017 Final EA for Rule 1168).

Because this is a subsequent document, the baseline is the project analyzed in the October 2017 Final EA for Rule 1168. The SEA was prepared because PAR 1168 contains new information of substantial importance which was not known and could not have been known at the time the October 2017 Final EA for Rule 1168 was certified and the project will have significant effects that were not previously discussed. [CEQA Guidelines Section 15162(a)(3)(A)].

The purpose of the October 2017 amendments to Rule 1168 was to reduce emissions of VOCs by 1.38 ton per day (tpd), as well as reduce toxic air contaminants, and stratospheric ozone-depleting compounds from adhesives, adhesive primers, sealants, and sealant primers. The October 2017

---

<sup>1</sup> CEQA Guidelines refers to California Code of Regulations, Title 14, Section 15000 and following.

Final EA for the October 2017 amendments to Rule 1168 analyzed the environmental impacts associated with the activities manufacturers were anticipated to undertake to reformulate products and that these reformulation activities could create secondary adverse environmental impacts. However, none of the environmental topic areas previously analyzed in the October 2017 Final EA for Rule 1168 were concluded to have significant and unavoidable impacts, including the topic of air quality and greenhouse gases (GHGs). Because the October 2017 Final EA for Rule 1168 concluded that the project will not have a significant adverse impact on the environment, mitigation measures were not made a condition of the approval of the October 2017 version of Rule 1168. Thus, a Mitigation Monitoring and Reporting Plan, pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097, was not required or adopted at that time. Findings pursuant to CEQA Guidelines Section 15091 and a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093 were also not required or adopted for the October 2017 version of Rule 1168.

The SEA, which includes a project description and analysis of potential adverse environmental impacts that could be generated from PAR 1168, concluded to have generally the same or similar environmental effects that were previously examined in the October 2017 Final EA for Rule 1168 but that the operational air quality impacts from the PAR 1168 will cause some delayed and permanent forgone VOC emission reductions, which will be more severe than what was discussed in October 2017 Final EA. Specifically, the Final SEA for PAR 1168 concluded that significant and unavoidable adverse environmental impacts may occur for air quality during operation because the delayed and permanent forgone VOC emission reductions would exceed the South Coast AQMD's daily VOC operational significance threshold of 55 pounds per day. Therefore, pursuant to CEQA Guidelines Section 15252(a)(2)(A), an alternatives analysis was required and has been included in the Final SEA. However, no feasible mitigation measures were identified that would reduce or eliminate the significant adverse impacts for the air quality during operation. Thus, mitigation measures were not made a condition of approval of PAR 1168. Further, since no feasible mitigation measures were identified, a Mitigation, Monitoring, and Reporting Plan, pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines 15097 is not required.

The Draft SEA was released and circulated for a 45-day public review and comment period from September 6, 2022 to October 21, 2022 and no comment letters were received.

However, some modifications have been made to the Draft SEA to make it a Final SEA which include updates to reflect changes made to PAR 1168 after the public notice of availability of the Draft SEA. South Coast AQMD staff evaluated the modifications made to PAR 1168 after the release of the Draft SEA for public review and comment and concluded that none of the revisions constitute significant new information, because: 1) no new significant environmental impacts would result from the proposed project; 2) there is no substantial increase in the severity of an environmental impact; 3) no other feasible project alternative or mitigation measure was identified that would clearly lessen the environmental impacts of the project and was considerably different from others previously analyzed; and 4) the Draft SEA did not deprive the public from meaningful review and comment. In addition, revisions to PAR 1168 and the analysis in response to verbal or written comments during the rule development process would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the Draft SEA pursuant to CEQA Guidelines Sections 15073.5 and 15088.5. Therefore, the Draft SEA has been revised to include

the aforementioned modifications such that it is now the Final SEA. The Final SEA will be presented to the Governing Board prior to its November 4, 2022 public hearing (see Attachment I of the Governing Board package).

South Coast AQMD's certified regulatory program does not impose any greater requirements for making written findings for significant environmental effects than is required for an EIR under CEQA. When considering for approval a proposed project that has one or more significant adverse environmental effects, a public agency must make one or more written findings for each significant adverse effect, accompanied by a brief rationale for each finding. [Public Resources Code Section 21081 and CEQA Guidelines Sections 15065 and 15091]. The analysis in the Final SEA concluded that PAR 1168 has the potential to generate, significant adverse air quality impacts during operation which are more severe than what was previously analyzed in the October 2017 Final EA for Rule 1168 for air quality during operation.

For a proposed project with significant adverse environmental impacts, CEQA requires the lead agency to balance the economic, legal, social, technological, or other benefits of a proposed project against its significant unavoidable environmental impacts when determining whether to approve the proposed project. Under CEQA Guidelines Section 15093(a), "If the specific economic, legal, social, technological, or other benefits of a project outweigh the unavoidable significant adverse environmental effects, the adverse environmental effects may be considered "acceptable." Thus, after adopting findings, the lead agency must also adopt a "Statement of Overriding Considerations" to approve a proposed project with significant adverse environmental effects.

## **2.0 CEQA Provisions Regarding Findings**

CEQA generally requires agencies to make certain written findings before approving a proposed project with significant environmental impacts. South Coast AQMD is exempt from some of CEQA's requirements pursuant to its Certified Regulatory Program, but complies with its provisions where required or otherwise appropriate.

Relative to making Findings, CEQA Guidelines Section 15091 provides:

- (a) No public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. The possible findings are:
  - (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.
  - (2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
  - (3) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers,

make infeasible the mitigation measures or project alternatives identified in the final EIR.

- (b) The findings required by subsection (a) shall be supported by substantial evidence in the record.
- (c) The finding in subdivision (a)(2) shall not be made if the agency making the finding has concurrent jurisdiction with another agency to deal with identified feasible mitigation measures or alternatives. The finding in subsection (a)(3) shall describe the specific reasons for rejecting identified mitigation measures and project alternatives.
- (d) When making the findings required in subdivision (a)(1), the agency shall also adopt a program for reporting on or monitoring the changes which it has either required in the project or made a condition of approval to avoid or substantially lessen significant environmental effects. These measures must be fully enforceable through permit conditions, agreements, or other measures.
- (e) The public agency shall specify the location and custodian of the documents or other material which constitute the record of the proceedings upon which its decision is based.
- (f) A statement made pursuant to Section 15093 does not substitute for the findings required by this section.

The “changes or alterations” referred to in CEQA Guidelines Section 15091(a)(1) may include a wide variety of measures or actions as set forth in CEQA Guidelines Section 15370, including:

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- (e) Compensating for the impact by replacing or providing substitute resources or environments.

### 3.0 Summary of the Proposed Project

Rule 1168 was adopted in April 1989 to reduce VOC emissions from adhesive and sealant applications. Rule 1168 contains VOC limits for 59 categories of adhesives, adhesive primers, sealants, and sealant primers and applies to products used during manufacturing at stationary sources as well as products used by consumers that are not regulated by the California Air Resources Board (CARB) in the Consumer Products Regulation (CPR). Rule 1168 has been amended 14 times with the last amendment in October 2017. The purpose of the October 2017 amendments to Rule 1168 was to primarily reduce VOC emissions by 1.38 tpd but also reduce emissions from toxic air contaminants and stratospheric ozone-depleting compounds in formulations of adhesives, adhesive primers, sealants, and sealant primers.

The October 2017 amendments to Rule 1168 also included a commitment to conduct a technology assessment for top and trim adhesives, roofing products, plastic welding cements, and foam sealants to determine if products for nine adhesive and sealant categories were available that could achieve the VOC limits by January 1, 2023. The technology assessment concluded that some of these product categories either needed more time beyond January 1, 2023 to meet the VOC limits or that achieving the lower VOC limits would not be technically feasible. In addition, due to potential toxicity concerns associated with t-BAC and pCBtF and the uncertainty of on-site exposure modeling methodologies, the Stationary Source Committee of the South Coast AQMD Governing Board recommended a precautionary approach such that compounds with a known or suspected toxic endpoint will not be exempted from the definition of VOC in Rule 102 or other South Coast AQMD Rules. In 2017, t-BAC was identified as a carcinogen after it had been previously granted a partial exemption from the definition of a VOC in certain uses in several source specific rules, e.g., Rule 1113 – Architectural Coatings and Rule 1151 – Automotive Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations, but not Rule 1168. Further, in 2020, pCBtF was identified as a stronger carcinogen than t-BAC, after it had been previously exempted from the definition of a VOC in Rule 102 for all uses within the South Coast AQMD, including adhesives and sealants that would otherwise be subject to Rule 1168 requirements.

In consideration of the technology assessment and additional toxicity information, the Governing Board directed staff to conduct another rule development process to amend Rule 1168. Thus, the proposed project is designed to: 1) prohibit the use of pCBtF and t-BAC in adhesives and sealants due to toxicity concerns; 2) delay the effective dates of VOC limits or maintain the existing VOC limits for certain categories of adhesives and sealants where the technology assessment demonstrated the effective dates or VOC limits in the October 2017 version of Rule 1168 are not feasible; 3) create additional subcategories of regulated products to better characterize and refine VOC limits; 4) allow Opteon 1100 (cis-1,1,1,4,4,4-hexafluoro-2-butene/HFO-1336mzz-Z) as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHHA evaluation; and 5) remove definitions, update, clarify, and streamline rule language.

When comparing the types of activities and associated environmental impacts with implementing the VOC limits and compliance dates subject to the October 2017 version of Rule 1168 that was previously analyzed in the October 2017 Final EA to the currently proposed changes which comprise PAR 1168, the type and extent of the physical changes are expected to be similar and

will cause similar secondary adverse environmental impacts for the same environmental topic areas that were identified and analyzed in the October 2017 Final EA for Rule 1168. Thus, PAR 1168 is expected to have generally the same or similar effects that were previously examined in the October 2017 Final EA for Rule 1168 but that the air quality impacts from the proposed project will cause some delayed and permanent VOC emission reductions foregone, which will be more severe than what was discussed in the October 2017 Final EA. However, the proposed project will result in reducing the potential for toxic chemicals to be used in adhesives and sealants.

#### **4.0 Potentially Significant Adverse Impacts That Cannot be Reduced Below a Significant Level**

The analysis in the Final SEA independently considered whether PAR 1168 would result in new significant impacts for any environmental topic areas previously concluded in the October 2017 Final EA for Rule 1168 to have either no significant impacts or less than significant impacts. The Final SEA for PAR 1168 identified the topic of air quality during operation as the only area in which the proposed project may cause significant and unavoidable adverse environmental impacts. No other significant adverse impacts were identified. The following discussion independently considers the currently proposed project (PAR 1168) and analyzes the incremental changes for operational air quality impacts, relative to the baseline which is the project analyzed in the October 2017 Final EA for Rule 1168.

##### ***Air Quality Impacts During Operation***

Implementation of PAR 1168 is expected to cause delayed VOC emission reductions for the categories of Top and Trim Adhesive, Higher Viscosity CPVC Welding Cement, Clear, Paintable, Immediately Water-Resistant Sealant, and Rubber Vulcanization Adhesive due to extending the effective date to comply with VOC limits that were adopted in the October 2017 version of Rule 1168. In addition, the proposed project is likely to cause delayed VOC emission reductions from a proposed new subcategory of foam sealants, One-Component Foam Sealant, due to a combination of increasing the VOC limit from 50 grams per liter (g/L) to with 18 percent VOC by weight and delaying the effective date by six months from January 1, 2023 to July 1, 2023. Permanent foregone VOC emission reductions are also expected if the proposed higher VOC limits for certain categories of regulated products, including One-Component Foam Sealant, CPVC Welding Cement for Life Safety Systems, All Other Roof Adhesives, Single Ply Roof Membrane Adhesive (including both subcategories of with and without EPDM/TPO), and All Other Roof Sealants, are adopted.

The analysis in the Final SEA estimated the delayed and permanent forgone VOC emission reductions to be 0.42 tpd (equivalent to 840 pounds per day), and 0.28 tpd (equivalent to 560 pounds per day), respectively, which would exceed the South Coast AQMD's daily VOC operational significance threshold of 55 pounds per day. As a result, the peak daily VOC operational impacts associated with both the delayed and permanent foregone VOC emission reductions from implementing PAR 1168 are significant.

If significant adverse environmental impacts are identified, the CEQA document shall describe feasible mitigation measures that could minimize the significant adverse impacts of the proposed project. [CEQA Guidelines Section 15126.4]. Therefore, feasible mitigation measures are required

to reduce operational VOC impacts. CEQA defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." [Public Resources Code Section 21061.1].

However, the reason PAR 1168 is proposing to revise the VOC limits and/or effective dates for certain categories of adhesives and sealants is because there are currently no other products available that can feasibly attain the current VOC limits by the effective dates adopted in the October 2017 version of Rule 1168. Based upon these technological limitations, there are no feasible mitigation measures that would eliminate or reduce the significant adverse operational air quality impacts for VOC emissions to less than significant levels. Therefore, PAR 1168 is considered to have significant adverse unavoidable project-specific and cumulative air quality impacts during operation.

It is important to note that because the focus of PAR 1168 is on the VOC content of adhesives and sealants, emissions of other criteria pollutants that are typically associated with combustion activities (e.g., NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>) are not affected by PAR 1168. Thus, PAR 1168 will have no significant air quality impacts associated with NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions.

## **5.0 Findings Regarding Potentially Significant Environmental Impacts**

Public Resources Code Section 21081(a) and CEQA Guidelines Section 15091(a) provide that a public agency shall not approve or carry out a project with significant environmental effects unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. Additionally, the findings must be supported by substantial evidence in the record. [CEQA Guidelines Section 15091(b)]. Three potential findings can be made for potentially significant impacts:

**Finding 1:** Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final SEA. [Public Resources Code Section 21081(a)(1) and CEQA Guidelines Section 15091(a)(1)].

**Finding 2:** Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. [Public Resources Code Section 21081(a)(2) and CEQA Guidelines Section 15091(a)(2)].

**Finding 3:** Specific economic, legal, social, technological, or other considerations make infeasible the mitigation measures or project alternatives identified in the Final SEA. [Public Resources Code Section 21081(a)(3) and CEQA Guidelines Section 15091(a)(3)].

As identified in the Final SEA and summarized in Section 4.0 of this attachment, PAR 1168 has the potential to create significant adverse operational air quality impacts. The South Coast AQMD Governing Board, therefore, makes the following findings regarding the proposed project. The Findings are supported by substantial evidence in the record as explained in each finding. These Findings will be included in the record of project approval and will also be noted in the Notice of

Decision. The Findings made by the South Coast AQMD Governing Board are based on the following significant adverse impact identified in the Final SEA for PAR 1168:

**Potential delayed and permanent forgone VOC emission reductions during operation exceed the South Coast AQMD's applicable significance air quality thresholds and cannot be mitigated to less than significant levels.**

Finding and Explanation:

When comparing the types of activities and associated environmental impacts with implementing the VOC limits and compliance dates subject to the October 2017 version of Rule 1168 that was previously analyzed in the October 2017 Final EA to the currently proposed changes, PAR 1168 is anticipated to cause delayed and permanent forgone VOC emissions reductions due to extending the effective dates and maintaining the existing VOC limits for certain categories of regulated products, respectively. The Final SEA estimated these delayed and permanent forgone VOC emission reductions to be 0.42 tpd (equivalent to 840 pounds per day), and 0.28 tpd (equivalent to 560 pounds per day), respectively, which would exceed the South Coast AQMD's daily VOC operational significance threshold of 55 pounds per day.

Due to significant adverse air quality impacts during operation, feasible mitigation measures were required in the Final SEA to minimize the significant adverse impacts of the proposed project. However, the analysis in the Final SEA identified no feasible mitigation measures that would eliminate or reduce the significant adverse operational air quality impacts for VOC emissions to less than significant levels. Therefore, operational air quality impacts for VOC emissions are found to be significant and unavoidable.

The Governing Board finds that: 1) due to technological limitations, there are currently no other products available that can feasibly attain the original VOC limits by the effective dates adopted in the October 2017 version of Rule 1168; and 2) there are no feasible mitigation measures that would eliminate or reduce the project-level or cumulative significant adverse operational air quality impacts for VOC emissions to less than significant levels. [Public Resources Code Section 21081(a)(3) and CEQA Guidelines Section 15091(a)(3)].

## **5.1 Findings For Alternatives to the Proposed Project**

### **A. Alternative A: No Project**

Finding and Explanation:

The Final SEA analyzes a No Project Alternative, referred to as Alternative A, which consists of what would occur if the proposed project is not approved; in this case, not proposing amendments to Rule 1168. Under Alternative A, adhesives, sealants, sealant primers and adhesive primers would have to comply with the VOC emission limits in the October 2017 version of Rule 1168. Compliance with these VOC limits was projected to result in approximately 1.38 tpd of VOC emission reductions. However, manufacturers of certain adhesives and sealants have indicated that they need more time to develop



compliant products or cannot meet the applicable VOC limits by the January 1, 2023 effective date due to technological limitations, creating potential compliance issues, and likely resulting in the originally projected VOC emission reductions not being fully achieved.

Moreover, under Alternative A, t-BAC and pCBtF would continue to be classified as VOC-exempt solvents and as such, could continue to be used in formulating adhesives and sealants that would be subject to the October 2017 version of Rule 1168 and manufacturers would have the opportunity in the future to develop additional products formulated with these toxic compounds. Therefore, under Alternative A, the potential for new formulations of adhesives and sealants containing t-BAC and pCBtF could increase the existing toxicity impacts and associated health risks when compared to PAR 1168, which would eliminate the existing and future toxicity impacts through the prohibition of products formulation with t-BAC and pCBtF.

Based on proceeding discussion, Alternative A is the most harmful alternative relative to toxic air contaminants and toxicity impacts. Furthermore, the No Project Alternative is infeasible because it neither meets the objectives of PAR 1168 nor takes into consideration the conclusions of the technology assessment and the Stationary Source Committee's direction to take a precautionary approach evaluating existing or proposed exemptions for any compound with a toxic endpoint.

Because Alternative A is not environmentally superior to PAR 1168 and does not achieve the basic project objective, the Governing Board finds that the No Project Alternative is infeasible. [Public Resources Code 21081(a)(3); *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 1000- 1001 (upholding finding of infeasibility where agency determined alternative failed to achieve project objective)].

## **B. Alternative B: More Stringent Proposed Project**

### Finding and Explanation:

The Final SEA analyzes Alternative B, which is more stringent than PAR 1168. Under Alternative B, the required effective date to meet the proposed VOC limits would be six months earlier than the proposed project for the categories of One-Component Foam Sealant and Higher Viscosity CPVC Welding Cement while the effective date to meet the proposed VOC limit for Top and Trim Adhesive, Clear, Paintable, Immediately Water-Resistant Sealant, and Rubber Vulcanization Adhesive would need to occur twelve months earlier than the proposed project. All other elements would be the same under Alternative B as for PAR 1168. When compared to the proposed project, Alternative B may be infeasible at worst or difficult to achieve at best due to technological limitations and time constraints associated with developing and testing new formulations prior to making them commercially available for use.

With regard to toxicity impacts, PAR 1168 and Alternative B are equally beneficial in terms of reducing the public exposure to acute and carcinogenic toxic impacts of t-BAC and pCBtF due to prohibiting their usage in adhesives and sealants. Moreover, Alternative

B would result in 0.42 tpd of delayed VOC emission reductions foregone, the same as PAR 1168, but the delay would be for a shorter period of time (i.e., six to twelve months less) when compared to the proposed project. Under this alternative, the amount of permanent VOC emission reductions foregone (0.28 tpd) would be the same as PAR 1168.

The Governing Board finds that there are no feasible mitigation measures that would eliminate or reduce the project-level or cumulative significant adverse operational air quality impacts for VOC emissions to less than significant levels if Alternative B is implemented. As such, the Governing Board finds that Alternative B will not avoid or substantially lessen the significant operational air quality impacts as identified in the Final SEA. [Public Resources Code Section 21081(a)(3) and CEQA Guidelines Section 15091(a)(3)].

### **C. Alternative C: Less Stringent Proposed Project**

#### **I. Finding and Explanation:**

The Final SEA analyzes Alternative C, which is less stringent than the proposed project. Under Alternative C, the categories of Top and Trim Adhesive, One-Component Foam Sealant, Higher Viscosity CPVC Welding Cement, Clear, Paintable, Immediately Water-Resistant Sealant, and Rubber Vulcanization Adhesive would have an additional 12 months to meet the proposed VOC limits in PAR 1168. All other elements would be the same under Alternative C as for PAR 1168.

With regard to toxicity impacts, PAR 1168 and Alternative C are equally beneficial in terms of reducing the public exposure to acute and carcinogenic toxic impacts of t-BAC and pCBtF due to prohibiting their usage in adhesives and sealants. Alternative C would result in 0.42 tpd of delayed VOC emission reductions foregone, the same as proposed project, but the delay would occur over a longer period of time (e.g., twelve months longer) when compared to PAR 1168. Alternative C, however, would result in the same amount of permanent foregone VOC emission reductions (0.28 tpd) as PAR 1168.

The Governing Board finds that there are no feasible mitigation measures that would eliminate or reduce the project-level or cumulative significant adverse operational air quality impacts for VOC emissions to less than significant levels if Alternative C is implemented. Therefore, the Governing Board finds that Alternative C will not avoid or substantially lessen the significant environmental effect as identified in the Final SEA. [Public Resources Code Section 21081(a)(3) and CEQA Guidelines Section 15091(a)(3)].

### **D. Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168**

#### **I. Finding and Explanation:**

The Final SEA analyzes Alternative D, which purposes that the following categories of adhesives and solvents would meet the VOC limits in the October 2017 version of Rule 1168, but with an effective date of January 1, 2030 instead of January 1, 2023: One-

Component Foam Sealant, Single Ply Roof Membrane Adhesive (including both subcategories of with and without EPDM/TPO), All Other Roof Sealants, All Other Roof Adhesives, and CPVC Welding Cement for Life Safety Systems. All other elements would be the same under Alternative D as for PAR 1168.

Of the alternatives analyzed, Alternative D is the lowest toxic alternative because under this alternative, in addition to prohibiting t-BAC and pCBtF, certain categories of adhesives and sealants will need to be reformulated to have lower VOC contents with potentially fewer toxic compounds by January 1, 2030. Unlike the proposed project, Alternative D would only result in delayed VOC emission reductions foregone of 0.70 tpd, without resulting in any permanent VOC emission reductions foregone because manufacturers will have an additional seven years to develop and formulate adhesives and sealants for the aforementioned categories to meet the VOC limits from the October 2017 version of Rule 1168.

Over the long-term, Alternative D would result in no permanent VOC emission reductions foregone with the least amount of potential for adhesives and sealants to be formulated with toxic compounds. Thus, relative to PAR 1168 and the other feasible alternatives, Alternative D would be considered the environmentally superior alternative. However, due to uncertainties associated with the ability of manufacturers to formulate certain categories of adhesives and sealants to meet the low VOC limits established in the October 2017 version of Rule 1168 by January 1, 2030, Alternative D depends on future technological improvements in order to achieve the desired VOC emission reductions and the outcome of these future efforts are unknown.

The Governing Board finds that there are no feasible mitigation measures that would eliminate or reduce the project-level or cumulative significant adverse operational air quality impacts for VOC emissions to less than significant levels if Alternative D is implemented. As such, the Governing Board finds that Alternative D will not avoid or substantially lessen the significant environmental effect as identified in the Final SEA. [Public Resources Code Section 21081(a)(3) and CEQA Guidelines Section 15091(a)(3)].

## **5.2 Conclusion of Findings**

The Governing Board makes the following findings:

- 1) No feasible mitigation measures have been identified in the Final SEA that would eliminate or reduce the significant adverse operational air quality impacts for VOC emissions to less than significant levels.
- 2) Alternative A, the No Project alternative, is infeasible because it is the most harmful alternative relative to toxic air contaminants, does not achieve the proposed project objectives, and it does not take into consideration the conclusions of the technology assessment and the Stationary Source Committee's direction to take a precautionary approach evaluating existing or proposed exemptions for any compound with a toxic endpoint. Because Alternative A is not environmentally superior to PAR 1168 and does not achieve the basic project objective, the Governing Board finds that the No Project Alternative is infeasible. [Public Resources Code 21081(a)(3); *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 1000- 1001 (upholding finding of infeasibility where agency determined alternative failed to achieve project objective)].
- 3) For Alternatives B and C, the Governing Board finds that there are no feasible mitigation measures that would eliminate or reduce the project-level or cumulative significant adverse operational air quality impacts for VOC emissions to less than significant levels. As such, the Governing Board finds that neither Alternative B nor Alternative C will avoid or substantially lessen the significant operational air quality impacts as identified in the Final SEA. [Public Resources Code Section 21081(a)(3) and CEQA Guidelines Section 15091(a)(3)].
- 4) Alternative D was identified in the Final SEA as the environmentally superior alternative. However, the Governing Board finds that there are no feasible mitigation measures that would eliminate or reduce the project-level or cumulative significant adverse operational air quality impacts for VOC emissions to less than significant levels if Alternative D is implemented. Therefore, Alternative D will not avoid or substantially lessen the significant operational air quality impacts identified in the Final SEA. [Public Resources Code Section 21081(a)(3) and CEQA Guidelines Section 15091(a)(3)].

The Governing Board further finds that the Final SEA considered alternatives pursuant to CEQA Guidelines Section 15126.6, but there is no alternative to PAR 1168 that would reduce to insignificant levels the significant operational air quality impacts identified for the proposed project and still achieve the objectives of the proposed project.

The Governing Board further finds that the findings required by CEQA Guidelines Section 15091(a) are supported by substantial evidence in the record. The record of approval for this project may be found in the South Coast AQMD's Clerk of the Board's Office located at South Coast AQMD headquarters in Diamond Bar, California.

## 6.0 Statement of Overriding Considerations

If significant adverse impacts of a proposed project remain after incorporating mitigation measures, or no measures or alternatives to mitigate the adverse impacts are identified, the lead agency must make a determination that the benefits of the project outweigh the unavoidable adverse environmental effects if it is to approve the project. CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project. [CEQA Guidelines Section 15093(a)]. If the specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered “acceptable” [CEQA Guidelines Section 15093(a)]. Accordingly, a Statement of Overriding Considerations regarding potentially significant adverse operational VOC air quality impacts resulting from PAR 1168 has been prepared. This Statement of Overriding Considerations is included as part of the record of the project approval for PAR 1168. Pursuant to CEQA Guidelines Section 15093(c), the Statement of Overriding Considerations will also be noted in the Notice of Decision for PAR 1168.

Despite the inability to incorporate changes into PAR 1168 that will mitigate potentially significant adverse operational air quality impacts to a level of insignificance, the South Coast AQMD Governing Board finds that the following benefits and considerations outweigh the significant unavoidable adverse environmental impacts:

1. The analysis of potential adverse environmental impacts incorporates a “worst-case” approach. This entails the premise that whenever the analysis requires that assumptions be made, those assumptions that result in the greatest adverse impacts are typically chosen. This method likely overestimates the actual adverse environmental impacts from PAR 1168.
2. The potential adverse impacts from implementing PAR 1168 consist of delayed VOC emission reductions and permanent VOC emission reduction foregone, not emission increases.
3. In consideration of the total net accumulated emission reductions projected overall, the delayed and permanent VOC emission reductions forgone from PAR 1168 would not interfere with the air quality progress and attainment demonstration in the 2016 Air Quality Management Plan (AQMP). The 2016 AQMP identified ambient air pollutant levels relative to federal and state ambient air quality standards (AAQS), established baseline and future emissions, and developed control measures to ensure attainment of the AAQS. Specifically, the October 2017 amendments to Rule 1168 were adopted to partially implement Control Measure CTS-01 - Further Emission Reductions from Coatings, Solvents, Adhesives, and Sealants from the 2016 AQMP, which targeted one tpd of VOC emission reductions by 2023. Since the October 2017 version of Rule 1168 estimated VOC emission reductions of 1.38 tpd, even with the 0.28 tpd foregone emission reductions from the proposed project, PAR 1168 would still exceed the commitment to achieve one tpd of VOC emission reductions in the 2016 AQMP.

Moreover, the 2016 AQMP established a set-aside account for NO<sub>x</sub> and VOC emissions,

in the event that not all of the control measures proposed at that time would achieve the entire amount of desired emission reductions. At the time, the state implementation plan (SIP) set-aside account had an initial balance of 2.0 tpd of NO<sub>x</sub> and 0.5 tpd of VOC for each year from 2017 to 2030, and 0.5 tpd of NO<sub>x</sub> and 0.2 tpd of VOC in 2031, to accommodate projects with a positive conformity determination (i.e., emissions that exceed the de minimis threshold). In addition, the Revised Draft 2022 AQMP has a revised SIP set-aside reserve of 4.0 tpd VOC emissions specifically designated for the potential technology assessment and phaseout of toxics for VOC-based rules as targeted by Control Measure CTS-01. Thus, any delayed or permanent VOC emission reductions foregone from amending the various VOC-based rules, including but not limited to PAR 1168, will be offset by the VOC emissions in the SIP set-aside account. In addition, other opportunities for reducing VOC emissions from product formulations are expected to continue to occur over the long-term due to future VOC limits that are currently in Rules 1113, 1151 and 1168 that have not yet gone into effect. Therefore, cumulative air quality impacts from PAR 1168 and all other AQMP control measures when considered together, are not expected to be significant because implementation of all AQMP control measures, and in particular, this project, is expected to result in net emission reductions and overall air quality improvement.

4. The prohibition of t-BAC and pCBtF in PAR 1168 is consistent with the Stationary Source Committee recommendation in April 2017 to take a precautionary approach when considering an exemption for any compound with a toxic endpoint and removing the exempt status for any compound that has an established toxic endpoint. The cancer potency factors for t-BAC and pCBtF are 0.0047 and 0.03 (mg/kg-day)<sup>-1</sup>, respectively which are higher or within the same order of the cancer potency factor for some Group II compounds such as dimethyl carbonate (0.0035) and perchloroethylene (0.021). It should be noted that Group II compounds are those that are already restricted or will be restricted in the future because they are either toxic, potentially toxic, upper atmospheric ozone depleters, or cause other environmental impacts.
5. Although PAR 1168 would allow higher VOC limits for certain categories of adhesives and sealants due to prohibiting t-BAC and pCBtF, the long-term health benefit and reduced exposures from prohibiting these toxic compounds with substantial adverse carcinogenic health effects, would outweigh the permanent forgone VOC emission reductions.
6. PAR 1168 will provide relief for manufacturers of certain categories of adhesives and sealants which are technologically unable to meet the VOC limits in the October 2017 version of Rule 1168 by the effective date of January 1, 2023.
7. Although PAR 1168 would still cause significant operational air quality impacts for VOC emissions, it is considered to provide the best balance in achieving the project objectives while minimizing the significant adverse environmental impacts to operational air quality.

The South Coast AQMD Governing Board finds that the above-described considerations outweigh the unavoidable significant effects to the environment as a result of PAR 1168.

## **7.0 Mitigation**

CEQA requires an agency to prepare a plan for reporting and monitoring compliance with the implementation of measures to mitigate significant adverse environmental impacts. When making findings as required by Public Resources Code Section 21081 and CEQA Guidelines Section 15091, the lead agency must adopt a reporting or monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment [Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097(a)]. The provisions of CEQA Guidelines Section 15097 and Public Resources Code Section 21081.6 are triggered when the lead agency certifies a CEQA document in which mitigation measures changes, or alterations have been required or incorporated into the project to avoid or lessen the significance of adverse impacts identified in the CEQA document.

However, no feasible mitigation measures were identified for PAR 1168 that would eliminate or reduce the significant adverse operational air quality impacts for VOC emissions to less than significant levels. Since no feasible mitigation measures were identified, mitigation measures and a corresponding mitigation, monitoring and reporting plan are not required and have not been prepared.

## **8.0 Record of Proceedings**

For purposes of CEQA, including the Findings and Statement of Overriding Considerations, the Record of Proceedings for PAR 1168 consists of the following documents and other evidence, at a minimum:

- The Final SEA for PAR 1168, including appendices and technical studies included or referenced in the Final SEA, and all other public notices issued by South Coast AQMD for the Final SEA.
- The Draft SEA for the proposed project including appendices and technical studies included or referenced in the Draft SEA, and all other public notices issued by South Coast AQMD for the Draft SEA.
- All written and verbal public testimony presented during a noticed public hearing for PAR 1168.
- All documents, studies, EAs, or other materials incorporated by reference and tiered-off in the Draft SEA and Final SEA.
- The Resolution adopted by South Coast AQMD in connection with PAR 1168, and all documents incorporated by reference therein.
- Matters of common knowledge to South Coast AQMD, including but not limited to federal, state, and local laws and regulations.
- Any documents expressly cited in the Findings and Statement of Overriding Considerations.
- Any other relevant materials required to be in the record of proceedings by Public Resources Code Section 21167.6(e).

- The Notice of Decision, prepared in compliance with Public Resources Code Section 21080.5(d)(2)(E), CEQA Guidelines Section 15252(b), and South Coast AQMD Rule 110(f), if the Governing Board certifies the Final SEA and approves PAR 1168.

To comply with CEQA Guidelines Section 15091(e), the South Coast AQMD specifies the Deputy Executive Officer of the Planning, Rule Development, and Implementation Division as the custodian of the administrative record for PAR 1168, which includes the documents or other materials which constitute the record of proceedings upon which the South Coast AQMD's actions related to the proposed project is based, and which are located at the South Coast AQMD headquarters, 21865 Copley Drive, Diamond Bar, California 91765. Copies of these documents, which constitute the record of proceedings, are and at all relevant times have been and will be available upon request. This information is provided in accordance with Public Resources Code Section 21081.6(a)(2) and CEQA Guidelines Section 15091(e).



## ATTACHMENT G

(Adopted April 7, 1989)(Amended March 2, 1990)(Amended Feb. 1, 1991)  
(Amended July 19, 1991)(Amended August 2, 1991)  
(Amended December 4, 1992)(Amended December 10, 1993)  
(Amended April 11, 1997)(Amended February 13, 1998)(Amended September 15, 2000)  
(Amended June 7, 2002)(Amended July 12, 2002)(Amended October 3, 2003)  
(Amended January 7, 2005)(Amended October 6, 2017)  
(Amended [Date of Adoption])

### [RULE INDEX TO BE ADDED AFTER RULE ADOPTION]

#### **PROPOSED AMENDED RULE 1168:    ADHESIVE AND SEALANT APPLICATIONS**

(a)    ~~Purpose and Applicability~~

The purpose of this rule is to reduce emissions of volatile organic compounds (VOCs), toxic air contaminants, and stratospheric ozone-depleting compounds from the application of adhesives, adhesive primers, sealants, and sealant primers. ~~This rule applies to any person who uses, sells, stores, supplies, distributes, offers for sale, or manufactures for sale any adhesives, adhesive primers, sealants, or sealant primers, unless otherwise specifically exempted by this rule.~~

(b)    Applicability

This rule applies to any person who uses or stores any adhesives, adhesive primers, sealants, or sealant primers in the South Coast AQMD; any person who sells, stores, supplies, distributes, offers for sale, or manufactures for sale any adhesives, adhesive primers, sealants, or sealant primers for use within the South Coast AQMD; and any owner or operator of a Facility within the South Coast AQMD conducting operations which include the use of adhesives, adhesive primers, sealants, or sealant primers; unless otherwise specifically exempted by this rule.

(~~b~~c)    Definitions

For the purpose of this rule, the following definitions shall apply:

- (1)    ACRYLIC is a thermoplastic polymer or a copolymer of acrylic acid, methacrylic acid, esters of these acids, or acrylonitrile.
- (2)    ACRYLONITRILE-BUTADIENE-STYRENE (ABS) plastic is made by reacting monomers of acrylonitrile, butadiene, and styrene and is normally identified with an ABS marking.
- (3)    ABS TO POLYVINYL CHLORIDE (PVC) TRANSITION CEMENT is Plastic Welding Cement used to join ABS and PVC building drains or building sewers.
- (4)    ABS WELDING CEMENT is a Plastic Welding Cement that is used to join ABS pipe, fittings, and other system components, including, but not limited

to, components for shower pan liner, drain, closet flange, and backwater valve systems.

- (5) ADHESIVE is any substance that is used to bond one surface to another surface by attachment.
- (6) ADHESIVE PRIMER is a film-forming material applied to a substrate, prior to the application of an adhesive or adhesive tape, to increase adhesion or film bond strength, promote wetting, or form a chemical bond with a subsequently applied adhesive.
- (7) ADHESIVE TAPE is a backing material coated with an adhesive, and includes, but is not limited to, drywall tape, heat sensitive tape, pressure-sensitive adhesive tape, and water-activated tape.
- (8) AEROSOL ADHESIVE is any adhesive packaged as an Aaerosol Pproduct in which the spray mechanism is permanently housed in a can designed for hand-held application where no ancillary hoses or spray equipment is used.
- (9) AEROSOL PRODUCT is a pressurized spray system that dispenses product ingredients by means of a propellant contained in a product or a product's container, or by means of a mechanically induced force. Aerosol Products do not include Pump Spray.
- (10) ARCHITECTURAL APPLICATION is the use of a ~~regulated~~ Pproduct on stationary structures, including mobile homes, and their appurtenances.
- (11) ARCHITECTURAL APPURTENANCE is any accessory to a stationary structure, including, but not limited to, hand railings; cabinets; bathroom and kitchen fixtures; fences; rain-gutters and down-spouts; window screens; lamp-posts; heating and air conditioning equipment; other mechanical equipment; large fixed stationary tools; signs; motion picture and television production sets; and concrete forms.
- (12) BIG BOX RETAILER is a physically large-chain retail outlet that is classified by the U.S. Department of Labor under North American Industry Classification System code 444110: Home Centers or identified in a list maintained by the Executive Officer.
- (13) BUILDING ENVELOPE is the exterior and demising partitions of a building that enclose conditioned space.
- (14) BUILDING ENVELOPE MEMBRANE ADHESIVES are used to adhere membranes applied to the building envelope to provide a barrier to air or vapor leakage through the building envelope that separates conditioned from unconditioned spaces. Building Envelope Membranes are applied to

diverse materials, including, but not limited to, concrete masonry units (~~CMU~~), oriented stranded board—(~~OSB~~), gypsum board, and wood substrates.

- (15) CARPET PAD ADHESIVE is an adhesive used for the installation of a carpet pad (or cushion) beneath a carpet.
- (16) CERAMIC, GLASS, PORCELAIN, AND STONE TILE ADHESIVE is an adhesive used for the installation of tile products.
- (17) CHLORINATED POLYVINYL CHLORIDE (CPVC) plastic is a polymer of the chlorinated polyvinyl monomer that contains 67% chlorine and is normally identified with a CPVC marking.
- (18) CPVC WELDING CEMENT is a Plastic Welding Cement that is used to join CPVC pipe, fittings, and other system components, including, but not limited to, components for shower pan liner, drain, closet flange, and backwater valve systems.
- (19) CPVC WELDING CEMENT FOR LIFE SAFETY SYSTEM is a CPVC welding cement with an increased resistance to high temperatures which is used for life safety systems, including standalone and multipurpose fire sprinkler systems.
- (19~~20~~) CLEAR, PAINTABLE, AND IMMEDIATELY WATER-RESISTANT SEALANT is a compound with adhesive properties that contains no appreciable level of opaque fillers or pigments; transmits most or all visible light through itself when cured; is capable of being painted; is immediately resistant to precipitation upon application; and must meet the following criteria:
  - (A) Clarity of 15 turbidity units or less per ASTM D7315 - Determination of Turbidity Above 1 Turbidity Unit (TU) in Static Mode as manufactured and packaged;
  - (B) Color of Gardner 0 as tested by ASTM D1544 - Standard Test Method for Color of Transparent Liquids (Gardner Color Scale) or Platinum-Cobalt Color of 50 or less using ASTM D1209 - Standard Test Method for Color of Clear Liquids (Platinum-Cobalt Scale) as manufactured and packaged; and
  - (C) Compatible with paint per ASTM C1520 Standard Guide for Paintability of Latex Sealants.
- (20~~21~~) COMPUTER DISKETTE MANUFACTURING is the process where the fold-over flaps are glued to the body of a vinyl jacket.

- (2122) CONTACT ADHESIVE is an adhesive applied to two separate surfaces, allowed to dry before the two surfaces are placed in contact with each other, and forms an immediate bond after both adhesive-coated surfaces are placed in full contact with each other.
- (2223) CONSUMER PRODUCTS REGULATION is the regulation implemented by the California Air Resources Board (CARB) under Title 17 of the California Code of Regulations, Section 94507, et. seq.
- (2324) COVE BASE is a flooring trim unit, generally made of vinyl or rubber, having a concave radius on one edge and a convex radius on the opposite edge, that is used in forming a junction between the bottom wall course and the floor, to form an inside corner.
- (25) CUT EDGE SINGLE PLY ROOF MEMBRANE SEALANT is a Low-Solids sealant used on single ply roof membrane installations, which is designed to seal the non-factory edges (cut edges) with exposed scrim to inhibit water penetration.
- (2426) CYANOACRYLATE ADHESIVE is an acrylic adhesive that contains ethyl, methyl, methoxymethyl or other functional groupings of cyanoacrylate.
- (2527) DIP COAT is a method of application to a substrate by submersion into, and removal from, a bath.
- (2628) DISTRIBUTION CENTER is a warehouse or other specialized building, which is stocked with products (goods), to be redistributed to retailers, wholesalers, or directly to end-users.
- (2729) DRY WALL ADHESIVE is an adhesive used during the installation of gypsum dry wall to studs or solid surfaces.
- (2830) EDGE GLUE is an adhesive applied to the edge of multi-sheet carbonless forms prior to being fanned apart after drying.
- (2931) ELECTROSTATIC APPLICATION is a spray method where the atomized droplets are charged and subsequently deposited on the substrate by electrostatic attraction.
- (30) ~~ENERGY CURABLE ADHESIVES AND SEALANTS are single-component reactive products that cure upon exposure to visible light, ultra-violet light, or to an electron beam. The VOC content of thin film Energy Curable Adhesives and Sealants may be determined by manufacturers using ASTM Test Method 7767 Standard Test Method to Measure Volatiles from~~

~~Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them.~~

- (32) EPDM/TPO SINGLE PLY ROOF MEMBRANE ADHESIVE is any adhesive to be used for the installation or repair of Ethylene Propylene Diene Terpolymer (EPDM) and Thermoplastic Polyolefin (TPO) single ply roof membrane. Installation includes, but is not limited to, attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes, or ducts that protrude through the membrane.
- (3433) EXEMPT COMPOUNDS are as defined in Rule 102 – Definition of Terms (Rule 102). For the purpose of this rule, Opteon 1100 (cis-1,1,1,4,4,4-hexafluoro-2-butene/HFO-1336mzz-Z) shall only be considered exempt as a VOC for High-Pressure Two-Component Foam Sealants and Low-Pressure Two-Component Foam Sealants when used in an industrial or professional setting by workers trained with procedures and guidelines to reduce potential risk of exposure, if the Office of Environmental Health Hazard Assessment has sufficient information to establish a Cancer Inhalation Unit Risk Factor, an acute reference exposure level (REL) and a chronic REL of Opteon 1100conduct a toxicity assessment and, upon completion of its assessment:
- (A) Does not adopt a Cancer Inhalation Unit Risk Factor for Opteon 1100;
- (B) Develops an acute reference exposure level (REL) or interim acute REL for Opteon 1100, which is higher than or equal to the acute REL or interim acute REL for trans-1-Chloro-3,3,3-Trifluoropropene (HFO-1233zd); and
- (C) Develops a chronic REL or interim chronic REL for Opteon 1100, which is higher than or equal to the chronic REL or interim chronic REL for trans-1-Chloro-3,3,3-Trifluoropropene (HFO-1233zd).
- (3234) FACILITY means any permit unit or grouping of permit units or other air contaminant-emitting activities which are located on one or more contiguous properties within the South Coast DistrictAQMD, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control). —Such above-described groupings, if not contiguous, but connected only by land carrying a pipeline, shall not be considered one facility.

(3335) FIBERGLASS is fine filaments of glass.

(3436) FLOW COAT is an application method that coats an object by flowing a stream of ~~R~~egulated ~~P~~product over the object and draining off any excess product.

(3537) FOAM INSULATION is an expanding foam that is sprayed into ceiling or wall cavities to provide thermal resistance or to minimize air infiltration.

(3638) FOAM SEALANT is a foam used to fill and form a durable, airtight, water-resistant seal to common building substrates, such as wood, brick, concrete, foam board, and plastic.

(3739) GRAMS OF VOC PER LITER OF REGULATED PRODUCT, LESS WATER AND LESS EXEMPT COMPOUNDS is the weight of VOC per combined volume of VOC and product solids, and can be calculated by the following equation:

Grams of VOC per Liter of Regulated Product, Less Water and Less

$$\text{Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where:  $W_s$  = weight of volatile compounds, in grams  
 $W_w$  = weight of water, in grams  
 $W_{es}$  = weight of exempt compounds, in grams  
 $V_m$  = volume of material, in liters  
 $V_w$  = volume of water, in liters  
 $V_{es}$  = volume of exempt compounds, in liters

For reactive products, the VOC content is determined after curing. The grams of VOC per liter of any ~~R~~egulated ~~P~~Product, except a ~~L~~ow-~~S~~olids product, shall be calculated by the following equation:

Grams of VOC per Liter of Regulated Product, Less Water and Less

$$\text{Exempt Compounds} = \frac{W_{rs} - W_{rw} - W_{res}}{V_{rm} - V_{rw} - V_{res}}$$

Where:  $W_{rs}$  = weight of volatile compounds not consumed during curing, in grams  
 $W_{rw}$  = weight of water not consumed during curing, in grams

$W_{res}$  = weight of exempt compounds not consumed during curing, in grams

$V_{rm}$  = volume of material prior to reaction, in liters

$V_{rw}$  = volume of water not consumed during curing, in liters

$V_{res}$  = volume of exempt compounds not consumed during curing, in liters

(3840) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material, to be used for a Low-Solids product, and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where:  $W_s$  = weight of volatile compounds, in grams

$W_w$  = weight of water, in grams

$W_{es}$  = weight of exempt compounds, in grams

$V_m$  = volume of material, in liters

For reactive products, the VOC content is determined after curing.

(3941) GROUT is a cement-based sealant formulated to fill or seal gaps, including those associated with, but not limited to, tile installations.

(4042) HAND APPLICATION METHODS is the application of a Regulated Product using hand-held equipment. Such equipment includes paint brush, hand roller, trowel, spatula, dauber, rag, sponge, and mechanically- and/or pneumatic-driven syringe provided there is no atomization of the materials.

(43) HIGH-PRESSURE TWO-COMPONENT FOAM SEALANT is a foam sealant packaged as two containers and applied using a propellant system that is pressurized to greater than or equal to 250 psi.

(4144) HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY is equipment used to apply a Regulated Product by means of a spray gun that is designed to be operated and that is operated between 0.1 and 10 pounds per square inch gauge (~~psig~~) air pressure measured dynamically at the center of the air cap and at the air horns.

(45) HIGHER VISCOSITY CPVC WELDING CEMENT is a CPVC welding cement with a viscosity greater than or equal to 500 centipoise.

(46) HOT APPLIED MODIFIED BITUMEN/BUILT UP ROOF ADHESIVE is a thermoplastic hot melt adhesive which requires high temperature

conversion to a fluid at the point of application and complies with ASTM D312 or ASTM D6152. Installation or repair includes the application of roofing insulation, roofing ply sheets, roofing membranes, and aggregate surfacing.

(4247) INDOOR FLOOR COVERING ADHESIVE is an adhesive used during the installation of a carpet or indoor flooring that is in an enclosure and is not exposed to ambient weather conditions during normal use.

(48) LOW-PRESSURE TWO-COMPONENT FOAM SEALANT is a foam sealant packaged as two containers pressurized to less than 250 psi.

(4349) LOW-SOLIDS is any Regulated Product that contains less than one pound of solids per gallon of material (or 120 grams of solids per liter of material).

(4450) MAINTENANCE is a routine process to keep equipment and machinery in working order or to prevent breakdowns.

(4551) MANUFACTURING is the use of tools and labor to make things for sale.

(4652) MARINE APPURTENANCES include, but are not limited to, a wood boardwalk, deck, dock, fender, lock gate, or other wooden structure specified for the marine environment.

(4753) MARINE DECK SEALANT is any sealant that is applied to wooden marine decks and their appurtenances and is specified and used exclusively for the marine environment.

(4854) MARINE DECK SEALANT PRIMER is any sealant primer that is applied to wooden marine decks and their appurtenances and is specified and used exclusively for the marine environment.

(4955) MODIFIED BITUMINOUS PRIMER consist of bituminous materials, and a high flash solvent used to prepare a surface by (1) improving the adhesion and (2) absorbing dust from the surface for adhesive; or flashing cement bitumen membrane.

(5056) MODIFIED BITUMINOUS MATERIALS are materials obtained from natural deposits of asphalt or residues from the distillation of crude oil petroleum or coal which consist mainly of hydrocarbons, and include, but are not limited to, asphalt, tar, pitch, and asphalt tile that are soluble in carbon disulfide.

(5157) MULTI-PURPOSE CONSTRUCTION ADHESIVE is any adhesive to be used for the installation or repair of various construction materials,



including, but not limited to, drywall, subfloor, panel, fiberglass reinforced plastic (~~FRP~~), ceiling tile, and acoustical tile.

(~~525~~8) NON-STAINING PLUMBING PUTTY is a non-staining sealant formulated for use on natural surface materials that remains flexible and creates a waterproof seal when setting plumbing fixtures.

(59) ONE-COMPONENT FOAM SEALANT is a foam sealant packaged in aerosol containers and dispensed using propellant under pressure.

(~~53~~60) OUTDOOR FLOOR COVERING ADHESIVE is an adhesive used during the installation of carpet or floor covering that is not in an enclosure and is exposed to ambient weather conditions during normal use.

(~~54~~61) OZONE-DEPLETING COMPOUND is as defined in Rule 102.

(~~55~~62) PANEL ADHESIVE is an adhesive used for the installation of plywood, pre-decorated hardboard (or tileboard), fiberglass reinforced plasticFRP, and similar pre-decorated or non-decorated panels to studs or solid surfaces.

(~~56~~63) PERCENT VOC BY WEIGHT is the ratio of the weight of the VOC to the weight of the material, expressed as a percentage of VOC by weight. The percent VOC by weight can be calculated as follows:

$$\% \text{ VOC weight} = \frac{W_v}{W} \times 100$$

Where:  $W_v$  = weight of the VOCs, in grams

$W$  = weight of material, in grams

(~~57~~64) PERSON is as defined in Rule 102.

(~~58~~65) PLASTIC ADHESIVE PRIMER is a material applied to CPVC and PVC plastic to prepare joining surfaces for the application of CPVC or PVC welding cements.

(~~59~~66) PLASTIC WELDING CEMENT is the use of adhesives made of resins and solvents which are used to dissolve the surfaces of plastic, except ABS, CPVC, and PVC plastic, to form a bond between mating surfaces.

(~~60~~67) PLASTIC FOAM is a foam constructed of plastics.

(~~61~~68) PLASTICS are synthetic materials chemically formed by the polymerization of organic (carbon-based) substances. Plastics are usually compounded with modifiers, extenders, and/or reinforcers. They are capable of being molded, extruded, cast into various shapes and films, or drawn into filaments and are used to produce pipe, solid sheet, film, or bulk products.

- (~~62~~69) POLYCARBONATE is a thermoplastic resin derived from bisphenol A and phosgene, a linear polyester of carbonic acid, dihydroxy compound and any carbonate diester, or by ester interchange.
- (~~63~~70) POLYETHYLENE TEREPHTHALATE (~~PET, PETE~~) is a thermoplastic polyester formed from ethylene glycol by direct esterification or by catalyzed ester exchange between ethylene glycol and dimethyl terephthalate.
- (~~64~~71) POLYETHYLENE TEREPHTHALATE GLYCOL (~~PETG~~) is a glycol modified polyethylene terephthalate.
- (~~65~~72) POLYVINYL CHLORIDE (PVC) plastic is a polymer of the vinyl chloride monomer that contains 57 percent chlorine.
- (~~66~~73) POROUS MATERIAL is a substance which has tiny openings, often microscopic, in which fluids may be absorbed or discharged. Such materials include, but are not limited to, wood, fabric, paper, corrugated paperboard, and plastic foam.
- (~~67~~74) POTABLE WATER ARCHITECTURAL SEALANT is a sealant used in water treatment or water distribution applications required to comply with NSF/ANSI Standard 61: Drinking Water System Components – Health Effects.
- (~~68~~75) PRESSURE SENSITIVE ADHESIVE is an adhesive, typically coated on backings or release liners that forms a bond when pressure is applied, without the need for solvent, water, or heat.
- (~~69~~76) PRIVATE LABELER is the person, company, firm, or establishment (other than the toll manufacturer) identified on the label of a Regulated Product.
- (~~70~~77) PUMP SPRAY is a packaging system in which the product ingredients within the container are not under pressure and in which the product is expelled only while a pumping action is applied to a button, trigger, or other actuator.
- (~~71~~78) PVC WELDING CEMENT is a Plastic Welding Cement that is used to join PVC pipe, fittings, and other system components, including, but not limited to, components for shower pan liner, drain, closet flange, and backwater valve systems.
- (~~72~~79) QUANTITY AND EMISSIONS REPORTS (QER) ~~is~~are the reports specified in ~~subparagraph (f)(2)~~subdivision (e).
- (~~73~~80) REACTIVE PRODUCTS are Regulated Products composed, in part, of monomers that become integral parts of the cured product through chemical

reaction. Reactive Products include, but are not limited to, polyurethane and two-component ~~R~~egulated ~~P~~roducts.

(~~74~~81) REGULATED PRODUCT is an adhesive, adhesive primer, sealant, or sealant primer subject to this rule.

(~~75~~82) REINFORCED PLASTIC COMPOSITE is a composite material consisting of plastic reinforced with fibers.

(~~76~~83) REPAIR is an operation or activity to return a damaged object or an object not operating properly, to good condition.

(~~77~~84) ROADWAY SEALANT is any sealant to be applied to streets, highways, and other surfaces, including, but not limited to, curbs, berms, driveways, and parking lots.

(~~78~~85) ROLL COATER is a series of mechanical rollers that form a thin film on the surface roller, which is applied to a substrate by moving the substrate underneath the roller.

(~~86~~) ROOF ADHESIVE PRIMER is a film-forming material applied to a substrate, prior to the application of an adhesive or adhesive tape to increase adhesion or bond strength, promote wetting, or form a chemical bond with a subsequently applied adhesive and is marketed and sold exclusively for the installation or repair of roofing materials.

(~~87~~) ROOF SEALANT PRIMER is a film-forming material applied to a substrate prior to the application of a sealant to increase bond strength and is marketed and sold exclusively for the installation or repair of roofing materials.

(~~79~~88) RUBBER is any natural or manmade rubber-like substrate, and includes, but is not limited to, styrene-butadiene, polychloroprene (neoprene), butyl, nitrile, chlorosulfonated polyethylene, and ethylene propylene diene terpolymer.

(~~80~~89) RUBBER FLOORING ADHESIVE is an adhesive that is used for the installation of flooring material in which both the back and top surfaces are made of synthetic rubber, and which may be in sheet or tile form.

(~~84~~90) RUBBER VULCANIZATION ADHESIVE is a reactive adhesive used for rubber-to-substrate bonding achieved during vulcanization of the rubber elastomer at temperatures greater than 250°F. -Vulcanized rubber adhesive does not include bonding previously vulcanized rubber.

- (8291) SEALANT is any material with adhesive properties that is designed to fill, seal, waterproof, or weatherproof gaps or joints between two surfaces. Sealants include caulks.
- (8392) SEALANT PRIMER is any film-forming product applied to a substrate, prior to the application of a sealant, to enhance the bonding surface.
- (93) SHINGLE LAMINATING ADHESIVE is an asphalt based thermoplastic hot melt adhesive used to adhere individual layers during the manufacture of multi-layer asphalt shingles.
- (8494) SHOE REPAIR, LUGGAGE AND HANDBAG ADHESIVE is an adhesive used to repair worn, torn, or otherwise damaged uppers, soles, and heels of shoes, or for making repairs to luggage and handbags.
- (8595) SINGLE PLY ROOF MEMBRANE ADHESIVE (EXCEPT EPDM/TPO) is any adhesive to be used for the installation or repair of any non EPDM or TPO single ply roof membrane. -Installation includes, but is not limited to, attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes, or ducts that protrude through the membrane.
- (8696) SINGLE PLY ROOF MEMBRANE SEALANT (EXCEPT CUT EDGE) is any sealant used for the installation or repair, except for sealing the cut edges, of single ply roof membrane.
- (8797) SOLVENT WELDING is the softening of the surfaces of two substrates by wetting them with solvents and/or adhesives, and joining them together through a chemical and/or physical reaction(s) to form a fused union.
- (8898) SPECIAL PURPOSE CONTACT ADHESIVE is a contact adhesive that is used to bond all of the following substrates to any surface: melamine covered board, metal, unsupported vinyl, Teflon, ultra-high molecular weight polyethylene, rubber, and wood veneer 1/16 inch or less in thickness.
- (8999) STRUCTURAL GLAZING ADHESIVE is any adhesive to be used to adhere glass, ceramic, metal, stone, or composite panels to exterior building frames.
- (90100) STRUCTURAL WOOD MEMBER ADHESIVE is an adhesive used for the construction of any load bearing joints in wooden joists, trusses, or beams.
- (91101) SUBFLOOR ADHESIVE is an adhesive used for the installation of subflooring material over floor joists.
- (92102) THIN METAL LAMINATING ADHESIVE is an adhesive for bonding multiple layers of metal to metal or metal to plastic in the

production of electronic or magnetic components in which the thickness of the bond line(s) is less than 0.25 mil.

(~~93~~103) TIRE REPAIR is the expanding of a hole, tear, fissure, or blemish in a tire casing by grinding or gouging, applying adhesive, and filling the hole or crevice with rubber.

(~~94~~104) TIRE TREAD ADHESIVE is any adhesive to be applied to the back of precured tread rubber and to the casing and cushion rubber, or to be used to seal buffed tire casings to prevent oxidation while the tire is being prepared for a new tread.

(~~95~~105) TOLL MANUFACTURER is a ~~R~~egulated ~~P~~product manufacturer who produces ~~R~~egulated ~~P~~product for a private labeler.

(~~96~~106) TOP AND TRIM ADHESIVE is an adhesive used during the installation of automotive and marine trim, including, but not limited to, headliners, vinyl tops, vinyl trim, sunroofs, dash covering, door covering, floor covering, panel covering, and upholstery.

(~~97~~107) TOXIC AIR CONTAMINANT (TAC) is an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health as listed by the Office of Environmental Health Hazard Assessment.

(~~98~~108) TRAFFIC MARKING TAPE is preformed reflective tape that is applied to public streets, highways, and other surfaces, including, but not limited to, curbs, berms, driveways, and parking lots.

(~~99~~109) TRAFFIC MARKING TAPE ADHESIVE PRIMER is any ~~a~~Adhesive ~~p~~Primer that is applied to surfaces prior to installation of traffic marking tape.

(~~100~~110) TRANSFER EFFICIENCY is the ratio of the weight or volume of the ~~R~~egulated ~~P~~product solids adhering to an object to the total weight or volume, respectively, of the ~~R~~egulated ~~P~~product solids dispensed in the application process, expressed as a percentage.

(~~101~~111) VINYL COMPOSITIONS TILE (VCT) is a material made from thermoplastic resins, fillers, and pigments.

(~~102~~112) VEHICLE GLASS ADHESIVE PRIMER is a primer applied to vehicle glass or to the frame of a vehicle prior to installation or repair of the vehicle glass using an adhesive or sealant to improve adhesion to the pinch weld. For the purposes of this definition, a vehicle is a mobile machine that

transports passengers or cargo, and includes, but is not limited to, automobiles, trucks, buses, motorcycles, trains, ships, and boats.

(~~103~~113) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(~~104~~114) WATERPROOF RESORCINOL GLUE is a two-part, resorcinol-resin-based adhesive used in applications where the bond line must be resistant to conditions of continuous immersion in fresh or salt water.

(~~105~~115) WOOD FLOORING ADHESIVE is an adhesive used to install a wood floor surface, which may be in the form of parquet tiles, wood planks, or strip-wood.

(~~e~~d) Requirements

- (1) A person shall not use, sell, store, supply, distribute, offer for sale, or manufacture Regulated Products subject to the provisions of this rule, which contain VOC in excess of the applicable limits specified in Table 1 below:

**Table 1 – Regulated Product Categories and VOC Limits**

Category	VOC Limits (g/L <u>unless otherwise indicated</u> ) <sup>1</sup>			<u>Future Effective Date</u> <u>1/1/2019</u>	<u>1/1/2023</u>
	<u>Current Limit</u>	<u>Limit Effective 1/1/2023</u>	<u>Limit at Future Effective Date Upon Adoption</u>		
<b>Adhesives</b>					
Architectural Applications					
Building Envelope Membrane Adhesive	250				
Carpet Pad Adhesive	50				
Ceramic Glass, Porcelain, & Stone Tile Adhesive	65				
Cove Base Adhesive	50				
Dry Wall and Panel Adhesive	50				
Multi-Purpose Construction Adhesives	70				
Roofing					
<u>Hot Applied Modified Bitumen/Built Up Roof Adhesive</u>	<u>250</u>	<u>30</u>			
<u>EPDM/TPO Single Ply Roof Membrane Adhesive</u>	<u>250</u>				

**Proposed Amended Rule 1168 (Cont.) (Amended October 6, 2017[Date of Adoption])**

Category	VOC Limits (g/L <u>unless otherwise indicated</u> ) <sup>1</sup>			<u>Future Effective Date</u> 1/1/2019	1/1/2023
	<u>Current Limit</u>	<u>Limit Effective 1/1/2023</u>	<u>Limit at Future Effective Date Upon Adoption</u>		
Single Ply Roof Membrane Adhesive (Except EPDM/TPO)	250				200 <sup>2</sup>
<u>Shingle Laminating Adhesive</u>	<u>250</u>	<u>30</u>			
All Other Roof Adhesives	250				200 <sup>2</sup>
Rubber Floor Adhesive	60				
Structural Glazing Adhesive	100				
Structural Wood Member Adhesive	140				
Subfloor Adhesive	50				
VCT and Asphalt Tile Adhesive	50				
Wood Flooring Adhesive	100	<u>20</u>			20
All Other Indoor Floor Covering Adhesives	50				
All Other Outdoor Floor Covering Adhesives	<del>150</del> <u>50</u>			50	
Computer Diskette Manufacturing Adhesive	350				
Contact Adhesive	80				
Edge Glue Adhesive	250				
Plastic Welding Cement					
ABS Welding Cement	325				
ABS to PVC Transition Cement	510	<u>425</u>			425 <sup>2</sup>
CPVC Welding Cement	490	<u>400</u>			400 <sup>2</sup>
<u>CPVC For Life-Safety Systems</u>	<u>490</u>				
<u>Higher Viscosity CPVC</u>	<u>490</u>		<u>400</u>	<u>7/1/2024</u>	
PVC Welding Cement	510	<u>425</u>			425 <sup>2</sup>
All Other Plastic Welding Cements	<del>250</del> <u>100</u>			100	
Rubber Vulcanization Adhesive	<del>250</del> <u>850</u>		<del>850</del> <u>250</u>	<u>1/1/2028</u>	<u>250</u>
Special Purpose Contact Adhesive	250				
Thin Metal Laminating Adhesive	780				
Tire Tread Adhesive	100				
Top and Trim Adhesive	<del>250</del> <u>540</u>		<del>540</del> <u>250</u>	<u>1/1/2028</u>	<u>250</u> <sup>2</sup>
Waterproof Resorcinol Glue	<del>250</del> <u>170</u>			<u>170</u>	
All Other Adhesives	250				
<b>Substrate Specific Adhesives</b>					

**Proposed Amended Rule 1168 (Cont.) (Amended October 6, 2017[Date of Adoption])**

Category	VOC Limits (g/L <u>unless otherwise indicated</u> ) <sup>1</sup>			<u>Future Effective Date</u> 1/1/2019	1/1/2023
	<u>Current Limit</u>	<u>Limit Effective 1/1/2023</u>	<u>Limit at Future Effective Date Upon Adoption</u>		
Metal	30				
Plastic Foams	50				
Porous Material (except wood)	50				
Wood	30				
Fiberglass	80				
Reinforced Plastic Composite	<del>250</del> 200			200	
<b>Sealants</b>					
Architectural Applications					
Clear, Paintable, and Immediately Water-Resistant Sealant	<del>250</del> 380		<del>380</del> 250	1/1/2026	250
Foam Insulation	250	5% <sup>2</sup>			50 <sup>3</sup>
<del>Foam Sealant</del>	<del>250</del>				50 <sup>3</sup>
<u>One-Component Foam Sealant</u>	<u>250</u>		18% <sup>2</sup>	7/1/2023	
<u>High-Pressure Two-Component Foam Sealant</u>	<u>250</u>	5% <sup>2</sup>			
<u>Low-Pressure Two-Component Foam Sealant</u>	<u>250</u>	5% <sup>2</sup>			
Grout	<del>250</del> 65		65		
Roadway Sealant	250				
Non-Staining Plumbing Putty	<del>250</del> 150	50	150		50
Potable Water Sealant	<del>250</del> 100		100		
Roofing					
Single Ply Roof Membrane Sealant (Except Cut Edge)	450	250			250 <sup>2</sup>
<u>Cut Edge Single Ply Roof Membrane Sealant</u>	<u>450</u>	<u>250</u>			
All Other Roof Sealants	300				250 <sup>2</sup>
All Other Architectural Sealants	<del>250</del> 50			50	
Marine Deck Sealant	760				
All Other Sealants	420	250			250
<b>Adhesive Primers</b>					
Plastic	550				
Pressure Sensitive	<del>250</del> 785		785		
Traffic Marking Tape	150				



**Proposed Amended Rule 1168 (Cont.) (Amended October 6, 2017[Date of Adoption])**

Category	VOC Limits (g/L <u>unless otherwise indicated</u> ) <sup>1</sup>			<u>Future Effective Date</u> 1/1/2019	1/1/2023
	<u>Current Limit</u>	<u>Limit Effective 1/1/2023</u>	<u>Limit at Future Effective Date Upon Adoption</u>		
Vehicle Glass	250/700		700		
<u>Roof Adhesive Primers</u>	250				
All Other Adhesive Primers	250				
<b>Sealant Primers</b>					
Architectural Applications					
Non Porous	250				
Porous	775				
Marine Deck	760				
Modified Bituminous	500				
<u>Roof Sealant Primers</u>	750				
All Other Sealant Primers	750				

1. VOC limits are expressed as grams of VOC per liter of Regulated Product, less water and less exempt compounds, as defined in paragraph ~~(b)(37)(c)(39)~~ except for Low-Solid Regulated Products where the VOC limit is expressed in grams per liter of material as defined in paragraph ~~(b)(38)(c)(40)~~.

~~1.2. VOC limits are expressed as percent VOC by weight as defined in paragraph (c)(63). Technology assessment will be conducted in 2022 and the Executive Officer shall report on the results of the technology assessment to the Stationary Source Committee prior to the implementation date.~~

~~2. Technology assessment will be conducted in 2020 and the Executive Officer shall report on the results of the technology assessment to the Stationary Source Committee prior to the implementation date.~~

(2) Regulated Product Categorization

(A) Adhesives not regulated by a specific adhesive category, shall be limited to the VOC limits listed under the Substrate Specific Adhesive category in Table 1, if anywhere on the Regulated Product container, on any sticker or label affixed thereto, or in any sales or advertising literature, any representation is made that the Regulated Product may be used, or is suitable for use, on that substrate. –If the adhesive is used to bond dissimilar substrates together, the higher Substrate Specific Adhesive VOC limit shall apply.

- (B) If anywhere on the Regulated Product container, on any sticker or label affixed thereto, or in any sales or advertising literature, any representation is made that the Regulated Product may be used, or is suitable for use, as a Regulated Product for which a VOC standard in a specific category is specified in Table 1, then the lowest VOC standard shall apply. -This provision does not apply to Substrate Specific Adhesives or the default categories which include: All Other Roof Adhesives, All Other Indoor Floor Covering Adhesives, All Other Outdoor Floor Covering Adhesives, All Other Plastic Welding Cements, All Other Adhesives, All Other Roof Sealants, All Other Architectural Sealants, All Other Sealants, All Other Adhesive Primers, and All Other Sealant Primers.
- (3) Sell-Through and Use-Through Provision  
Any Regulated Product that is manufactured prior to the effective date of the applicable limit specified in Table 1 and that has a VOC content above that limit (but not above the limit in effect on the date of manufacture), may be sold, supplied, or offered for sale for up to three years after the specified effective date and used up to four years after the specified effective date.
- (4) All Regulated Product containers shall be closed when not in use. -Any VOC-laden application tools, such as a brush, pad, rag, cloth, or paper, used in the Regulated Product application, shall be stored and disposed of in closed containers when not in use.
- (5) Solvent cleaning of application equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of VOC-containing materials, used in cleaning operations shall be conducted pursuant to Rule 1171 - Solvent Cleaning Operations.
- (6) Transfer Efficiency  
A person shall not apply VOC-containing Regulated Product unless the Regulated Product is applied with properly operating equipment in accordance with operating procedures specified by either the equipment manufacturer or by use of one of the following methods:
- (A) Electrostatic application; ~~or~~
  - (B) Flow coat; ~~or~~
  - (C) Dip coat; ~~or~~
  - (D) Roll coat; ~~or~~
  - (E) High-Volume, Low-Pressure (HVLP) spray; ~~or~~

- (F) Hand application methods; or
  - (G) Such other application methods as are demonstrated to the Executive Officer to be capable of achieving a transfer efficiency equivalent to or better than the method listed in subparagraph ~~(e)(6)(E)(d)(6)(E)~~ and for which prior written approval of the Executive Officer has been obtained.
- (7) Control Devices
- A person may comply with the provisions of paragraphs ~~(e)(1)(d)(1)~~, or ~~(e)(6)(d)(6)~~, or both, by using approved air pollution control equipment to apply a Regulated Product, provided:
- (A) The control device reduces VOC emissions from an emission collection system by at least 95 percent by weight or the output of the air pollution control device is no more than 50 parts per million ppm VOC by volume calculated as carbon with no dilution; and
  - (B) The owner/ or operator demonstrates that the emission collection system collects at least 90 percent by weight of the VOC emissions generated by the sources of VOC emissions.
- (8) A person may comply with the provisions of paragraph ~~(e)(1)(d)(1)~~ by means of an Alternative Emission Control Plan to apply a Regulated Product pursuant to Rule 108 – Alternative Emission Control Plans.
- (9) The VOC content of Regulated Products that are applied with the use of refillable pressurized spray system are subject to the VOC limits of this rule.
- (10) Except as provided in subdivision ~~(i)(i)~~ and paragraphs ~~(e)(3)(d)(3)~~, ~~(e)(7)(d)(7)~~, and ~~(e)(8)(d)(8)~~, a person shall not store Regulated Products which contain VOC in excess of the limits specified in paragraph ~~(e)(1)(d)(1)~~.
- (11) Containers used for mixing VOC-containing Regulated Products shall be kept closed at all times except when in use or when product is being added or removed.

~~(de)~~ Reporting and Recordkeeping Requirements

~~Records of regulated product usage shall be maintained pursuant to Rule 109.~~

(1) General Quantity and Emission Report (QER)

The manufacturer or private labeler of Regulated Products shall submit to the South Coast AQMD a QER for Regulated Product sales into or within the South Coast AQMD according to the schedule in Table 2. The QER for

a manufacturer or private labeler of Regulated Products shall include the following information:

- (A) Product manufacturer (as listed on the label);
- (B) Product name and code;
- (C) Applicable Rule 1168 category;
- (D) VOC content of Regulated Products as follows:
  - (i) Regulated Products subject to percent VOC by weight limits shall be reported as percent VOC by weight; and
  - (ii) All other Regulated Products shall be reported as:
    - (A) Grams of VOC per liter of Regulated Product (less water and exempt solvents); and
    - (B) Grams of VOC per liter of material
- (E) Whether the product is waterborne or solvent-based;
- (F) Weight percent of tertiary-Butyl Acetate and para-Chlorobenzotrifluoride for any product containing more than 0.01 weight percent of either;
- (G) Total annual volume sold into or within the South Coast AQMD, including products sold through distribution centers located within or outside the South Coast AQMD, reported in gallons for all container sizes; and
- (H) For any Regulated Product with VOC content higher than the applicable limit in Rule 1168, an indication whether the product has been sold under any of the following provision of this rule:
  - (i) Sell-through provision;
  - (ii) Low-Solids product;
  - (iii) Exempted under subdivision (j);
  - (iv) Complying with subparagraph (d)(7) – Control Device ; or
  - (v) Complying with subparagraph (d)(8) – Alternative Emission Control Plans.

(2) Aerosol QER

The manufacturer or private labeler of aerosol adhesives and aerosol adhesive primers shall submit to the South Coast AQMD a QER of aerosol adhesive and aerosol adhesive primer sales into or within the South Coast AQMD according to the schedule in Table 2. The report shall include the following information:

- (A) Product manufacturer (as listed on the label);

- (B) Product name and code;
  - (C) Percent VOC by weight;
  - (D) Weight percent of tertiary-Butyl Acetate and para-Chlorobenzotrifluoride for any product containing more than 0.01 weight percent of either;
  - (E) Total weight sold, including products sold through distribution centers located within or outside the South Coast AQMD; and
  - (F) Container size of product.
- (3) A corporate officer of the manufacturer or private labeler of Regulated Products, who previously reported under (e)(1) and (e)(2), that had no distribution or sales into or within the South Coast AQMD for the specified reporting years in Table 2, must certify that fact in a letter and on company letterhead by the reporting deadline specified in Table 2.
  - (A) A manufacturer or private labeler of Regulated Products that has no intention to sell Regulated Products into or within the South Coast AQMD in future years, must indicate that fact to be removed from future outreach efforts.
  - (B) A manufacturer or private labeler of Regulated Products who resumes sales of Regulated Product into or within the South Coast AQMD, must adhere to the reporting requirements specified in (e)(1) and (e)(2).
- (4) Big Box Retailer or Distribution Center QER

A big box retailer or distribution center shall submit a QER to the Regulated Product manufacturer or private labeler, according to the schedule in Table 2 and maintain records to verify all required data being reported for three years and make them available upon request by the Executive Officer. The QER must be electronically submitted, in a spreadsheet format and certified that all information reported is true and correct. The QER must contain the following information:

  - (A) The manufacturer or private labeler's product name and code; and
  - (B) The quantity of each Regulated Product, aerosol adhesive, and aerosol adhesive primer distributed into the South Coast AQMD.
- (5) QER Reporting Timeline

A manufacturer and private labeler of Rregulated Pproducts; and big box retailers and distribution centers; shall submit to the South Coast AQMD a

QER of Rregulated Pproducts sold into or within the South Coast AQMD according to the reporting timeline identified in Table 2 below:

**Table 2: Reporting Timeline**

<b><u>Reporting Deadlines</u></b>		<b><u>Reported Years</u></b>
<b><u>Manufacturers &amp; Private Labelers</u></b>	<b><u>Big Box Retailers &amp; Distribution Centers</u></b>	
<u>September 1, 2019</u>	<u>May 1, 2019</u>	<u>2017, 2018</u>
<u>September 1, 2022</u>	<u>May 1, 2022</u>	<u>2020, 2021</u>
<u>September 1, 2025</u>	<u>May 1, 2025</u>	<u>2023, 2024</u>
<u>September 1, 2030</u>	<u>May 1, 2030</u>	<u>2028, 2029</u>
<u>September 1, 2035</u>	<u>May 1, 2035</u>	<u>2033, 2034</u>
<u>September 1, 2040</u>	<u>May 1, 2040</u>	<u>2038, 2039</u>

**(6) Facilities Using the 55--Gallon Exemption**

For each calendar year (January 1 through December 31), an owner or operator of a Facility using or purchasing Regulated Products under the provisions of paragraph (j)(5)(C) shall submit to the South Coast AQMD by September 1 of the following calendar year, an annual report of Regulated Product used under the provisions of paragraph (j)(5)(C) within the South Coast AQMD and maintain records to verify all required data being reported for three years and make them available upon request by the Executive Officer. The report shall include the following information:

- (A) Product manufacturer (as listed on the label);
- (B) Product name and code;
- (C) Grams of VOC per liter of Regulated Product (less water and exempt solvents);
- (D) Grams of VOC per liter of material;
- (E) Unit size of product;
- (F) Total volume purchased, in gallons; and
- (G) The name and address of the company or retailer where the products were purchased.

**(7) Manufacturers, private labelers, or suppliers of Regulated Products shall maintain records to verify all required data being reported to the South Coast AQMD pursuant to subparagraphs (e)(1), (e)(2), and (e)(3). The**

records shall be maintained for three years and made available upon request by the Executive Officer. Such records shall include, but not be limited to:

(A) Laboratory reports or formulation data used for VOC content calculations; and

(B) Records used to determine annual sales volumes.

(8) An owner or operator of a Facility within the South Coast AQMD conducting operations, which include the use of Regulated Products, shall maintain records pursuant to Rule 109 – Recordkeeping For Volatile Organic Compound Emissions.

(9) Confidentiality of Information

Subject to the provisions of the California Public Records Act (Gov Code §§ 6250-6276.48) information submitted to the Executive Officer may be designated as confidential. The designation must be clearly indicated on the reporting form, identifying exactly which information is deemed confidential. South Coast AQMD guidelines require a detailed and complete basis for such claim in the event of a public records request.

(ef) Test Methods

(1) The VOC content of ~~R~~regulated ~~P~~products shall be determined by the ~~South Coast Air Quality Management District (South Coast AQMD)~~ using the applicable test methods below. –When a test method specifies it is inapplicable to a product category, it shall not be used for that inapplicable category. –The ~~Executive Officer will develop a~~ “South Coast AQMD Test Method Guidance Document” ~~to determine~~ which test method will should be used when two or more applicable test methods can be used to demonstrate compliance with the rule. –The selected test method will be based on product type, chemistry, and VOC content.

(A) VOC content may be determined by ~~USEPA~~–United States Environmental Protection Agency (U.S. EPA) Reference Method 24 (Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coating, Code of Federal Regulations Title 40, Appendix A, utilizing Procedure B of ASTM Method D2369).

(B) VOC content may be determined by Method 304 (Determination of Volatile Organic Compounds (VOC) in Various Materials) in the

- South Coast AQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual.
- (C) Exempt compound content shall be determined by Method 303 in the South Coast AQMD's "Laboratory Methods of Analysis for Enforcement Samples" or ASTM Method D4457.
  - (D) VOC content may be determined by Method 313 (Determination of Volatile Organic Compounds VOC by Gas Chromatography-Mass Spectrometry) in the South Coast AQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual.
  - (E) VOC content may be determined by ASTM Test Method 6886 (Standard Test Method for Determination of the Weight Percent Individual Volatile Organic Compounds in Waterborne Air-Dry Coatings by Gas Chromatography).
  - (F) The VOC content of PVC, CPVC, ABS, ABS to PVC Transition Welding Cements, and plastic adhesive primers shall be determined by Method 316A in the South Coast AQMD's "Laboratory Methods of Analysis for Enforcement Samples."
  - (G) The VOC content of cyanoacrylate adhesives shall be determined by Method 316B in the South Coast AQMD's "Laboratory Methods of Analysis for Enforcement Samples."
  - (H) The VOC content of reactive adhesives may be determined by Appendix A to Subpart PPPP of 40 CFR Part 63—Determination of Weight Volatile Matter Content and Weight Solids Content of Reactive Adhesives.
- (2) The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gases shall be determined by ~~USEPA'S~~ U.S. EPA Test Method 18, or CARB Method 422 for the determination of emissions of Exempt Compounds and ~~USEPA's~~ U.S. EPA Test Methods 25, 25A, South Coast AQMD's Method 25.1, or South Coast AQMD Test Method 25.3. (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) for the determination of total organic compound emissions. ~~—Emissions determined to exceed any limits established by this rule through the use of any of the above referenced test methods shall constitute a violation of the rule.~~
- (3) Viscosity shall be determined by ASTM D 1084— Standard Test Methods for Viscosity of Adhesives.



- (4) The following classes of compounds: cyclic, branched, or linear, completely fluorinated alkanes; cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine, will be analyzed as exempt compounds for compliance with subdivision ~~(e)~~(d), only at such time as manufacturers specify which individual compounds are used in the Regulated Product formulations and identify the test methods, which, prior to such analysis, have been approved by the U.S. EPA and the South Coast AQMD, that can be used to quantify the amounts of each exempt compound.
- (5) **Equivalent Test Methods**  
Other test methods determined to be equivalent after review by the Executive Officer, CARB, and the ~~USEPA~~U.S. EPA, and approved in writing by the ~~District~~South Coast AQMD Executive Officer, may also be used.
- (6) All test methods referenced in this subdivision shall be the version most recently approved by the appropriate governmental entities.
- (7) Emissions determined to exceed any limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of the rule.
- (fg) **Administrative Requirements**
  - ~~(1) — Regulated products manufactured after January 1, 2019, shall display the following:~~
  - (A1) Each container shall display the VOC content of the Regulated Product, as recommended for application and as determined by calculation based on product formulation or laboratory analysis using the applicable test method in subdivision (f). The VOC content shall be displayed as grams of VOC per liter of Regulated Product, excluding water and exempt compounds, ~~or for all but the following Regulated Products:~~
    - (A) Low-Solids materials shall display the VOC as grams of VOC per liter of material for low-solids products;
    - (B) Effective January 1, 2026, Foam Insulation, One-Component Foam Sealants, High-Pressure Two-Component Foam Sealants, and Low-Pressure Two-Component Foam Sealant shall display the VOC as

~~percent VOC by weight; and The VOC content shall be determined by calculation based on product formulation or laboratory analysis using the applicable test method in subdivision (e).~~

(~~i~~C) Regulated ~~P~~products subject to both the provisions of this rule and the Consumer Products Regulation may display the VOC content as percent VOC by weight provided the ~~R~~regulated ~~P~~product has supplemental product documentation published from the manufacturer that displays the VOC content in grams of VOC per liter of ~~R~~regulated ~~P~~product.

(~~B~~2) Each container or an associated product data sheet shall display a statement of the manufacturer's recommendations regarding thinning, reducing, or mixing with any other VOC containing material, if applicable. ~~–Mixing recommendations shall specify a ratio which results in a compliant, as applied, product.~~

(~~C~~3) Each container shall display the date of manufacture of the contents or a date code indicating the date of manufacture. ~~–A manufacturer utilizing a date code shall file an explanation of each date code with the District South Coast AQMD Executive Officer.~~

(~~D~~4) Each container of all Top and Trim Adhesives shall include the statement “For Top and Trim Uses Only” prominently displayed.

(~~E~~5) Each container of all Rubber Vulcanization Adhesives shall include the statement “For Rubber Vulcanization Adhesive Uses Only” prominently displayed.

(~~F~~6) Each container of all Pressure Sensitive Adhesive Primers shall include the statement “For Pressure Sensitive Adhesive Primer Uses Only” prominently displayed.

(~~G~~7) Each container of all ABS to PVC Transition Cements shall include the statement “For ABS to PVC Transition Uses Only” prominently displayed.

(8) Effective July 1, 2023, each container of CPVC For Life Safety Systems shall include the statement “For CPVC Life Safety System Uses Only” prominently displayed.

(9) Effective July 1, 2023, each container of Higher Viscosity CPVC Welding Cement shall include a statement prominently displayed on the label to indicate if the product is formulated for “Medium” or “Heavy” or “Extra Heavy” applications.

(2) ~~Reporting Requirements~~

**(A) — Reporting Timeline**

A ~~Quantity and Emission Report (QER)~~ shall be submitted according to the reporting timeline identified in Table 2 below:

- (i) ~~Every three years, from the years 2019 to 2025.~~
- (ii) ~~Every five years, thereafter, until and including 2040.~~

**Table 2: Reporting Timeline**

Reporting Deadlines		Reported Years
Manufacturers & Private Labelers	Big Box Retailers & Distribution Centers	
September 1, 2019	May 1, 2019	2017, 2018
September 1, 2022	May 1, 2022	2020, 2021
September 1, 2025	May 1, 2025	2023, 2024
September 1, 2030	May 1, 2030	2028, 2029
September 1, 2035	May 1, 2035	2033, 2034
September 1, 2040	May 1, 2040	2038, 2039

**(B) — General QER**

A manufacturer or private labeler of regulated products shall submit to the District a ~~QER of regulated product sales into or within the District~~ according to the schedule in Table 2. The report shall include the following information:

- (i) ~~Product manufacturer (as listed on the label);~~
- (ii) ~~Product name and code;~~
- (iii) ~~Applicable Rule 1168 category;~~
- (iv) ~~The grams of VOC per liter of regulated product (less water and exempt solvents);~~
- (v) ~~The grams of VOC per liter of material;~~
- (vi) ~~Whether the product is waterborne or solvent-based;~~
- (vii) ~~Total annual volume sold into or within the District, including products sold through distribution centers located within or outside the District, reported in gallons for all container sizes;~~
- (viii) ~~For any regulated product with VOC content higher than the applicable limit in Rule 1168, an indication whether the product has been sold under any of the following provision of this rule:~~
  - (A) ~~Sell through provision;~~
  - (B) ~~Low Solids product;~~

~~(C) — Exempted under subdivision (i);~~

~~(D) — Complying with subparagraph (c)(7) — Control Device ; or~~

~~(E) — Complying with subparagraph (c)(8) — Alternative Emission Control.~~

~~(C) — Aerosol QER~~

~~The manufacturer or private labeler of aerosol adhesives and aerosol adhesive primers shall submit to the District a QER of aerosol adhesive and aerosol adhesive primer sales into or within the District according to the schedule in Table 2. The report shall include the following information:~~

~~(i) — Product manufacturer (as listed on the label);~~

~~(ii) — Product name and code;~~

~~(iii) — Percent VOC by weight;~~

~~(iv) — Total weight sold, including products sold through distribution centers located within or outside the District; and~~

~~(v) — Container size of product.~~

~~(D) — A corporate officer of the manufacturer or private labeler of regulated products, who previously reported under (f)(2)(B) and (f)(2)(C), that had no distribution or sales into or within the District for the specified reporting years in Table 2, must certify that fact in a letter and on company letterhead by the reporting deadline specified in Table 2.~~

~~(i) — A manufacturer or private labeler of regulated products that has no intention to sell regulated products into or within the District in future years, must indicate that fact to be removed from future outreach efforts.~~

~~(ii) — A manufacturer or private labeler of regulated products who resumes sales of regulated product into or within the District, must adhere to the reporting requirements specified in (f)(2)(B) and (f)(2)(C).~~

~~(E) — Big Box Retailer or Distribution Center QER~~

~~A big box retailer or distribution center shall submit a QER to the regulated product manufacturer or private labeler, according to the schedule in Table 2. The QER must be electronically submitted, in a spreadsheet format and certified that all information reported is true and correct. The QER must contain the following information:~~

~~(i) — The manufacturer or private labeler's product name and code; and~~

~~(ii) — The quantity of each regulated product, aerosol adhesive, and aerosol adhesive primer distributed into the District.~~

~~(F) — Facilities Using the 55 Gallon Exemption~~

~~For each calendar year (January 1 through December 31) beginning in 2017, the facility using or purchasing regulated products under the provisions of paragraph (i)(5)(C) shall submit to the District by September 1 of the following calendar year, an annual report of regulated product used under the provisions of paragraph (i)(5)(C) within the District. The report shall include the following information:~~

~~(i) — Product manufacturer (as listed on the label);~~

~~(ii) — Product name and code;~~

~~(iii) — The grams of VOC per liter of regulated product (less water and exempt solvents);~~

~~(iv) — The grams of VOC per liter of material;~~

~~(v) — Unit size of product;~~

~~(vi) — Total volume purchased, in gallons;~~

~~(vii) — The name and address of the company or retailer where the products were purchased.~~

~~(3) — Manufacturers, private labelers, or suppliers of regulated products shall maintain records to verify data used to determine VOC content in preparing their QER required to be reported to the South Coast AQMD pursuant to subdivision (e). The records shall be maintained for three (3) years and made available upon request by the Executive Officer. Such records shall include, but not be limited to:~~

~~(A) — Laboratory reports; or~~

~~(B) — Formulation data used for VOC content calculations.~~

~~(4) — Confidentiality of Information~~

~~Subject to the provisions of the California Public Records Act (Gov Code §§ 6250-6276.48) information submitted to the Executive Officer may be designated as confidential. The designation must be clearly indicated on the reporting form, identifying exactly which information is deemed confidential. District guidelines require a detailed and complete basis for such claim in the event of a public records request.~~

~~(gh) Prohibition of Sales and Use~~

~~(1) Except as provided in subdivision (i)(j), no person shall use, supply, sell, or offer for sale a Regulated Product in the District South Coast AQMD that~~

contains more than 0.01 percent by weight of the following chemicals: chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene, or Group II exempt compounds. This provision does not apply to cyclic, branched, or linear, completely methylated siloxanes.

~~(2) On and after January 1, 2019, except as provided in subdivision (i), no person shall use, supply, sell, or offer for sale a regulated product in the District that contains Group II exempt compounds listed in Rule 102 in quantities greater than 0.1 percent by weight. This provision does not apply to cyclic, branched, or linear, completely methylated siloxanes.~~

(2) Prohibition of tertiary-Butyl Acetate (t-BAc) and para-Chlorobenzotrifluoride (pCBtF)

On and after the prohibition effective dates specified in Table 3, no person shall manufacture a Regulated Product for sale into or within the South Coast AQMD or supply, sell, offer for sale or use a Regulated Product in the South Coast AQMD that contains more than 0.01 percent by weight of either pCBtF or t-BAc.

**Table 3: pCBtF and t-BAc Prohibition Timeline**

<u>Category</u>	<u>Prohibition Effective Date</u>	<u>Sell-through End Date</u>	<u>Use-through End Date</u>
<u>pCBtF Prohibition Effective Dates</u>			
<u>Cut Edge Single Ply Roof Membrane Sealant</u>	<u>January 1, 2027</u>	<u>January 1, 2028</u>	<u>January 1, 2028</u>
<u>EPDM/TPO Single Ply Roof Membrane Adhesive</u>			
<u>Roof Adhesive Primer</u>			
<u>Single Ply Roof Membrane Adhesive (Except EPDM/TPO)</u>	<u>January 1, 2025</u>	<u>January 1, 2028</u>	<u>January 1, 2028</u>
<u>Single Ply Roof Membrane Sealant (Except Cut Edge)</u>			
<u>All Other Roof Sealant</u>			
<u>Roof Sealant Primer</u>			
<u>Clear, Paintable, and Immediately Water- Resistant Sealant</u>	<u>January 1, 2026</u>	<u>January 1, 2028</u>	<u>January 1, 2028</u>
<u>All Regulated Products not listed above</u>	<u>January 1, 2024</u>	<u>January 1, 2027</u>	<u>January 1, 2028</u>
<u>t-BAc Prohibition Effective Dates</u>			
<u>All Regulated Products</u>	<u>January 1, 2024</u>	<u>January 1, 2027</u>	<u>January 1, 2028</u>

(h*i*) Rule 442 Applicability

Any Regulated Product which is exempt from all or a portion of this rule shall comply with the provisions of Rule 442 – Usage of Solvents.

(h*j*) Exemptions

(1) The provisions of this rule shall not apply to:

(A) Adhesives, adhesive primers, sealants, or sealant primers, and associated application processes that are subject to Rule 1124 – Aerospace Assembly and Component Manufacturing Operations;

(B) Adhesive tape;

- (C) Regulated ~~P~~products shipped, supplied, or sold to persons for use outside the ~~District~~ South Coast AQMD; or
  - (D) Distribution centers that do not ship ~~R~~regulated ~~P~~products into or within the ~~District~~ South Coast AQMD.
- (2) The provisions of this rule, except paragraphs ~~(f)(2)(C)(e)(2)~~, shall not apply to aerosol adhesives and primers dispensed from non-refillable aerosol spray systems.
- (3) The provisions of this rule, except paragraphs ~~(g)(1)(h)(1)~~ and ~~(g)(2)(h)(2)~~, shall not apply to:
  - (A) Regulated ~~P~~products sold in quantities of one fluid ounce or less;
  - (B) Adhesives used to glue flowers to parade floats;
  - (C) Adhesives used to fabricate orthotics and prosthetics under a medical doctor's prescription; or
  - (D) Shoe repair, luggage, and handbag adhesives.
- (4) -The provisions of subdivision ~~(e)(d)~~ shall not apply to:
  - (A) Research and development programs and quality assurance labs. Records shall be maintained in accordance with the provisions of subdivision ~~(d)(e)~~ of this rule; or
  - (B) Solvent welding operations used in the manufacturing of medical devices.
- (5) The provisions of paragraph ~~(e)(1)(d)(1)~~ shall not apply to the following:
  - (A) Adhesives used in tire repair;
  - (B) Adhesives and/or adhesive application processes in compliance with Rules 1104 – Wood Flat Stock Coating Operations, 1106 – Marine and Pleasure Craft Coating, 1128 – Paper, Fabric, and Film Coating Operations, 1130 – Graphic Arts, and 1130.1 – Screen Printing Operations;
  - (C) A ~~F~~facility that demonstrates that the total volume of noncompliant products is less than 55 gallons per facility per calendar year. -A ~~F~~facility may not use this paragraph to exclude noncompliant adhesives used in architectural applications; contact adhesives; special purpose contact adhesives; ~~and~~ adhesives used on porous substrates; ~~Effective January 1, 2019, a facility may not use this paragraph to exclude noncompliant~~ rubber vulcanization adhesives and top and trim adhesives; or



- (D) Regulated Pproducts used in the field installation and repair of potable water linings and covers at water treatment, storage, or water distribution facilities.
- (6) The provisions of paragraph ~~(e)(6)~~(d)(6) shall not apply to Rregulated Pproducts with a viscosity of 200 centipoise or greater.
- (7) The provisions of subdivision ~~(f)~~(g) shall not apply to thermoplastic hot melt adhesives or to Rregulated Pproducts offered for sale as a dry mix, containing no polymer, which are ready for use or only mixed with water prior to use, and include, but are not limited to, grouts, cements, and mortars.
- (8) The recordkeeping provisions ~~of subdivisions (e) and (d) in paragraph (e)(8)~~, shall not apply to an owner or operator of a Facility within the South Coast AQMD provided regulated products with a the VOC content of the Regulated Products are lower than the following~~no more than~~:
  - (A) Regulated Products subject to percent VOC by weight limits, 2 percent VOC by weight or half the applicable VOC limit, whichever is lower;
  - (B) Low-Solids Regulated Products, 20 grams per liter material or half the applicable VOC limit, whichever is lower; and
  - (C) All other Regulated Products, 20 grams per liter, or half the applicable VOC limit, less water and less exempt compounds, whichever is lower.~~or no more than 20 grams per liter material for low solids Rregulated Pproducts.~~
- ~~(9) —~~Until January 1, 2021, the provision of paragraph ~~(g)(1) and (g)(2)~~ shall not apply to solvent welding formulations containing methylene chloride used to bond hard acrylic, polycarbonate, and polyethylene terephthalate glycol plastic fabrications, provided:
  - ~~(A) —~~The concentration of methylene chloride in any solvent welding formulation does not exceed 60 percent by weight; and
  - ~~(B) —~~The purchase of all solvent welding products does not exceed 20 gallons per calendar year at a single facility, as demonstrated by purchase records and invoices of methylene chloride containing solvent welding formulations. Such records shall be made available to the Executive Officer upon request.
- (109) The provisions of this rule shall not apply to Rregulated Pproducts, which weigh one pound or less, or consist of 16 fluid ounces or less and have VOC

content limits in Section 94509(a) of the Consumer Products Regulation, unless they are:

- (A) Incorporated into or used exclusively in the manufacture or construction of the goods or commodities, and not exempted in paragraph ~~(i)(2)(j)(2)~~; or
- (B) Used in pollution-generating activities that take place at stationary sources, excluding maintenance and repair, and not exempted in paragraph ~~(i)(2)(j)(2)~~.

~~(1110) As of January 1, 2018, the provisions of subdivision paragraph (e)(1)(d)(1) and subdivision (g)(h) shall not apply to any manufacturer or supplier of Rregulated Pproducts provided the product was sold to an independent distributor that was informed in writing, including electronic formats, by the manufacturer or supplier, that the Rregulated Pproduct is not to be used in the South Coast Air Quality Management District AQMD. Manufacturers utilizing this provision shall maintain notification letters for three (3)-years, which shall be made available to the Executive Officer or designee upon request.~~

## ATTACHMENT H

### SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

#### Final Staff Report for

#### PROPOSED AMENDED RULE 1168 – ADHESIVE AND SEALANT APPLICATIONS

**Dated: October 2022**

##### **Deputy Executive Officer**

Planning, Rule Development, and Implementation  
Sarah L. Rees, Ph.D.

##### **Assistant Deputy Executive Officer**

Planning, Rule Development, and Implementation  
Michael Krause

##### **Planning and Rules Manager**

Planning, Rule Development, and Implementation  
Heather Farr

---

Author:	Mojtaba Moghani, Ph.D.	Air Quality Specialist
Reviewed by:	Yanrong Zhu Josephine Lee	Program Supervisor Senior Deputy District Counsel
Contributors	Michael Morris Barbara Radlein Sina Taghvaei, Ph.D. Brian Vlasich Brad Parrack Fortune Chen Emily Yen	Planning and Rule Manager Program Supervisor Air Quality Specialist Air Quality Specialist Principal Air Quality Chemist Senior Air Quality Engineer Assistant Air Quality Specialist

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
GOVERNING BOARD**

Chair: BEN BENOIT  
Mayor, Wildomar  
Cities of Riverside County

Vice Chair: VANESSA DELGADO  
Senator (Ret.)  
Senate Rules Committee Appointee

**MEMBERS:**

MICHAEL A. CACCIOTTI  
Mayor, South Pasadena  
Cities of Los Angeles County/Eastern Region

ANDREW DO  
Supervisor, First District  
County of Orange

GIDEON KRACOV  
Governor's Appointee

SHEILA KUEHL  
Supervisor, Third District  
County of Los Angeles

LARRY MCCALLON  
Mayor, Highland  
Cities of San Bernardino County

VERONICA PADILLA-CAMPOS  
Speaker of the Assembly Appointee

V. MANUEL PEREZ  
Supervisor, Fourth District  
Cities of Riverside

NITHYA RAMAN  
Council Member, Fourth District  
City of Los Angeles Representative

REX RICHARDSON  
Vice Mayor, City of Long Beach  
Cities of Los Angeles County/Western Region

CARLOS RODRIGUEZ  
Mayor, Yorba Linda  
Cities of Orange County

JANICE RUTHERFORD  
Supervisor, Second District  
County of San Bernardino

EXECUTIVE OFFICER:  
WAYNE NASTRI

## TABLE OF CONTENTS

EXECUTIVE SUMMARY	Exe-1
CHAPTER 1 BACKGROUND .....	1-0
INTRODUCTION .....	1-1
REGULATORY HISTORY .....	1-1
AFFECTED INDUSTRIES .....	1-3
PUBLIC PROCESS .....	1-4
CHAPTER 2 : TECHNOLOGY ASSESSMENT .....	2-0
DISCUSSION ON EXEMPT COMPOUNDS .....	2-1
DISCUSSION ON THE TECHNOLOGY ASSESSMENTS .....	2-9
OTHER PROPOSED CHANGES TO RULE .....	2-29
CHAPTER 3 : PROPOSED AMENDED RULE LANGUAGE .....	3-0
PROPOSED AMENDED RULE 1168.....	3-1
CHAPTER 4 : IMPACT ASSESSMENT.....	4-0
EMISSION INVENTORY .....	4-1
CONTROL TECHNOLOGY .....	4-2
EMISSION REDUCTIONS .....	4-3
COST ASSESSMENT .....	4-4
SOCIOECONOMIC ASSESSMENT.....	4-5
CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) .....	4-10
DRAFT FINDINGS UNDER THE HEALTH AND SAFETY CODE.....	4-10
COMPARATIVE ANALYSIS .....	4-12
APPENDIX A: RESPONSE TO COMMENTS.....	0
PUBLIC WORKSHOP COMMENTS .....	1
COMMENT LETTERS .....	4

## LIST OF TABLES

Table 1-1: Summary of Working Group Meetings and Public Workshop .....	1-4
Table 1-2: Meetings with Stakeholders .....	1-6
Table 2-1: pCBtF February 2022 Survey Questions.....	2-1
Table 2-2: Risks associated with Using t-BAC in Automotive and Industrial Maintenance (IM) coatings .....	2-3
Table 2-3: 2014 t-BAC assessment for roofing projects .....	2-3
Table 2-4: OEHHA t-BAC and pCBtF Cancer Potency Factors.....	2-4

Table 2-5: AERMOD Model Inputs and Results for Roofing Projects Using Different Scenarios .....	2-6
Table 2-6: Cancer Potency Factor for Group II Compounds.....	2-7
Table 2-7: Acute REL for Group II Compounds .....	2-7
Table 2-8: REL Values by OEHHA 2014 Interim Evaluation .....	2-8
Table 2-9: Reporting Deadlines for QERs.....	2-9
Table 2-10: Top and Trim Adhesives Data.....	2-11
Table 2-11: Foam Sealant Proposed Limits and Effective Dates .....	2-13
Table 2-12: Foam Sealant Data as Reported – without Subcategories .....	2-13
Table 2-13: One-Component Foam Sealants Data .....	2-14
Table 2-14: Two-Component Foam Sealants Data.....	2-15
Table 2-15: PVC Plastic Cement Data.....	2-17
Table 2-16: CPVC Plastic Cement Data .....	2-18
Table 2-17: ABS to PVC Plastic Cement Data.....	2-20
Table 2-18: Meetings with Roofing Industry Stakeholders and Representatives.....	2-21
Table 2-19: All Other Roof Adhesives Data (Before Subcategorization) .....	2-22
Table 2-20: All Other Roof Adhesives (After Subcategorization) .....	2-24
Table 2-21: Single Ply Roof Membrane Adhesives Data .....	2-25
Table 2-22: All Other Roof Sealants Data.....	2-27
Table 2-23: Single Ply Roof Membrane Sealants Data .....	2-28
Table 3-1: Summary of Table 1 Revisions .....	3-3
Table 3-2: QER Reporting Schedule .....	3-5
Table 3-3: Prohibition Effective Dates .....	3-6
Table 4-1: 2018 Emissions.....	4-1
Table 4-2: Products in Technology Assessment and Products with Proposed VOC Limit Revisions .....	4-2
Table 4-3: Proposed VOC Limits, Delayed and Foregone Emissions, and Emission Reductions .....	4-3
Table 4-4: Categories and number of products that contain pCBtF .....	4-5
Table 4-5: Potentially Affected Intermediate Users by Industry .....	4-6
Table 4-6: Summary of Socioeconomic Impacts of CEQA Alternatives .....	4-10
Table 4-7: Comparative analysis .....	4-12

## LIST OF FIGURES

Figure 1-1: Comparison of South Coast AQMD Rule 1168 Applicability to CARB CPR.....	1-2
Figure 2-1: Meteorological Stations used in AERMOD in the South Coast AQMD.....	2-5
Figure 2-2: Top and Trim Adhesives 2017/2018 QER Sales Data.....	2-11
Figure 2-3: Foam Sealant 2017/2018 QER Sales Data as Reported – without Subcategories ..	2-14
Figure 2-4: One-Component Foam Sealants 2017/2018 QER Sales Data .....	2-15
Figure 2-5: Two-Component Foam Sealants 2017/2018 QER Sales Data.....	2-16
Figure 2-6: PVC Plastic Cement 2017/2018 QER Sales Data.....	2-17
Figure 2-7: CPVC Plastic Cement 2017/2018 QER Sales Data .....	2-19
Figure 2-8: ABS to PVC Plastic Cement 2017/2018 QER Sales Data.....	2-20
Figure 2-9: All Other Roof Adhesives 2017/2018 QER Sales Data (Before Subcategorization) .	2-23

Figure 2-10: All Other Roof Adhesives 2017/2018 QER Sales Data (After Subcategorization).. 2-24

Figure 2-11: Single Ply Roof Membrane Sealants 2017/2018 QER Sales Data ..... 2-26

Figure 2-12: All Other Roof Sealants 2017/2018 QER Sales Data ..... 2-27

Figure 2-13: Single Ply Roof Membrane Sealants 2017/2018 QER Sales Data ..... 2-29

## EXECUTIVE SUMMARY

Rule 1168 was adopted in April 1989 to control volatile organic compound (VOC) emissions from adhesive and sealant applications. The rule has been amended 14 times; the last rule amendment was in October 2017. Rule 1168 includes 59 categories of adhesives, adhesive primers, sealants, and sealant primers with VOC limits and applies to products used during manufacturing at stationary sources as well as products used by consumers that are not regulated by the California Air Resources Board (CARB) in the Consumer Products Regulation (CPR)<sup>1</sup>.

The proposed amendments to Rule 1168 began as a result of the technology assessment that was included in the 2017 amendment for nine adhesive and sealant categories with lower VOC limits that will go into effect on January 1, 2023. The technology assessment serves as a check-in to determine if the technology progressed and the future effective limits will be achieved.

An additional driver for this rule amendment is the proposed change in status of two exempt compounds: tertiary-Butyl Acetate (t-BAC), which is exempt from the definition of a VOC for certain categories of products in a few source specific rules not including Rule 1168, and paraChlorobenzotrifluoride (pCBtF), which is considered exempt from the definition of a VOC for all uses within the South Coast Air Quality Management District (South Coast AQMD), including Rule 1168 products. The proposed change to the exempt status was based on the Stationary Source Committee directive to prioritize lowering toxicity over lowering VOC emissions when considering exempting compounds from the definition of a VOC when staff presented the “t-BAC Assessment White Paper” in April 2017.

The technical assessment identified some categories that either needed more time or were not technically feasible to meet the proposed VOC limits by the 2023 effective date. Staff initiated the rule amendment. Due to the t-BAC and pCBtF toxicity concerns and the Stationary Source Committee’s direction, staff performed an analysis to reassess the toxicity of t-BAC and pCBtF, including a risk assessment for off-site receptors in roofing applications and a comparison of the toxic endpoints of t-BAC and pCBtF with other compounds that are currently prohibited from use in Rule 1168 products. After careful consideration, staff is proposing to prohibit the use of t-BAC and pCBtF in Rule 1168 products and to adjust VOC limits and allow time for reformulation where needed. Staff also proposes to include a conditional, limited VOC exemption for Opteon 1100 based on an assessment by the Office of Environmental Health Hazard Assessment (OEHHA). The exemption is limited to two-component foam sealants applied in an industrial or professional setting and would not be effective unless the specified conditions are met for the assessment. This rule amendment will result in foregone emission reductions; however, it will result in lowering the potential for toxic chemicals to be used in the regulated products.

The estimated rule inventory is approximately 6.2 tons per day (tpd) of VOC. The projected foregone emission reductions from the proposed amendments are 0.28 tpd of VOC emissions. While this is a significant loss in VOC emission reductions, the 2017 amendment was adopted in part to implement Control Measure CTS-01 - Further Emission Reductions from Coatings, Solvents, Adhesives, and Sealants from the 2016 Air Quality Management Plan (AQMP), which targeted 1 (one) tpd of VOC emission reductions by 2023. The 2017 Rule 1168 amendment

---

<sup>1</sup> The California Consumer Products Regulations; [https://ww2.arb.ca.gov/sites/default/files/2020-08/v3\\_ADA\\_Regs-all\\_8-31-2020.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-08/v3_ADA_Regs-all_8-31-2020.pdf)



estimated VOC reductions of 1.38 tpd, so even with the 0.28 tpd foregone emission reductions, the rule amendment exceeded the commitment in the 2016 AQMP.

## CHAPTER 1 BACKGROUND

---

INTRODUCTION

REGULATORY HISTORY

AFFECTED INDUSTRIES

PUBLIC PROCESS

KEY CONCERNS

## INTRODUCTION

Rule 1168 was adopted in April 1989 to control VOC emissions from adhesive applications. The rule has been amended 14 times; the last amendment was in October 2017. The rule applies to products that were used during manufacturing at stationary sources and to products used by consumers that were not regulated by the CARB CPR. Currently there are VOC limits established for 59 categories of adhesives, adhesive primers, sealants, and sealant primers.

Rule 1168 requires a technology assessment to be performed in 2020 and 2022 for nine categories subject to Rule 1168 including Foam Sealants, Plastic Welding Cements, Roofing Products, and Top and Trim categories. In April 2017, the Stationary Source Committee recommended a precautionary approach when considering an exemption for any compound with a toxic endpoint and removing the exempt status for any compound that has an established toxic endpoint. Therefore, the current rule development has two primary goals: 1) assessing the feasibility of proposed emission reductions through technology assessments and stakeholder engagement; and 2) evaluating the toxicity of exempt solvents with a focus on t-BAC and pCBtF.

## REGULATORY HISTORY

The current rule amendment process began in 2022. Since then, staff has conducted four working group meetings, surveyed the use of exempt solvents in the regulated products and conducted individual meetings with stakeholders and their representatives. As part of the 2017 rule amendment, the South Coast AQMD required manufacturers and private labelers of regulated products to submit Quantity and Emission Reports (QERs) to the South Coast AQMD according to a reporting schedule: every three years until 2025, then every five years, with a sunset date in 2040. The manufacturer and private labelers submitted the first QERs for the 2017 and 2018 period on September 1, 2019. Since all manufacturers that sell products in the South Coast AQMD are required to report their products in QERs, they provide comprehensive data, and during this rule amendment, staff relied on the information provided in QERs to perform technology assessments. Prior to the QER requirements and during the 2017 rule amendment, staff were relying on a voluntary survey of product sales in the South Coast AQMD which was sent out during the 2013/2014 rule amendment. During the 2017 amendment staff applied a growth factor to estimate increased usage (population growth was used as a surrogate for increased usage) from 2013/2014 to 2017, and based on that, staff estimated that the inventory for adhesives and sealants is 10.5 tpd. However, based on QER information that was provided by manufacturers and private labelers in September 2019, staff estimates that the current baseline emissions for Rule 1168 is 6.2 tpd.

During the previous amendment, which was initiated in 2013, staff considered exempting both t-BAC and dimethyl carbonate (DMC) from the definition of a VOC. This proposal would have achieved substantial VOC emission reductions. However, the rule amendment was put on hold in 2014 due to toxicity concerns of t-BAC and DMC, and uncertainty of the on-site exposure modeling methodologies. Staff held a Toxics Symposium in October 2014 and developed the draft “t-BAC Assessment White Paper,” which was released in April 2017. As a result of that work, the Stationary Source Committee recommended a precautionary approach such that compounds with a known or suspected toxic endpoint will not be exempted from the definition of the VOC. In addition, the Stationary Source Committee further directed staff to request the Office of Environmental Health Hazard Assessment (OEHHA) to perform an assessment of pCBtF, a compound that is exempted for all uses in Rule 102 – Definition of Terms as a Group I Exempt

Solvent. In May 2017, staff resumed the proposed amendment to Rule 1168, without the proposed exemptions for t-BAC and DMC. In 2020, OEHHA finalized the assessment of pCBtF, and determined it to be a stronger carcinogen than t-BAC.

### ***CARB Consumer Products Regulation and South Coast AQMD Rule 1168***

There is sometimes confusion regarding which products and uses are regulated by the CARB CPR and which products and uses are regulated by South Coast AQMD Rule 1168. During the 2017 amendment, staff developed the infographic below to provide clarification.

Rule 1168 exclusively applies to:

- Any adhesive or sealant incorporated into or used to manufacture or construct goods or commodities, regardless of size; and
- All applicable products sold in containers greater than 16 fluid ounces.

The CARB CPR exclusively applies to:

- Aerosol adhesives.

Products sold in container sizes less than or equal to 16 fluid ounces:

- If there is a category and VOC limit for the product in the CARB CPR that existed before a Rule 1168 VOC limit, they are regulated by the CARB CPR;
- If no category or VOC existed before a Rule 1168 VOC limit went into effect, they are regulated by Rule 1168. Figure 1-1 below demonstrates the applicability of the CARB CPR and South Coast AQMD Rule 1168:

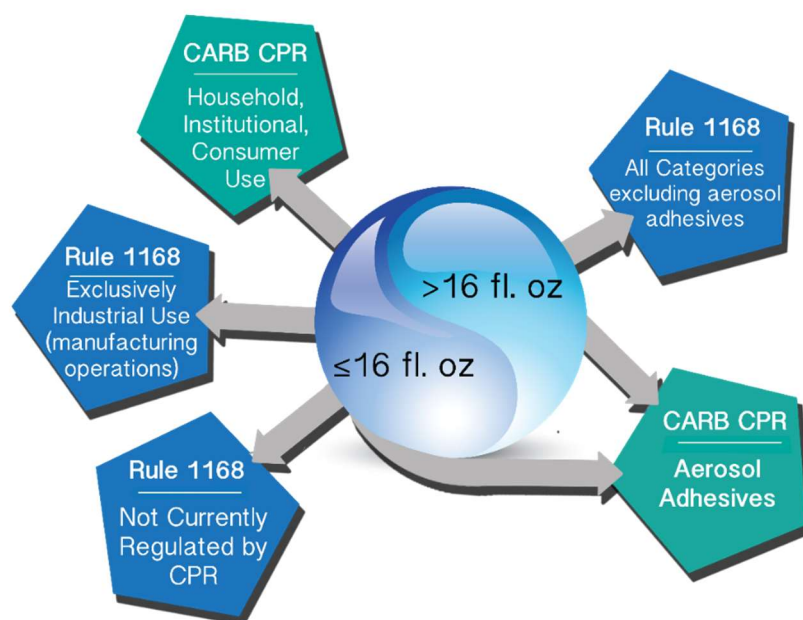


Figure 1-1: Comparison of South Coast AQMD Rule 1168 Applicability to CARB CPR

**AFFECTED INDUSTRIES**

Adhesive and sealant use subject to the rule spans a wide range of industries that have miscellaneous uses during manufacturing. The industry sectors that make extensive use of products subject to this rule include<sup>2</sup>:

- Adhesive Manufacturing (NAICS 325520)
- Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing (NAICS 333415)
- All Other Rubber Product Manufacturing (NAICS 326299)
- Asphalt Shingle and Coating Materials Manufacturing (NAICS 324122 and 325520)
- Commercial and Institutional Building Construction (NAICS 236220)
- Custom Architectural Woodwork and Millwork Manufacturing (NAICS 337212)
- Drywall and Insulation Contractors (NAICS 238310)
- Flooring Contractors (NAICS 238330)
- Footwear Manufacturing (NAICS 316210)
- Glass and Glazing Contractors (NAICS 238150)
- Hardwood Veneer and Plywood Manufacturing (NAICS 321211)
- Household Furniture (except Wood and Metal) Manufacturing (NAICS 337125)
- Industrial Building Construction (NAICS 236210)
- Manufactured Home (Mobile Home) Manufacturing (NAICS 321991)
- Motor Vehicle Seating and Interior Trim Manufacturing (NAICS 336360)
- New Multifamily Housing Construction (except For-Sale Builders) (NAICS 236116)
- New Single-Family Housing Construction (except For-Sale Builders) (NAICS 236115)
- Office Furniture (except Wood) Manufacturing (NAICS 337214)
- Oil and Gas Pipeline and Related Structures Construction (NAICS 237120)
- Other Millwork (including Flooring) (NAICS 321918)
- Plumbing, Heating, and Air-Conditioning Contractors (NAICS 238220)
- Polystyrene Foam Product Manufacturing (NAICS 326140)
- Residential Remodelers (NAICS 236118)
- Roofing Contractors (NAICS 238160)
- Rubber Product Manufacturing for Mechanical Use (NAICS 326291)

---

<sup>2</sup> NAICS Association from <http://www.naics.com/index.html>

- Showcase, Partition, Shelving, and Locker Manufacturing (NAICS 337215)
- Siding Contractors (NAICS 238170)
- Surgical Appliance and Supplies Manufacturing (NAICS 339113)
- Tile and Terrazzo Contractors (NAICS 238340)
- Tire Retreading (NAICS 326212)
- Urethane and Other Foam Product (except Polystyrene) Manufacturing (NAICS 326150)
- Water and Sewer Line and Related Structures Construction (NAICS 237110)
- Wood Container and Pallet Manufacturing (NAICS 321920)
- Wood Kitchen Cabinet and Countertop Manufacturing (NAICS 337110)
- Wood Window and Door Manufacturing (NAICS 321911)
- Paint and Wallpaper Stores (NAICS 444120)

## PUBLIC PROCESS

PAR 1168 was developed through a public process that included a series of Working Group Meetings as shown in Table 1-1 below, which also summarizes the key topics discussed at each of the Working Group Meetings. Working Group Meetings ranged from one to three hours and included detailed presentations, which are posted on the South Coast AQMD's website<sup>3</sup>.

Table 1-1: Summary of Working Group Meetings and Public Workshop

Meeting title	Date	Highlights
Working Group Meeting #1	February 11, 2022	<ul style="list-style-type: none"> <li>• Rule Background</li> <li>• Preliminary Technology Assessment</li> <li>• Concluded a rule amendment is required</li> </ul>
Working Group Meeting #2	April 12, 2022	<ul style="list-style-type: none"> <li>• Continued technology assessments</li> <li>• Presented survey results for exempt solvent</li> <li>• Risk assessment for use of t-BAC and pCBtF in roofing projects</li> </ul>
Working Group Meeting #3	July 21, 2022	<ul style="list-style-type: none"> <li>• Presented the preliminary conclusions on technology assessment</li> <li>• Proposed to prohibit use of t-BAC and pCBtF due to toxicity concerns</li> </ul>

<sup>3</sup> <http://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1168>

Meeting title	Date	Highlights
		<ul style="list-style-type: none"> <li>Proposed not to exempt Opteon 1100 as a VOC due to unknown toxicity</li> </ul>
Working Group Meeting #4	August 11, 2022	<ul style="list-style-type: none"> <li>Revised the proposed VOC limits for roofing categories after pCBtF prohibition</li> <li>Weight percent metric for Foam Sealants</li> <li>Proposed amended rule language</li> </ul>
Public Workshop	September 1, 2022	<ul style="list-style-type: none"> <li>Proposed amended rule including updated VOC limits and effective dates</li> <li>Discussed Rubber Vulcanization Adhesive industry request</li> <li>Proposed considering limited exemption for Opteon 1100 contingent on OEHHHA assessment</li> </ul>
Public Consultation	September 27, 2022	<ul style="list-style-type: none"> <li>Revisions to certain VOC limits and effective dates</li> <li>Delayed pCBtF prohibition for certain categories</li> <li>Conditional exemption for Opteon 1100</li> <li>Weight-based VOC limits to all categories for products sold packaged and applied using a propellant (based on industry feedback, reverted back to previously proposed weight percent metric only for Foam Sealants and Insulation)</li> <li>Reporting requirements for t-BAC and pCBtF used in Regulated Products</li> </ul>

Staff also met with industry stakeholders and their representatives throughout the rule development process. Table 1-2 below summarizes stakeholder meeting during the rulemaking:

Table 11-22: Meetings with Stakeholders

Date	Stakeholder
November 12, 2021	Plastic Pipe and Fittings Association (PPFA)
November 18, 2021	Oatey
December 2, 2021	The Adhesive and Sealant Council (ASC)
December 7, 2021	Lubrizol
January 28, 2022	Weldon
February 4, 2022	Weldon
February 22, 2022	Soprema
February 25, 2022	Roof Coatings Manufacturers Association (RCMA)
March 3, 2022	Owens Corning
March 8, 2022	Asphalt Roofing Manufacturers Association (ARMA)
March 23, 2022	Sashco
March 24, 2022	DAP
April 6, 2022	Adhesive and Sealant Council (ASC)
May 6, 2022	ICP
May 11, 2022	Asphalt Roofing Manufacturers Association (ARMA)
May 19, 2022	Representatives of pipe cement manufacturers
May 20, 2022	Weldon
June 28, 2022	Oatey
July 7, 2022	Weldon
July 19, 2022	Single Ply Roofing Industry (SPRI)
July 27, 2022	Roof Coatings Manufacturers Association (RCMA)
July 29, 2022	Foam Industry Stakeholders
August 17, 2022	ITW
August 18, 2022	Foam Industry Manufacturers
August 19, 2022	ICP
August 23, 2022	SPRI
August 25, 2022	R.D. Abbot



Date	Stakeholder
September 8, 2022	Sashco
September 15, 2022	GAF
September 20, 2022	SPRI

## CHAPTER 2 : TECHNOLOGY ASSESSMENT

---

DISCUSSION ON EXEMPT COMPOUNDS

BACKGROUND ON TECHNOLOGY ASSESSMENT

TECHNOLOGY ASSESSMENTS FOR NINE CATEGORIES OF ADHESIVES  
AND SEALANTS

## DISCUSSION ON EXEMPT COMPOUNDS

### *Background on t-BAC and pCBtF*

In 1994, the U.S. EPA exempted pCBtF from the definition of a VOC, and in 2004, South Coast AQMD added pCBtF as an exempt VOC compound in Rule 102. A Rule 102 VOC exemption means pCBtF is not considered a VOC for any application in the South Coast AQMD.

In 2004, the U.S. EPA exempted t-BAC from the definition of a VOC, but due to toxicity concerns, the South Coast AQMD did not allow for an unlimited Rule 102 exemption but did allow for several limited exemptions in source specific rules, e.g., Rules 1113 and 1151. In 2013, the Rule 1113 amendment included a resolution that directed staff to review the exemption for t-BAC due to renewed toxicity concerns. OEHHA finalized their t-BAC assessment in 2017, concluding that it had a higher cancer potency than previously estimated. In 2018, staff presented the preliminary t-BAC assessment and expressed concerns regarding pCBtF because OEHHA had not assessed its toxicity. Based on staff recommendations, the Stationary Source Committee directed staff to: remove existing t-BAC exemption in Rules 1113 and 1151 when rules are amended and request OEHHA to review the potential toxicity of pCBtF and remove the exemption, as resources allow, if pCBtF is deemed a potential carcinogen. In 2020, the pCBtF Hot Spots cancer inhalation unit risk factor document was adopted by OEHHA, which indicated pCBtF is a potential carcinogen.

### *pCBtF Survey*

Staff conducted a survey in February 2022 for adhesive and sealant manufacturers who reported sales into or within the South Coast AQMD. The intent of the survey was to assist the understanding of the extent to which exempt solvents are used to formulate compliant products. The two exempt compounds of interest for this survey were pCBtF, also known as Oxsol 100, and t-BAC. The main focus of this survey was pCBtF, which is considered a VOC exempt solvent for adhesives and sealants. The table below shows the survey questions.

Table 2-1: pCBtF February 2022 Survey Questions

Requested Information	
1.	Company name, contact person, and an email address
2.	Do you sell adhesives or sealants into or within the South Coast AQMD?
3.	Do any of the adhesives or sealants sold into or within the South Coast AQMD contain para-chlorobenzotrifluoride (pCBtF), also known as Oxsol 100?
4.	Information regarding general adhesives or sealants categories include pCBtF
5.	Describing the product if the category is any other adhesive or sealant in above question, or if the product category was not listed in the survey

Requested Information	
6.	The approximate weight percent of pCBtF in formulations
7.	Alternative products that do not contain pCBtF that could replace the pCBtF adhesives or sealants
8.	If the alternate products comply with the Rule 1168 VOC limits
9.	Do any of the adhesives or sealants sold into or within the South Coast AQMD contain tertiary-Butyl Acetate (t-BAc)?

In total, 25 manufacturers responded to the survey. Most reported that the pCBtF range for these categories was between 4% to 25%. Eleven manufacturers reported use of pCBtF and five manufacturers reported that they have alternatives for pCBtF. Categories reported using pCBtF in the survey were: Architectural Adhesive and Sealants, Roofing Adhesive and Sealants, Adhesive and Sealant Primers, Any Other Adhesive, Any Other Sealant, Flooring Adhesive. On April 28, 2022, staff followed up with manufacturers that submitted the pCBtF survey to gather more information on the percent usage of pCBtF in their products. Some manufacturers responded to staff's request. Only a small subset of Rule 1168 products indicated that they use pCBtF, and the range of pCBtF reported for all reported categories was between 4.5 percent to 90 percent. The product categories that were reported in the follow up survey were: All Other Roof Sealants, All Other Sealants, Single Ply Roof Membrane Sealants, and All Other Adhesive Primers. The majority of the feedback staff received was from roofing products manufacturers. The range of pCBtF reported for roofing products was between 40% to 90%.

### ***t-BAc and pCBtF in Roofing Products***

During staff meetings with roofing industry stakeholders, roofing manufacturers indicated that they rely on pCBtF to meet the proposed VOC limits that will go into effect on January 1, 2023, and requested staff to consider allowing the continued use for pCBtF for roofing applications since roofing applications occur outside, which reduces potential exposure. Staff relied on the previous t-BAc assessments to evaluate risks: 1) 2017 t-BAc White Paper focused on existing limited exemption for automotive and industrial maintenance coatings and 2) Risk assessment of potential t-BAc use in roofing adhesives that was conducted during the prior rule development when stakeholders were seeking an exemption for t-BAc.

Due to toxicity concerns, staff reviewed the limited VOC exemption for t-BAc when used in certain automotive coatings and industrial maintenance (IM) coatings in the 2017 t-BAc white paper.

Table 2-2: Risks associated with Using t-BAc in Automotive and Industrial Maintenance (IM) coatings

	Automotive Coatings	IM Coatings
Cancer Potency Factor (mg/kg-day) <sup>-1</sup>	$6.7 * 10^{-3}$	$6.7 * 10^{-3}$
Risk Factor (in one million)	17 <sup>(1)</sup>	3.8 <sup>(1)</sup>
Acute Hazard Index (HI) (non-cancer)	$5.11 * 10^{-3}$	0.4

Staff presented the results to the Stationary Source Committee in April 2017, which recommended removing the VOC exemption for t-BAc and requesting OEHHA to assess the potential toxicity of pCBtF.

During the 2017 rule amendment, staff assessed the health risks associated with potential t-BAc usage in roofing products using the following assumptions:

- Offsite receptors only exposed to acute effects; adhesives are not continually applied to the same roof, so chronic exposure not evaluated
- Concentrations estimated by air dispersion modeling
- Usage estimated at 500 gal/day for 10,000 ft<sup>2</sup> area elevated at 35 feet
- Receptor located at a 25-meter distance

Based on the assessment in 2017, staff decided not to exempt t-BAc in Rule 1168.

Table 2-3: 2014 t-BAc assessment for roofing projects

	Toxic Air Contaminant	Acute Hazard Index
Baseline	0.5% Ethylbenzene, 10% Toluene and Hexane, 5% Methyl Ethyl Ketone (MEK)	0.9
Future	50% t-BAc	17

OEHHA implements Proposition 65 and compiles the list of substances that cause cancer or reproductive harm, and OEHHA also provides risk assessments reports. The OEHHA 2015 and 2018 t-BAc and 2020 pCBtF reports include Inhalation Slope Factor (ISF) which is the same factor previously called Cancer Potency Factor (CPF).

Table 2-4: OEHHA t-BAC and pCBtF Cancer Potency Factors

Report	ISF (CPF) (mg/kg-day) <sup>-1</sup>
Draft OEHHA t-BAC (2015)	$6.7 * 10^{-3}$
Final OEHHA t-BAC (2018)	$5.0 * 10^{-3}$
Final OEHHA pCBtF (2020)	$3.0 * 10^{-2}$

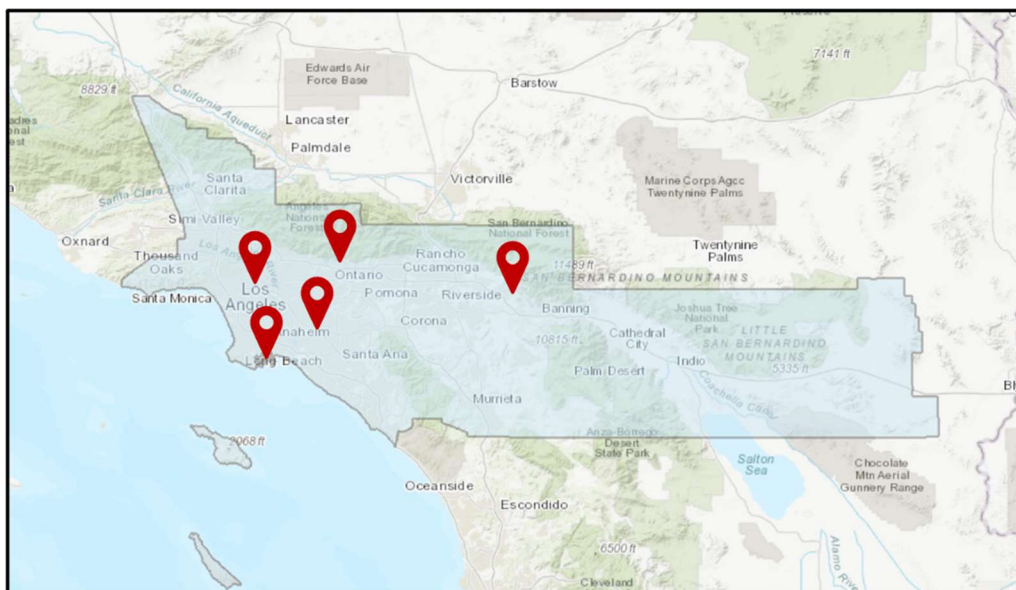
During the current amendment, the Roof Coatings Manufacturers Association (RCMA) asked staff to consider limited exemption for roofing adhesives. During the 2017 rule amendment, t-BAC toxicity was assessed for a roofing project and Acute HI was calculated to be 17. Rule 1401 – New Source Review of Toxic Air Contaminants limits Acute HI of new projects to less than 1.0. Cancer Potency Factor for pCBtF is considerably higher than for t-BAC; however, there was not sufficient data available for OEHHA to evaluate the acute risks of pCBtF. Due to the lack of data on the acute risk of pCBtF, staff relied on the 2013 assessment of using t-BAC in a roofing project.

In 2013, South Coast AQMD performed a modeling study to assess the Acute Hazard Index (HI) of t-BAC used in a roofing project. Modeling assumptions were provided by industry stakeholders:

- Daily usage of 500 gallons per day
- Total area covered each day 10,000 sq ft
- 50% t-BAC content
- Receptor was located at a 25 m distance
- Acute Reference Exposure Level (REL) for t-BAC was assumed to be 10,000 ug/m<sup>3</sup>
- Release height was assumed to be 35 ft
- Acute HI was calculated to be 17, which is > 1.0

Based on the modeling results, staff concluded to move forward without including a t-BAC or pCBtF exemption for a roofing application. However, during Working Group Meeting #2, stakeholders raised concerns about the usage assumptions made for the previous t-BAC toxicity modeling assessment and provided updated daily usage estimates for a typical roofing project. Staff updated the source release height from 35 ft to 20 ft to reflect a two-story building. Staff considered three levels of solvent content to represent the wide variety of available products in the market. Staff evaluated the acute risks associated with roofing projects; since roofing projects are conducted infrequently, risks to nearby receptors are an acute risk, not a chronic risk.

Staff performed updated modeling for five meteorological stations at different locations in the South Coast AQMD (highlighted in light blue) as shown in Figure 2-1 below:



**Figure 2-1: Meteorological Stations used in AERMOD in the South Coast AQMD**

Based on solvent daily usage and project coverage area provided by stakeholders, staff will provide two scenarios to assess the associated risks: Scenario #1: Provided by Firestone Building Products and Scenario #2: Provided by SPRI in a comment letter received on July 5, 2022.

Risk assessments generally focus on the worse-case scenario, but staff considered a range of scenarios. Staff's assessment includes two different scenarios for five locations and three t-BAC weight percent, and in total 30 different cases were assessed. Table 2-5 below shows a summary of the modeling assessment.

Table 2-5: AERMOD Model Inputs and Results for Roofing Projects Using Different Scenarios

		SCENARIO #1	SCENARIO #2
MODEL INPUTS	Daily Usage (gal)	140	85
	Coverage Rate (sq ft / gal)	50	60
	Total Covered Area (sq ft)	7,000	5,100
	Source Release Height (ft)	20	20
	Receptor Distance (m)	25	25
	t-BAc content	25%, 50%, and 75%	25%, 50%, and 75%
	# of Roofing Project Locations	5	5
MODEL RESULTS	Acute HI for range for all locations	3.0 – 14.6	1.4 – 7.6

Rule 1401 – New Source Review of Toxic Air Contaminants limits Acute HI of new projects to less than 1.0. In all scenarios, the Acute HI exceeds 1.0 with a maximum of 14.6. Updated assumptions (e.g., 5100 sq ft total coverage area) provided by stakeholders likely underestimates a commercial or industrial roofing project. Even with updated assumptions, risk assessment demonstrates an unacceptably high risk to offsite receptors (e.g., a nearby residence). OEHHA has not established an acute end point for pCBtF at this time; however, the Governing Board directed staff to rely on the precautionary principle, which is to prioritize reducing toxic risk over VOC reductions. When the risk is unknown, staff uses a precautionary approach, and with no acute end points, the precautionary approach is to not allow the exemption. Staff could reconsider assessment when more data on the acute risks of pCBtF becomes available.

#### *Comparing t-BAc and pCBtF toxicity to Group II Compounds*

South Coast AQMD Rule 102 – Definitions lists the exempt compounds. Group II compounds are those that are already restricted or will be restricted in the future because they are either toxic, potentially toxic, upper atmosphere ozone depleters, or cause other environmental impacts. Four Group II compounds have a defined Cancer Potency Factor or Reference Exposure Level (REL).



Table 2-6: Cancer Potency Factor for Group II Compounds

Compound	Cancer Potency Factor (Slope Factor)
perchloroethylene (perc)	0.021
DMC	0.0035
t-BAc	0.0047
pCBtF	0.03

For the four compounds shown in Table 2-6, pCBtF has the highest Cancer Potency Factor of all Group II exempt compounds (almost 50 percent higher than perc).

Table 2-7 shows the Acute Reference Exposure Level (REL) for Group II compounds. Acute HI has an inverse correlation with REL. t-BAc has the lowest REL, meaning the highest risk among Group II compounds. Cancer Potency Factor for pCBtF is much higher than t-BAc, perc, and DMC, but there is no established Acute REL.

Table 2-7: Acute REL for Group II Compounds

Compound	Acute REL
perc	20,000
DMC	14,000
t-BAc	10,000
pCBtF	N/A

### ***Staff Recommendations on t-BAc and pCBtF***

This comparison of other toxic compounds that are prohibited from use in Rule 1168 supports going beyond the Stationary Source Committee's recommendation to remove the VOC exempt status of t-BAc and pCBtF. OEHHA's assessment of t-BAc and pCBtF shows compounds to be as toxic as many chemicals currently prohibited; therefore, staff recommends prohibiting the use of t-BAc and pCBtF.

### ***Discussion on Opteon 1100***

In 2017, Chemours reached out the South Coast AQMD regarding a possible VOC exemption for Opteon 1100 (HFO-1336mzz-Z, CAS number 692-49-9). South Coast AQMD does not exempt a compound unless it is exempted by the U.S. EPA. In November 2018, the U.S. EPA revised the regulatory definition of VOC to exempt Opteon 1100 due to negligible contribution to the formation of tropospheric ozone. Opteon 1100 is listed as an acceptable substitute by the U.S. EPA under the Significant New Alternatives Policy (SNAP) program for Foam Blowing Agents, Refrigeration and Air Conditioning, Cleaning Solvents, and Aerosol Solvent. In 2020, South Coast AQMD reviewed available toxicology data for Opteon 1100 and based on staff's review of the

data provided, did not find anything of concern; however, the South Coast AQMD does not have the toxicological expertise of the staff at OEHHA to conduct such an assessment.

As a result of the “t-BAC Assessment White Paper” published in 2017, the South Coast AQMD Governing Board adopted a precautionary approach to VOC exempt compounds. The Stationary Source Committee recommended OEHHA evaluate any chemical prior to the South Coast AQMD exempting it to ensure regulatory VOC reductions do not encourage the use of chemicals that have a known or suspected toxic profile. A toxic profile is an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health. A compound has a known toxic profile if, for example, it has an established Cancer Potency Factor (CPF) or Reference Exposure Level (REL). Opteon 1100 is an HFO and South Coast AQMD has exempted several HFOs in the past. There is a concern that HFOs can break down into Per- and Polyfluoroalkyl substances (PFAS) through atmospheric degradation. PFAS are organic substances that are persistent in the environment and can have serious health impacts on humans. OEHHA has not evaluated Opteon 1100, but the Stationary Source Committee directed staff to adopt a precautionary approach to exempt VOC compounds.

At this time, staff does not recommend including Opteon 1100 as a VOC exempt compound upon rule adoption; but staff proposes the exemption become effective if OEHHA has sufficient information to establish a Cancer Inhalation Unit Risk Factor, an acute reference exposure level (REL) and a chronic REL of Opteon 1100 and does not adopt a cancer risk factor for Opteon 1100, and develops an acute REL (or interim acute REL) and a chronic REL (or interim chronic REL) for Opteon 1100 which are higher than those for trans-1-Chloro-3,3,3-Trifluoropropene (HFO-1233zd), which is the HFO it would replace. In March 2014, OEHHA completed its evaluation on the toxicity of HFO-1233zd and issued an Interim Evaluation of the Toxicity of trans-1-Chloro-3,3,3-Trifluoropropene. As a result of the evaluation, OEHHA developed an interim acute REL and a chronic REL as in the Table below. Those values will be referenced for determining Opteon 1100 exemption.

Table 2-8: REL Values by OEHHA 2014 Interim Evaluation

Compound	Interim Acute REL ( $\mu\text{g}/\text{m}^3$ )	Interim Chronic REL ( $\mu\text{g}/\text{m}^3$ )
<b>HFO-1233zd</b>	270,000 (51 ppm)	2100 (0.4 ppm)

The exemption will also be limited to two-component foam sealants used in a professional setting by workers trained with procedures and guidelines to reduce potential risk of exposure. Staff is concerned with including any VOC exemption without a toxic assessment by OEHHA; hence, staff recommends a limited and conditional exemption as a balanced approach.

Staff will seek an assessment from OEHHA on Opteon 1100. If the assessment determines Opteon 1100 meets the conditions in Rule 1168, which triggers the exemption from the definition of a VOC under Rule 1168, staff will conduct outreach and include guidance on the South Coast AQMD website. If, however, OEHHA identifies potential toxicity concerns, staff will work to better understand the toxicity concerns from Opteon 1100, which is an HFO, and if the toxicity concerns could more broadly apply to other HFOs. Staff will report back to the Stationary Source

~~Committee Governing Board~~ once OEHHA completes their assessment to seek guidance if a broader policy regarding HFOs should be considered.

## DISCUSSION ON THE TECHNOLOGY ASSESSMENTS

South Coast AQMD proposes lower VOC limits to reduce emissions to work toward achieving air quality goals. While most VOC limits reflect new technology in the marketplace and are based on currently available products, in some instances, the VOC limit is based on manufacturer feedback especially when the products may not be widely available. Based on Rule 1168 amended in 2017, staff proposed to perform a technology assessment for nine different categories: Foam Sealants; ABS to PVC Transition; PVC Welding Cement; CPVC Welding Cement; All Other Roof Adhesives; Single Ply Roof Membrane Adhesives; All Other Roof Sealants; Single Ply Roof Membrane Sealants; and Top and Trim Adhesives. This technology assessment is required to assess the feasibility of the proposed VOC limits that will go into effect on January 1, 2023.

A South Coast AQMD technology assessment can take many forms including third-party evaluation, laboratory testing and evaluations, or an in-house evaluation. Rule 1168 technology assessment was conducted in-house including evaluation of previous survey data, the QERs, consultation with the manufacturers, and working group meetings. The primary sources of data staff relied on were the: 1) 2013 Survey, and 2) QERs. In 2014, staff conducted a survey of adhesives and sealants sold into and within the South Coast AQMD in 2013, and the survey included the sales and emissions of those products. In addition, staff relied on the QERs to perform the technology assessment. Rule 1168 requires manufacturers and private labelers to submit QERs every three to five years based on the timeline shown in Table 2-9 below.

Table 2-9: Reporting Deadlines for QERs

Reporting Deadlines		Reported Years
Manufacturers or Private Labelers	Big Box Retailers & Distribution Centers	
<b>September 1, 2019</b>	May 1, 2019	2017, 2018
<b>September 1, 2022</b>	May 1, 2022	2020, 2021
<b>September 1, 2025</b>	May 1, 2025	2023, 2024
<b>September 1, 2030</b>	May 1, 2030	2028, 2029
<b>September 1, 2035</b>	May 1, 2035	2033, 2034
<b>September 1, 2040</b>	May 1, 2040	2038, 2039

At this time, staff only has the complete set of QERs for 2017 and 2018. That data likely doesn't include recent product reformulations to meet the future compliance deadlines. The next QER deadline is September 2022.

There are different metrics that staff uses to assess the data for products under Rule 1168. The market penetration of low-VOC products is a useful indicator of technical feasibility and Sales

Weighted Average (SWA), which shows VOC levels of products in the category, but rather than averaging it for all products, it weighs the VOC levels toward products with higher sales volumes.

In the next section, staff will provide the technology assessment for nine categories of adhesives and sealants.

### **TECHNOLOGY ASSESSMENTS**

In the sections below, the data, discussions with stakeholders, and staff proposal for each category included in the technology assessment will be provided.

#### *Top and Trim Adhesives*

The June 2002 amendment of Rule 1168 included a category for Top and Trim Adhesives. Top and Trim Adhesives are used to adhere automobile and marine trim, including headliners, vinyl tops, vinyl trim, sunroofs, dash covering, door covering, floor covering, panel covering, and upholstery. The VOC limit was set at 540 g/L, less water and exempt compounds, until January 1, 2004, when a 250 g/L VOC limit went into effect. In October 2003, the rule was amended, and the proposed VOC limit reduction was delayed for one year to allow manufacturers additional time to reformulate. The rule was amended again in December 2004 to further delay the effective date of the 250 g/L VOC limit to January 1, 2007.

While the initial results were promising, the technical challenge of high heat resistance was never overcome and Top and Trim Adhesive users switched to higher VOC products (620 g/L), using the 55-gallon per year exemption. All reported sales for the Top and Trim category in 2012 was for the high-VOC products. Rather than decrease emissions from this category by 0.2 tpd, the 250 g/L limit in conjunction with the volume usage exemption increased emissions by 0.04 tpd.

To address the increased emissions due to the 55-gallon per year exemption, in 2017 staff reinstated the 540 g/L limit and excluded Top and Trim Adhesives from the 55-gallon per year exemption effective January 1, 2019. The removal of the 55-gallon exemption resulted in manufacturers reformulating products to meet the 540 g/L limit, prohibiting the products with VOC limits above 620 g/L.

The technology assessment for the Top and Trim Adhesives category included a thorough analysis of the 2013 survey data, 2017 and 2018 QERs (Table 2-10 and Figure 2-2), and extensive discussion with stakeholders and manufacturers. Table 2-10 data show that the baseline emissions have decreased since 2013 and the sales weighted average (SWA) VOC for the average VOC content of products based on the sales volume has also decreased. In 2018, the SWA VOC was 337 g/L, which is below the 540 g/L VOC limit. Figure 2-2 shows that in 2017 and 2018, most of the products were in the 10-20 g/L and 610-620 g/L ranges. Since the 55-gallon exemption became effective in 2019, the use of high VOC products (> 600 g/L) has been eliminated and currently all the products in this category meet the 540 g/L limit. Staff has been in discussions with stakeholders with regards to meeting the upcoming 250 g/L VOC limit. Manufacturers have not yet been successful in reformulating all their products to the proposed 250 g/L, due to the supply chain issues and price spikes in recent years and other challenges. Based on stakeholders' comments, it is challenging for lower VOC products to meet the necessary performance standards. For example, adhesives work on flat areas, but the challenge is with the contoured areas (e.g., seats). Manufacturers still see a potential to reformulate to 250 g/L but need more time.

Staff's proposal is to retain the 250 g/L limit with a future effective date of January 1, 2028, to allow an additional five years for reformulations. The delayed emission reductions would be

0.1 tpd according to the 2017/2018 QER, but this number will likely be an overestimate since the 2017/2018 QER included the high VOC (> 600 g/L) products that have been phased out since 2019.

Table 2-10: Top and Trim Adhesives Data

Top and Trim Adhesives			
Existing Rule Limit: 540 g/L Effective Now			
Existing Rule Limit: 250 g/L Effective 1/1/2023			
Proposed Rule Limit: 250 g/L Effective 1/1/2028			
	2013	2017	2018
Sale Volume (gal)	PD*	75,000	60,000
Baseline (tpd)	0.35	0.28	0.23
# of Products	PD	19	19
SWA* VOC (g/L)	526	424	337

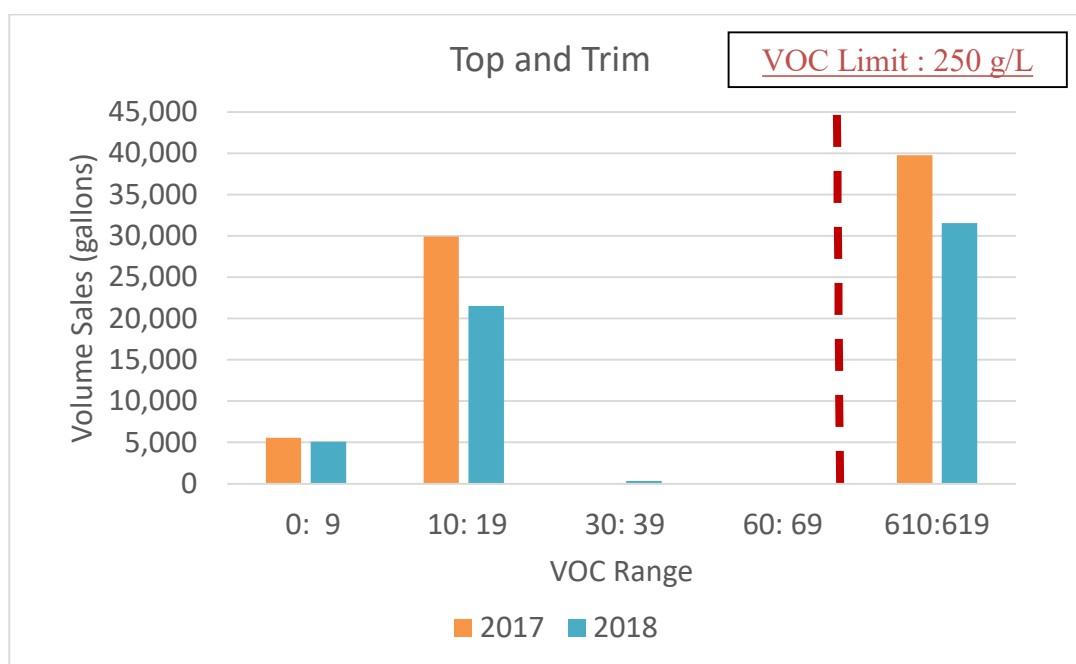


Figure 2-2: Top and Trim Adhesives 2017/2018 QER Sales Data

### *Foam Sealants*

Foam Sealants are products used to fill and form durable, airtight seals to common building substrates. They are typically sprayed into building cavities to provide water resistance, thermal resistance, or acoustic dampening. The foam itself is typically a one-component or two-component polyurethane that contains little or no VOC. However, the propellants used in some of the aerosol products do contribute to the VOC content. The majority of the products offered for sale and the majority of the volume reported used are aerosol products. In the 2017 amendment, staff proposed

to reduce the VOC limit of the foam sealant to 50 g/L, effective January 1, 2023, provided the technology assessment demonstrates the VOC limits are feasible. As the VOC in these products is predominantly from the propellants, it was expected that to comply with the proposed limits, manufacturers would use alternative non-VOC propellants or utilize application techniques that do not depend on propellants to disburse the product.

In 2022, staff performed a technology assessment for the Foam Sealant category including a thorough analysis of the 2013 survey data, 2017 and 2018 QERs (Table 2-12 and Figure 2-3) and extensive discussion with stakeholders and manufacturers. The data shows that the baseline emissions have decreased since 2013 despite the increase in the number of products sold in the South Coast AQMD. In 2018, the SWA VOC was 148 g/L, which is substantially below the current 250 g/L VOC limit. Figure 2-3 shows that in 2017 and 2018, most of the products were in the range of 150-160 g/L. Stakeholders requested further subcategorization of the foam sealant category and staff took a closer look into the 2017/2018 QER data and separated the one-component and two-component foam sealants. One-component foam sealants as shown in Table 2-13 and Figure 2-4, exceed the proposed 50 g/L VOC limit. The majority of Foam Sealants fall into the one-component foam sealant category. However, the Two-Component Foam Sealants meet the proposed 50 g/L VOC limit as shown in Table 2-14 and Figure 2-5. Staff considered several options for subcategorizations and, based on stakeholders' recommendation to consider using the ASTM D717 – Standard Terminology of Building Seal and Sealants and the U.S. EPA segmentation of foam sealants in their Significant New Alternatives Policy (SNAP) rule definitions, staff proposes to subcategorize the Foam Sealant category into the following three subcategories: One-Component Foam Sealant, Low-Pressure Two-Component Foam Sealant, and High-Pressure Two-Component Foam Sealant.

For One-Component Foam Sealant, staff initially proposed 150 g/L. The proposed limit was adjusted to 180 g/L during further discussion with stakeholders. It was suggested there are some products with VOC emissions around 180 g/L that were not reported. The three proposed subcategories and VOC limits for Foam Sealants are: 1) One-Component Foam Sealant with a 180 g/L VOC limit, 2) Low-Pressure Two-Component Foam Sealant, retaining the 50 g/L VOC limit, and 3) High-Pressure Two-Component Foam Sealant, retaining the 50 g/L VOC limit. Removing the 50 g/L VOC limit for the One-Component Foam Sealants and reducing the limit from 250 g/L to 180 g/L would achieve 0.01 tpd emission reductions and the foregone emissions would be 0.12 tpd.

### Weight Percent Metric

Staff is proposing to change the metric for regulating foam sealants. A gram per liter metric relies on calculating volume solids, which is a complicated calculation for liquid products and becomes further complicated for pressurized product and propellant in a container. A complicated regulatory standard can lead to confusion and the inadvertent sale of non-compliant products. To simplify compliance, staff is proposing a weight percent limit for foam sealants and foam insulation. The approximate conversion is 10 g/L ~ 1 percent by weight. Staff confirmed this conversion factor based on Safety Data Sheets (SDS) of foam products that list VOC content in both g/L and weight percent. The change in the regulatory limit metric will also simplify the VOC test method development for Foam Sealants, which was impacted by social distancing requirements due to the pandemic. Method development requires laboratory staff to work in-person as a collaborative process. The proposed conversion to weight-based VOC limits for foam sealants is also aligned with CARB protocols for pressurized products. The weight-based VOC



analysis process involves separation of propellant, identification and discounting of exempts in propellant; compliance can often be determined solely from propellant VOC.

Considering weight-based VOC for Foam Sealant subcategories, staff proposes the VOC limits as in Table 2-11 below:

Table 2-11: Foam Sealant Proposed Limits and Effective Dates

Proposed Limit		Effective Date
<b>One-Component Foam Sealant</b>	18% (in place of 180 g/L)	July 1, 2023
<b>High-Pressure Two-Component Foam Sealant</b>	5% (in place of 50 g/L)	January 1, 2023
<b>Low-Pressure Two-Component Foam Sealant</b>	5% (in place of 50 g/L)	January 1, 2023

#### Foam Sealant Data as Reported – without Subcategories

Rule 1168 currently has only one category for foam sealants. The following data includes all of the data as reported. In the table and figures that follow, staff manually separated out the One-Component Foam Sealants from the Two-Component Foam Sealants.

Table 2-12: Foam Sealant Data as Reported – without Subcategories

Foam Sealant			
Existing Rule Limit: 250 g/L Effective Now			
Existing Rule Limit: 50 g/L Effective 1/1/2023			
Proposed Rule Limit: See Tables 14 and 15 for Subcategories			
	2013	2017	2018
Sale Volume (gal)	155,000	107,000	105,000
Baseline (tpd)	0.27	0.18	0.18
# of Products	16	37	45
SWA VOC (g/L)	153	154	148

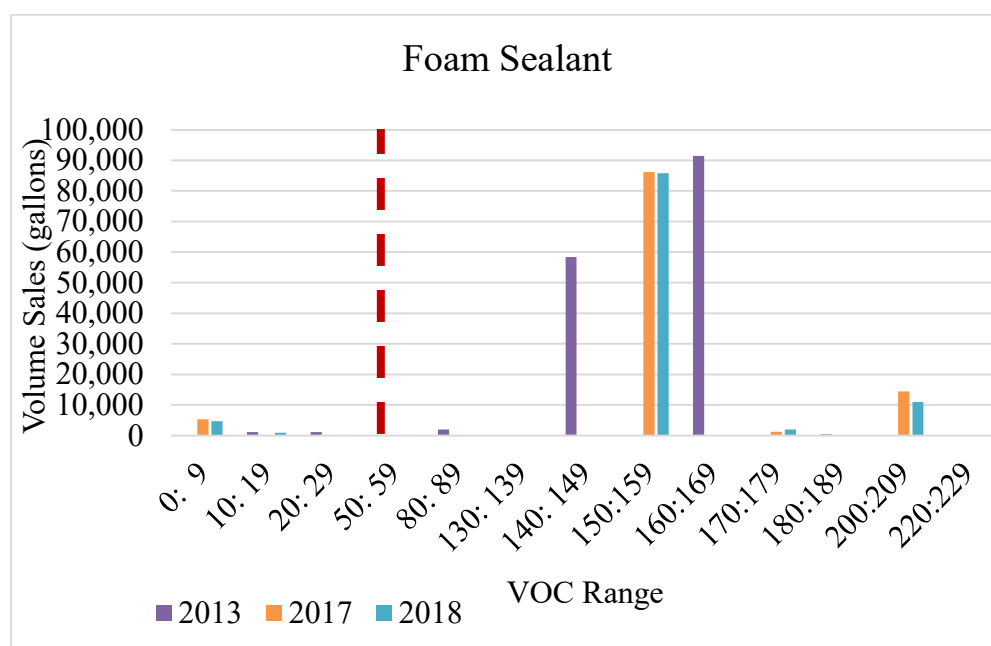


Figure 2-3: Foam Sealant 2017/2018 QER Sales Data as Reported – without Subcategories

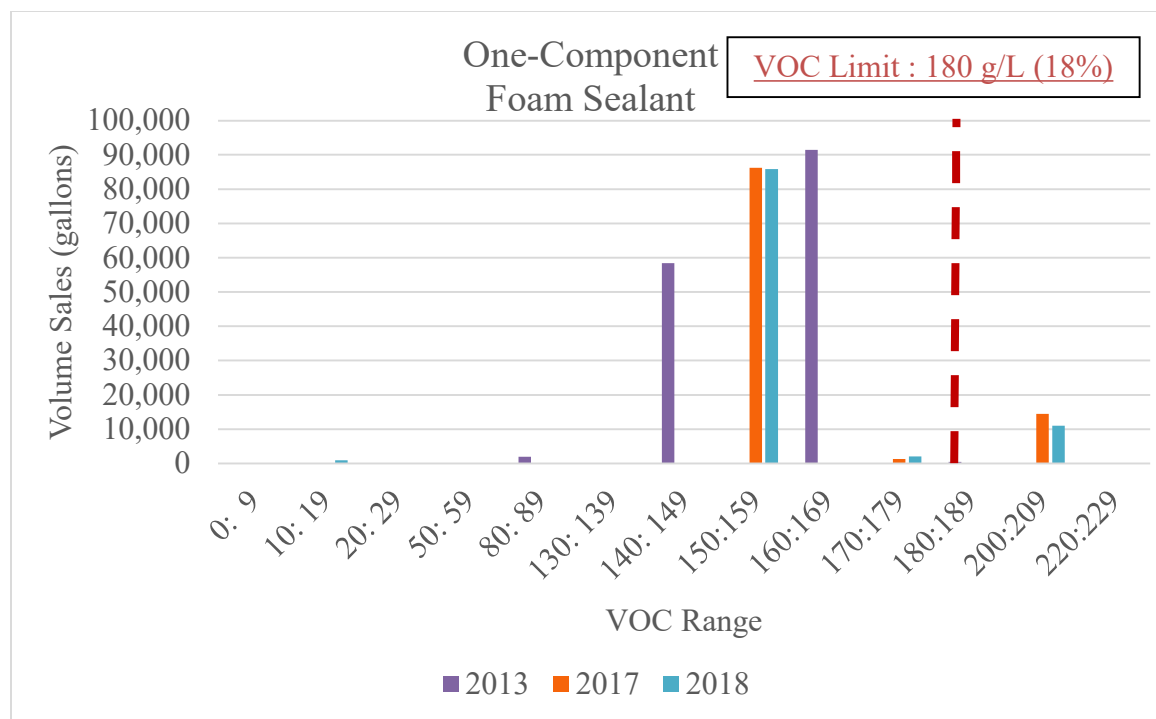
#### One-Component Foam Sealants

For Table 2-13 and Figure 2-4, staff manually separated out the One-Component Foam Sealant data.

Table 2-13: One-Component Foam Sealants Data

Foam Sealant – 1K Foam Sealant			
Existing Rule Limit: 250 g/L Effective Now			
Existing Rule Limit: 50 g/L Effective 1/1/2023			
Proposed Rule Limit: 18%			
	2013	2017	2018
Sale Volume (gal)	152,000	102,000	99,000
Baseline (tpd)	0.27	0.18	0.18
# of Products	14	28	31
SWA VOC (g/L)	155	154	148





**Figure 2-4: One-Component Foam Sealants 2017/2018 QER Sales Data**

### Two-Component Foam Sealants

For Table 2-14 and Figure 2-5, staff manually separated out the Two-Component Foam Sealant data.

**Table 2-14: Two-Component Foam Sealants Data**

Foam Sealant – 2K Foam Sealants			
Existing Rule Limit: 250 g/L Effective Now			
Existing Rule Limit: 50 g/L Effective 1/1/2023			
Proposed Rule Limit: 5% Effective 1/1/2023			
	2013	2017	2018
Sale Volume (gal)	PD	5,400	5,000
Baseline (tpd)	0.001	0.001	0.001
# of Products	PD	9	14
SWA VOC (g/L)	22	3	0.1

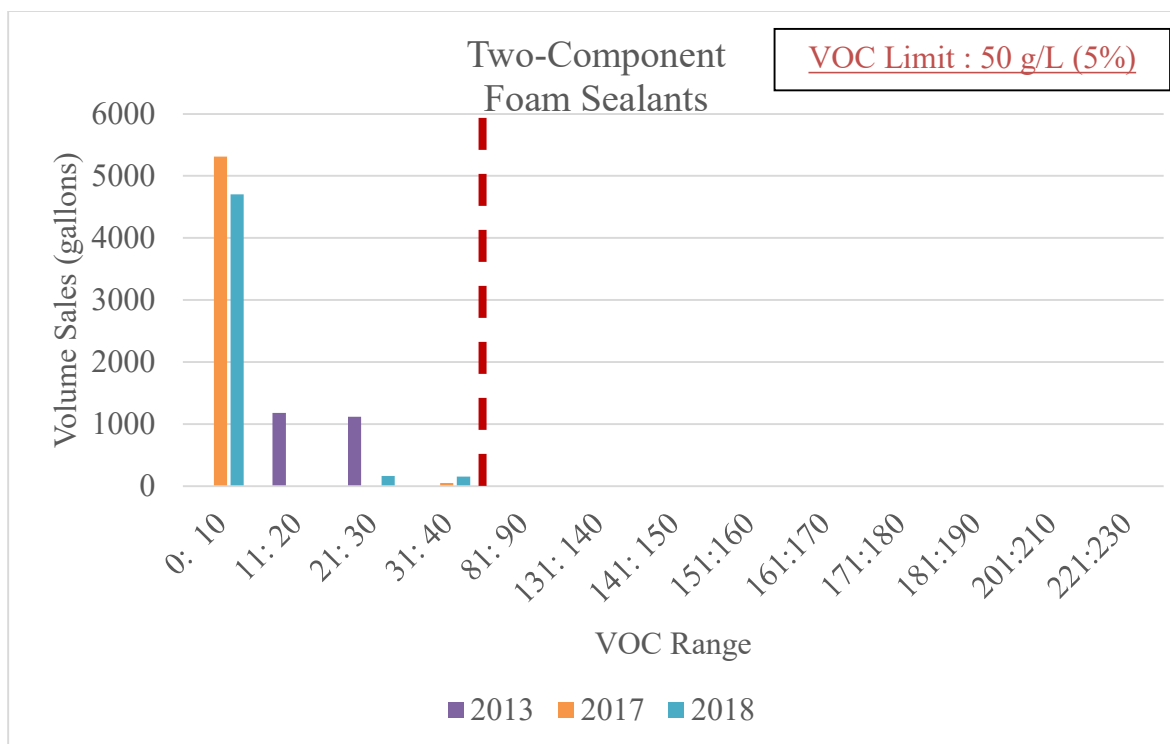


Figure 2-5: Two-Component Foam Sealants 2017/2018 QER Sales Data

### *Plastic Welding Cement*

During the last rule amendment in 2017, the 2013/2014 survey indicated that CPVC and PVC Welding Cement products have a VOC content close to the 490 g/L and 510 g/L existing rule limits at that time. During the 2017 rule amendment staff proposed a 425 g/L limit for the PVC welding cement and a 400 g/L limit for the CPVC welding cement categories based on manufacturer feedback on what would be technically feasible, products released after the survey, including a product being marketed as a multi-purpose welding cement for a combination of ABS, PVC, and CPVC with a VOC content below 325 g/L, and a product marketed to the irrigation market for PVC and CPVC below the proposed limits for those categories.

The current rule amendment started with a thorough technology assessment for the PVC, CPVC, and ABS TO PVC Welding Cement products including an analysis of the 2013 survey, 2017 and 2018 QER data (Table 2-15 and Figure 2-6), and extensive discussions with stakeholders and manufacturers as shown in Table 2-15. Each of the three categories will be discussed in the next sections.

### PVC Plastic Cement

As shown in Table 2-15 and Figure 2-6, based on QER data the PVC category has shown some decrease in VOC levels but not enough to meet the future limit of 425 g/L limit. However, after having several discussions with stakeholders, staff concluded that the PVC category can meet the future VOC limit effective January 1, 2023 and will retain the 425 g/L limit for this category. The products reformulated to meet the January 1, 2023 deadline are starting to be shipped to retail locations; therefore, the product sales will not appear in the QERs until the manufacturers are required to report their 2022 and 2023 sales.

Table 2-15: PVC Plastic Cement Data

PVC Plastic Cement			
Existing Rule Limit: 510 g/L Effective Now			
Existing Rule Limit: 425 g/L Effective 1/1/2023			
Proposed Rule Limit: 425 g/L Effective 1/1/2023			
	2013	2017	2018
Sale Volume (gal)	159,000	155,000	155,000
Baseline (tpd)	0.92	0.85	0.85
# of Products	164	336	335
SWA* VOC (g/L)	522	480	480

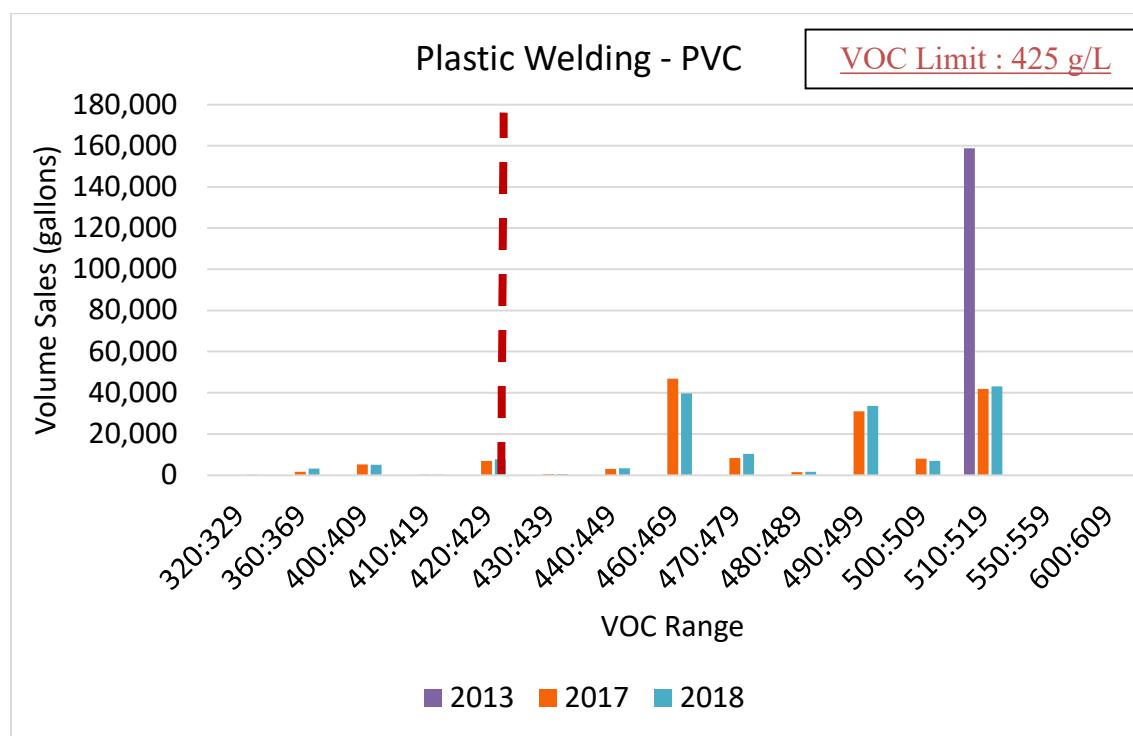


Figure 2-6: PVC Plastic Cement 2017/2018 QER Sales Data

### CPVC Plastic Cement

Since the latest data available was for 2017 and 2018, as shown in Table 2-16 and Figure 2-7 below, the data didn't show a significant number of products meeting the future limits, but trends show VOC levels decreasing and the data didn't show any recent reformulations. Staff had several discussions with the Plastic Welding Cement manufacturers and their representatives. The initial feedback was that some manufactures have reformulated their products to meet the future limits while others are still working on future compliant products. Manufacturers were most concerned

with those CPVC products that are used in life safety systems (e.g., fire sprinkler system) and CPVC used for industrial applications. Stakeholders requested additional time to reformulate and perform extensive required testing. Staff concluded that there are technical challenges and high costs associated with reformulating the CPVC – Life Safety Systems products and CPVC for industrial applications. Therefore, staff proposes to create two subcategories under the CPVC category. The first subcategory is “CPVC Welding Cement for Life Safety Systems” and the other is “Higher Viscosity CPVC Welding Cement.” Staff will maintain the current 490 g/L limit for CPVC for Life Safety Systems and will delay the effective date for Higher Viscosity CPVC to July 1, 2024, with the previously proposed 400 g/L VOC limit. The forgone emissions for the CPVC for Life Safety System subcategory will be 0.01 tpd and the delayed emissions for higher viscosity CPVC will be 0.01 tpd. In addition, PAR 1168 will require specific labeling requirements to distinguish these products from the lower-VOC CPVC cements.

Table 2-16: CPVC Plastic Cement Data

CPVC Plastic Cement			
Existing Rule Limit: 490 g/L Effective Now			
Existing Rule Limit: 400 g/L Effective 1/1/2023			
Proposed Rule Limit: See Table 25 for Subcategories			
	2013	2017	2018
Sale Volume (gal)	10,700	6,700	8,200
Baseline (tpd)	0.06	0.035	0.04
# of Products	37	58	58
SWA VOC (g/L)	651	383	469

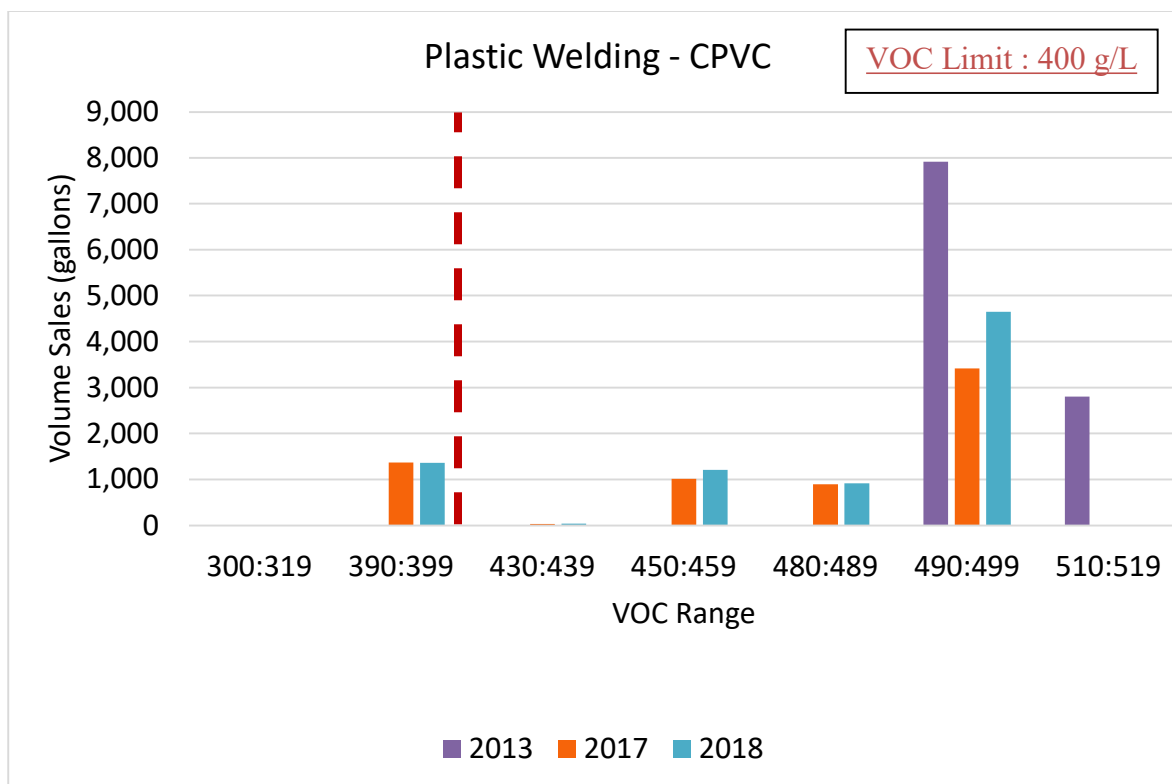


Figure 2-7: CPVC Plastic Cement 2017/2018 QER Sales Data

#### ABS to PVC Plastic Cement

This category was added based on stakeholder input during the 2017 rule amendment since stakeholders indicated they need higher VOC limit to adhere the PVC to the ABS. Staff proposed an initial limit of 510 g/L with a VOC reduction in 2023 to 425 g/L. As shown in Table 2-17 and Figure 2-8, based on QER data the ABS to PVC category has shown decrease in VOC levels and the majority of the products are in the 320 g/L to 329 g/L range and the SWA for this category has decreased from 510 g/L in 2013 to 377 g/L and 390 g/L in 2017 and 2018 respectively, which is well below the 425 g/L VOC limit that will go into effect on January 1, 2023. Staff proposes to retain the 425 g/L future limit for this category.

Table 2-17: ABS to PVC Plastic Cement Data

ABS to PVC Plastic Cement			
Existing Rule Limit: 510 g/L Effective Now			
Existing Rule Limit: 425 g/L Effective 1/1/2023			
Proposed Rule Limit: 425 g/L Effective 1/1/2023			
	2013	2017	2018
Sale Volume (gal)	254	1,800	2,000
Baseline (tpd)	0.001	0.007	0.008
# of Products	PD	PD	PD
SWA* VOC (g/L)	510	377	390

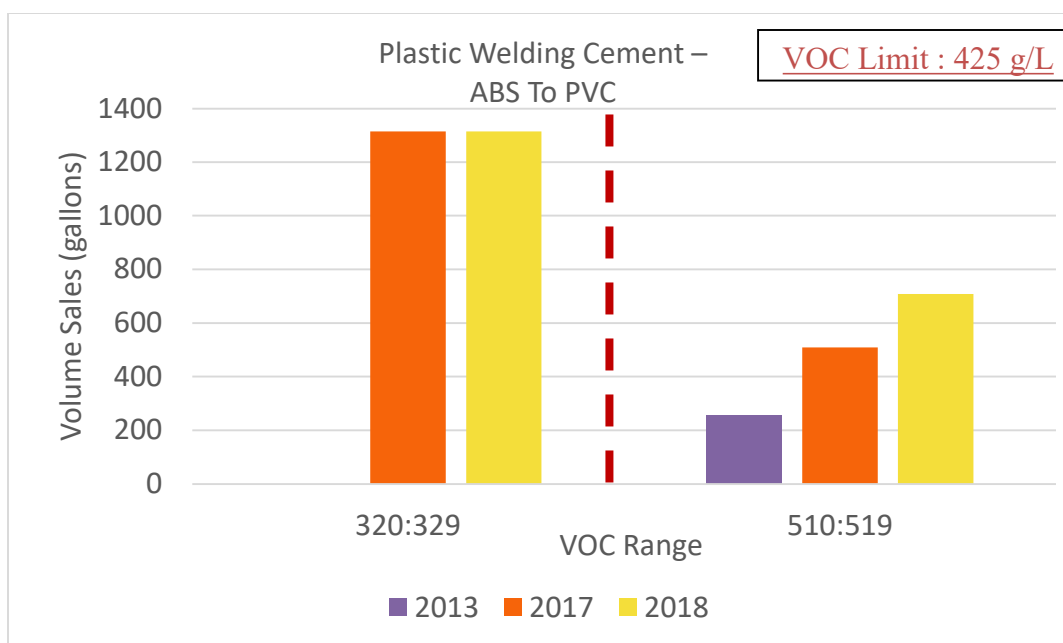


Figure 2-8: ABS to PVC Plastic Cement 2017/2018 QER Sales Data

### Roofing Products

#### Background

During the initial phase of the last amendment to Rule 1168, staff proposed significant reductions that were expected to be achieved by exempting DMC and t-BAC from the definition of a VOC. Due to the toxicity concerns of DMC and t-BAC and the uncertainty of the on-site exposure modeling methodologies, the rule amendment process was put on hold. While it was on hold, South Coast AQMD staff conducted a toxics symposium in October 2014 and drafted an assessment on t-BAC, the “t-BAC Assessment White Paper,” which was released in October 2016 and findings were presented to the Stationary Source Committee in November 2016 and April 2017. The assessment resulted in the Stationary Source Committee recommending a precautionary approach

when considering the exempt status for any compound with a toxic endpoint. With the Governing Board's direction not to allow further VOC exemptions for DMC or t-BAC, staff re-initiated the amendment to Rule 1168 with a more modest proposal on VOC reductions for roofing adhesives and sealants. During the rule amendment, stakeholders requested technology assessments for roofing adhesives and sealants to assess if further subcategorizations should be included.

During the current rule amendment, staff performed a thorough analysis on the QERs data for all four roofing categories to assess the available (2017 and 2018) VOC data and the feasibility of the proposed limits. After presenting the preliminary results and staff's proposal during Working Group Meeting #1, staff followed up with stakeholders to discuss the preliminary proposals and the potential subcategorizations as shown in Table 2-18.

Table 2-18: Meetings with Roofing Industry Stakeholders and Representatives

Date	Stakeholder
February 22, 2022	Soprema
February 25, 2022	Roof Coatings Manufacturers Association (RCMA)
March 8, 2022	Asphalt Roofing Manufacturers Association (ARMA)
May 11, 2022	Asphalt Roofing Manufacturers Association (ARMA)
July 27, 2022	Roof Coatings Manufacturers Association (RCMA)
August 23, 2022	Single Ply Roof Industry (SPRI)
September 20, 2022	Single Ply Roof Industry (SPRI)

Staff's initial assessment was to separate the category for asphalt-based roofing adhesives in the All Other Roofing Adhesive category and the new category could have a low VOC limit (~30 g/L). For other roofing categories, staff did not find a need for further subcategorizations. In the next subsection for All Other Roof Adhesives, more information for this subcategorization will be provided.

As detailed in the beginning of this chapter, staff is proposing to prohibit the use of t-BAC and pCBtF in PAR 1168. Manufacturers currently using these compounds to achieve lower VOC limits and manufacturers that planned to use these compounds to meet future effective limits will be impacted by the prohibition. Staff confirmed that the proposed limits, for example for roofing adhesives, may need to be reassessed, and after discussions with stakeholders, staff proposed the updated VOC limits for the categories impacted by the t-BAC and pCBtF prohibition, which will be discussed in the next subsections for each affected category.

### All Other Roof Adhesives

As shown in Figure 2-9 the majority of the products in this category are in the range of 20 g/L – 30 g/L VOC. Since these products are all asphaltic adhesives, during Working Group Meeting #1 staff proposed to make a subcategorization in the All Other Adhesive category for asphaltic

adhesives. After discussions with stakeholders, staff recommended to have two subcategories: 1) Shingle Laminating Adhesive: an asphalt-based adhesive used to adhere laminate sheets or shingles when manufacturing Shingle Laminating Adhesive and 2) Hot Applied Modified Bitumen/Built Up Roof Adhesive: a solid asphalt adhesive that must be heated in order to be applied. Table 2-19 and Figure 2-9 show the updated All Other Roof Adhesives category after excluding asphaltic products. After proposing the subcategorizations, stakeholders asked about the need for QER requirements for asphaltic roofing products; since not all asphaltic products are roofing adhesive and VOCs are so low there is no value in reporting VOC levels. However, staff sees value in QER for all categories and manufacturers can estimate the volume of product used as an adhesive for products that have multiple uses and knowing the volumes of low-VOC categories is useful for planning and emission estimates.

**Table 2-19: All Other Roof Adhesives Data (Before Subcategorization)**

All Other Roof Adhesives	
Existing Rule Limit: 250 g/L Effective Now	
Existing Rule Limit: 200 g/L Effective 1/1/2023	
Proposed Rule Limit: 250 g/l Effective Upon Adoption	
	2017 (same as 2018)
Sale Volume (gal)	>> 100,000
Baseline (tpd)	1.6
# of Products	54
SWA VOC (g/L)	22



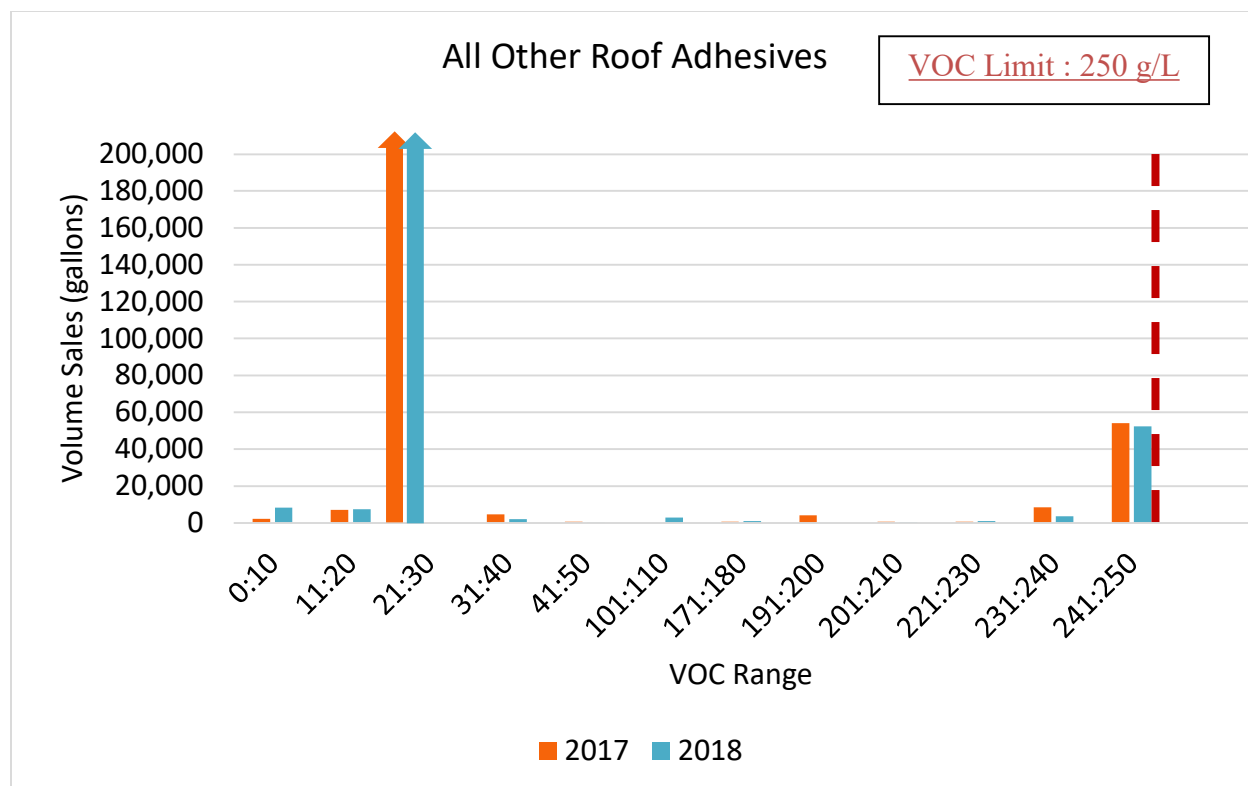


Figure 2-9: All Other Roof Adhesives 2017/2018 QER Sales Data (Before Subcategorization)

#### All Other Roof Adhesives with Asphaltic Products Removed

Stakeholders indicated pCBtF prohibition will impact their ability to comply with the future limit for roofing products. For the All Other Roof Adhesive category and based on 2017/2018 QERs, the majority of the products are in the 241-250 g/L range. Staff reviewed the products Technical Data Sheets (TDS) and SDS for all reported products and no product listed pCBtF on the documents. Staff proposes to revert back to the 250 g/L limit for this category. The 250 g/L limit was established in 1993 as the default VOC limit, well before the exemption of pCBtF. Staff concludes that the 250 g/L limit is technically feasible since All Other Roof Adhesives had to meet that limit in 1993 without the use of pCBtF.

Table 2-20: All Other Roof Adhesives (After Subcategorization)

All Other Roof Adhesives (Updated)	
Existing Rule Limit: 250 g/L Effective Now	
Existing Rule Limit: 200 g/L Effective 1/1/2023	
Proposed Rule Limit: 250 g/l Effective Upon Adoption	
	2017 (same as 2018)
Sale Volume (gal)	80,000
Baseline (tpd)	0.17
# of Products	46
SWA VOC (g/L)	188

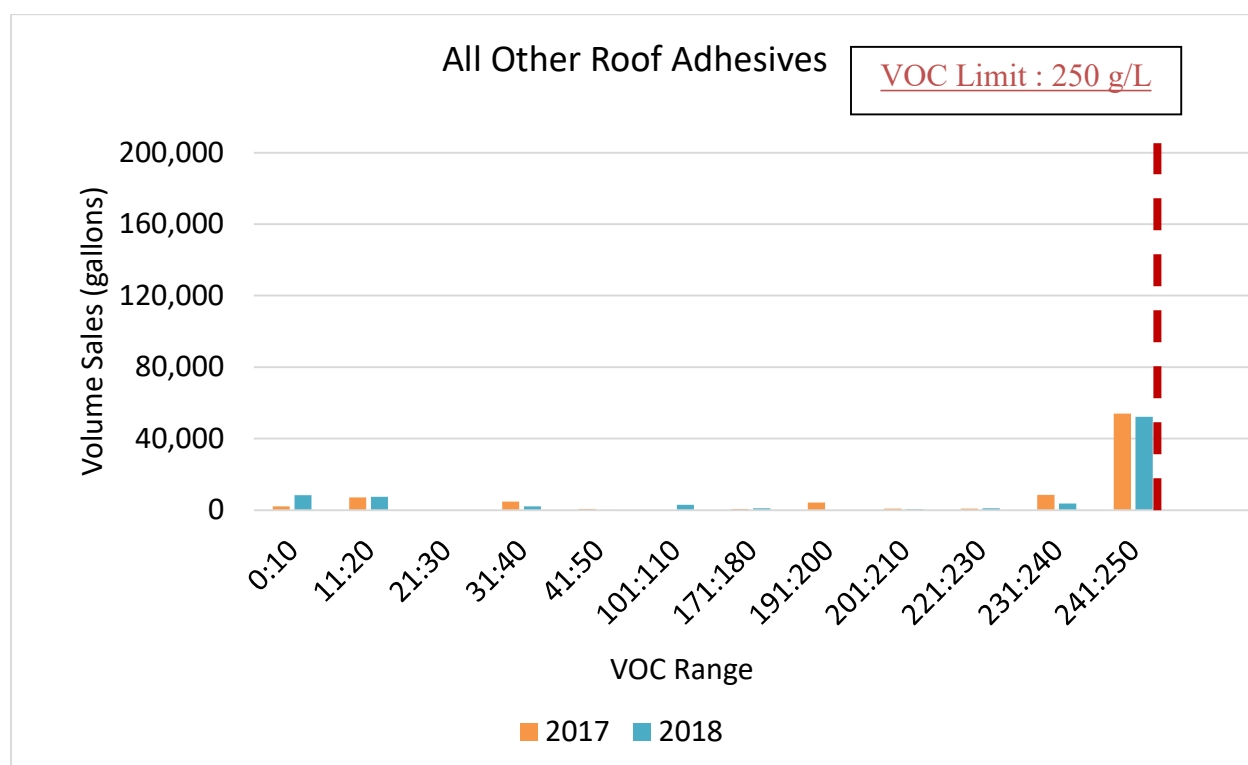


Figure 2-10: All Other Roof Adhesives 2017/2018 QER Sales Data (After Subcategorization)

### Single Ply Roof Membrane Adhesives

There are several pathways to reformulating lower-VOC products: 1) exempt solvents as has been discussed thoroughly in the staff report, and 2) water-based products. Reformulations away from organic solvents to water has proven to be very successful in many products; however, the transition to water-based adhesives has not been as widespread.

During the 2017 rule development, concerns were raised regarding the use of water-based adhesives in cool weather. The 2017 staff report stated 50 percent of the market share was waterborne. Based on the 2018 QER, only ~ 10 percent of the market share was waterborne, showing solvent-based products are being reformulated to meet 200 g/L limits. However, based on the 2017/2018 QERs as shown in Table 2-21 and Figure 2-11, sizable market share already meets the 200 g/L VOC limits and the data show decreasing SWA VOC from 2013 to 2017/2018 QERs; there are a cluster of products formulated at 250 g/L. Technology assessment for this category was also to determine if subcategorization for this category is warranted. After discussions with roofing industry stakeholders, staff proposes that no further subcategorization for this category is needed. Although data shows a reduction in VOC content of Single Ply Roof Membrane Adhesives, stakeholders indicated a pCBtF prohibition will impact ability to comply with future 250 g/L limit. Staff reviewed the TDS and SDS for all reported products and 11 products listed pCBtF on the SDS. Staff is proposing to revert back to the 250 g/L limit for this category and this limit was in effect since 1998 as the default VOC limit, well before the exemption of pCBtF.

Staff purchased and tested seven roofing adhesives and sealants sold in the South Coast AQMD for pCBtF and only found one sample, a single ply roof membrane adhesive, that contained 1.3 percent pCBtF.

After the Public Workshop, manufacturers recommended staff include a separate subcategory for EPDM/TPO Single Ply Roof Membrane Adhesives as those products rely on a higher percent of pCBtF to comply with the VOC limits. Staff's research verified these products contain higher levels of pCBtF than other Single Ply Roof Membrane Adhesives. Therefore, staff proposes to include a new category for EPDM/TPO Single Ply Roof Membrane Adhesives and provide four years for product reformulation before the pCBtF prohibition takes effect. In addition, staff is proposing to allow two years for product reformulation for the Single Ply Roof Membrane Adhesives, instead of the original proposal of one year.

Table 2-21: Single Ply Roof Membrane Adhesives Data

Single ply Roof Membrane Adhesive			
Existing Rule Limit: 250 g/L Effective Now			
Existing Rule Limit: 200 g/L Effective 1/1/2023			
Proposed Rule Limit: 250 g/l Effective Upon Adoption			
	2013	2017	2018
Sale Volume (gal)	260,000	230,000	270,000
Baseline (tpd)	0.45	0.36	0.38
# of Products	52	61	60
SWA VOC (g/L)	147	120	125

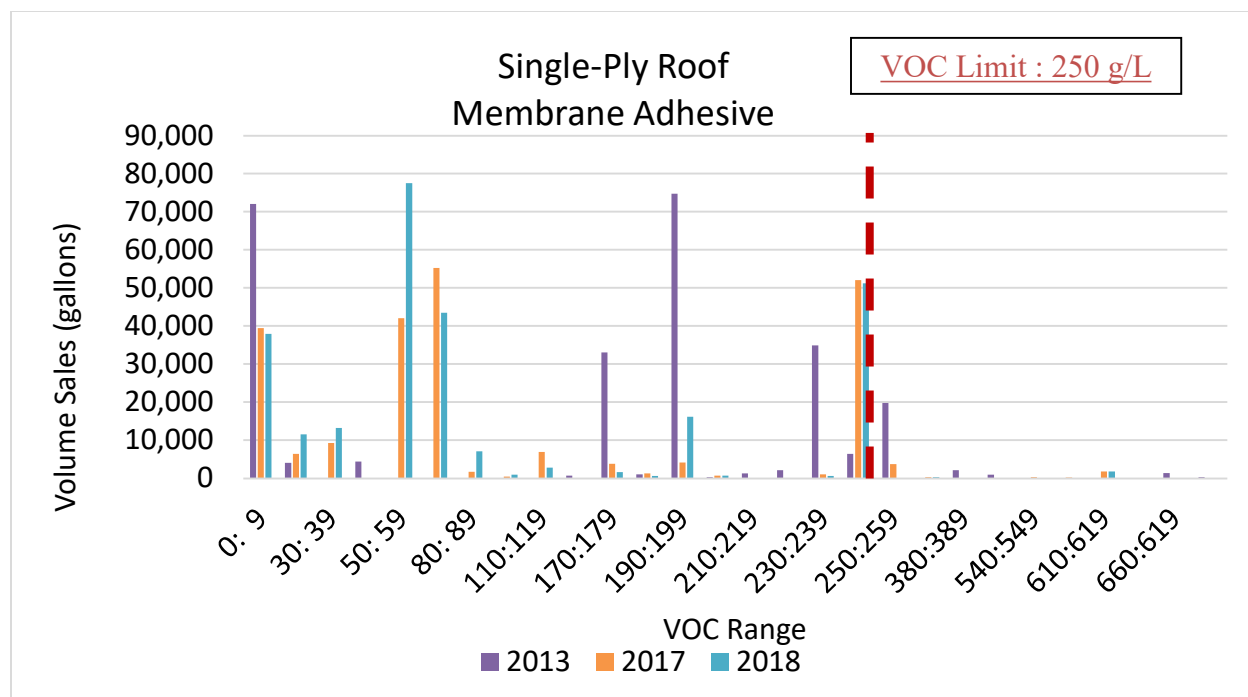


Figure 2-11: Single Ply Roof Membrane Sealants 2017/2018 QER Sales Data

### All Other Roof Sealants

This category includes all roof sealants except Single Ply Roof Membrane Sealants. Most products are either asphalt or polyurethane-based. The low-VOC products are reactive or elastomeric products that require the surface to be moisture-free. High-VOC solvent-based products are formulated for application in wet environments, e.g., leak repair during rainfall. Based on the 2017/2018 QER data (Table 2-22 and Figure 2-12) All Other Roof Sealants category, there is a considerable market share reformulated to meet the future effective limits and SWA VOC is below the future compliant limit, but survey data does not reflect most recent reformulations since the data is from 2017 and 2018 and the next set of reports are not due until September 2022.

Stakeholders indicated pCBtF prohibition will impact ability to comply with the future 250 g/L limit. Staff reviewed the TDS and SDS for all reported products and two products listed pCBtF on the SDS. Based on the products reported in the QERs, staff is proposing to revert back to the 300 g/L limit for this category and this limit was in effect since 1998 (previously non-membrane roof sealant category in previous versions of the Rule 1168), well before the exemption of pCBtF. Staff is proposing to allow two years for product reformulation before the pCBtF prohibition takes effect for All Other Roof Sealants, instead of the original proposal of one year.

Table 2-22: All Other Roof Sealants Data

All Other Roof Sealants	
Existing Rule Limit: 300 g/L Effective Now	
Existing Rule Limit: 250 g/L Effective 1/1/2023	
Proposed Rule Limit: 300 g/l Effective Upon Adoption	
	2017 (same as 2018)
Sale Volume (gal)	45,000
Baseline (tpd)	0.12
# of Products	60
SWA VOC (g/L)	198

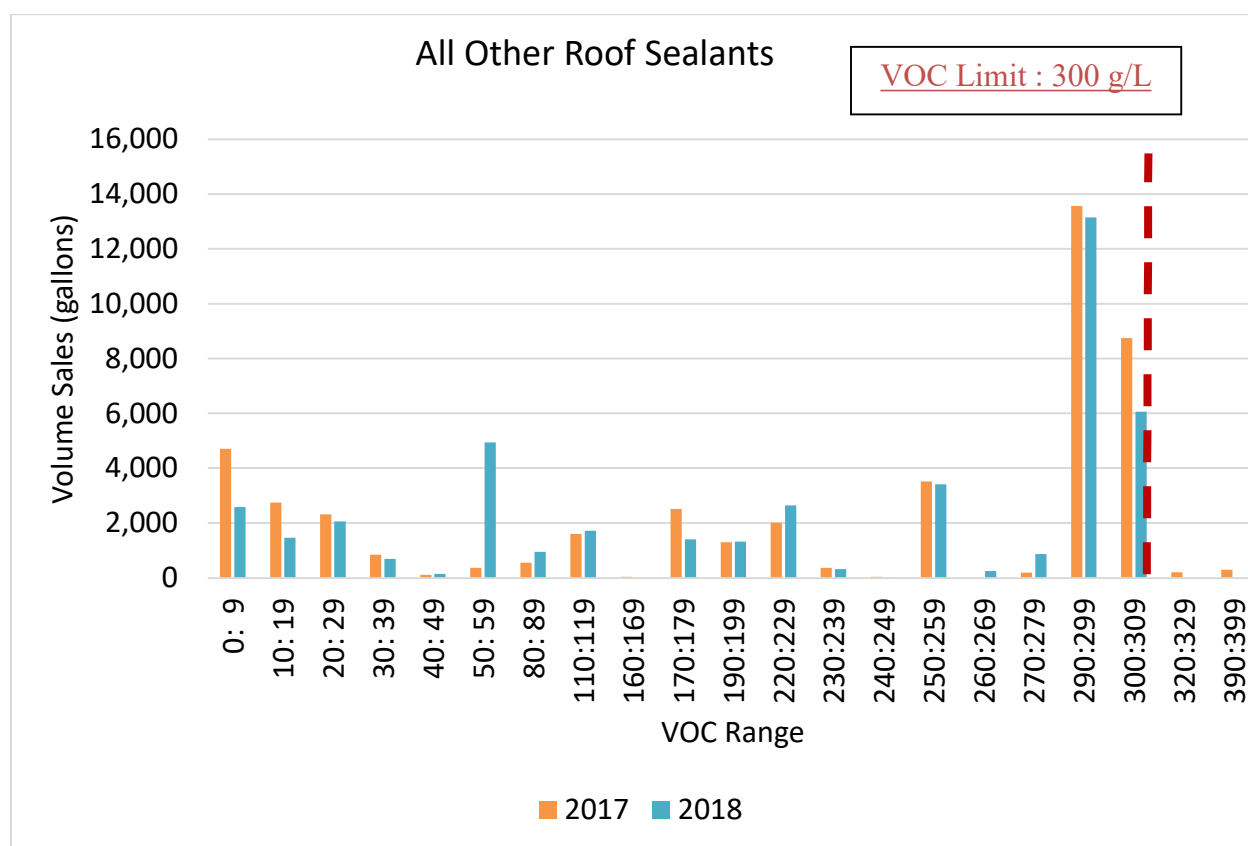


Figure 2-12: All Other Roof Sealants 2017/2018 QER Sales Data

### Single Ply Roof Membrane Sealants

Single Ply Roof Membrane Sealants technologies include Low-VOC water-based sealants, 100 percent solids sealants, and solvent-based sealants, which includes sealants formulated with exempt solvents. As shown in Table 2-23 and Figure 2-13, the overall volume and baseline emissions is much lower than for All Other Roofing Sealants. The 2017/2018 QER data shows a decrease from 2013, and SWA for this category has been decreased from 96 g/L in 2013 to around 81 g/L in 2017/2018. The vast majority of the products in this category are meeting the proposed 250 g/L limit.

Stakeholders indicated a pCBtF prohibition will impact their ability to comply with the future 250 g/L limit. However, during the pCBtF survey only one product reported to have pCBtF in this category. Staff also reviewed the TDS and SDS for all reported products and one product listed pCBtF on the SDS as well. Since the supermajority of existing products are meeting 250 g/L, staff is proposing to retain the 250 g/L limit.

The roofing industry suggested that Cut Edge Single Ply Roof Membrane Sealants should be carved out from this category to allow for a longer timeframe for reformulation. These specialty sealants are sold in squeeze tubes and are only used for small sections of roofing installations or repair. Staff is proposing to allow four years for product reformulation before the pCBtF prohibition takes effect for Cut Edge Single Ply Roof Membrane Sealants. In addition, staff is proposing to allow two years for product reformulation before the pCBtF prohibition takes effect for the Single Ply Roof Membrane Sealants (Except Cut Edge), instead of the original proposal of one year.

Table 2-23: Single Ply Roof Membrane Sealants Data

Single Ply Roof Membrane Sealants			
Existing Rule Limit: 450 g/L Effective Now			
Existing Rule Limit: 250 g/L Effective 1/1/2023			
Proposed Rule Limit: 250 g/l Effective 1/1/2023			
	2013	2017	2018
Sale Volume (gal)	8,300	13,000	13,000
Baseline (tpd)	0.027	0.012	0.012
# of Products	33	36	33
SWA VOC (g/L)	96	81	82

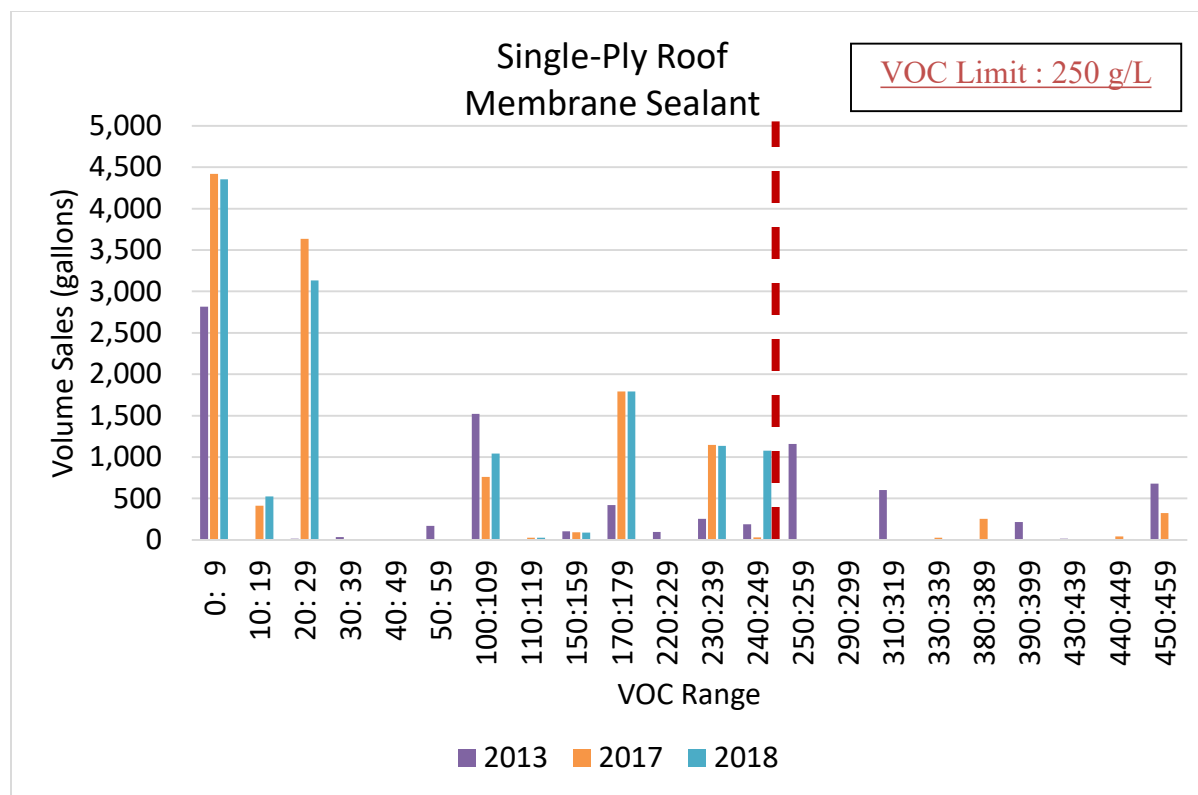


Figure 2-13: Single Ply Roof Membrane Sealants 2017/2018 QER Sales Data

## OTHER PROPOSED CHANGES TO RULE

In the sections below, staff discusses other changes that are not related to the technology assessment.

### *Clear, Paintable, And Immediately Water-Resistant Sealant*

While Rule 1168 did not require a technology assessment for Clear, Paintable, and Immediately Water-Resistant Sealants, a manufacturer asked staff to consider a higher VOC limit due to the loss of the pCBtF exemption. Clear, Paintable, and Immediately Water-Resistant Sealants was a new category included during the 2017 amendment. The products serve a similar purpose as Architectural Sealants, which are already achieving lower VOC limits (250 g/L). During the 2017 rule amendment, although South Coast AQMD staff did not recognize the necessity to have a product that is clear and paintable and immediately waterproof, staff acknowledged that the enforcement of these types of products would drive business out of the Basin. Staff confirms the regulated products that fall within this category as All Other Architectural Sealants, which has a VOC limit of 250 g/L. Staff allowed an additional five years since 2017 for the products in this category to provide enough time for reformulations to reduce the VOC content from 380 g/L to 250 g/L.

Stakeholders raised concerns about the new 250 g/L limit which will go into effect on January 1, 2023. Manufacturers indicated they can only meet the proposed VOC limits using pCBtF – no other exempt solvents are available and only aromatic solvents are compatible with these products. Aromatics have toxicity concerns as pCBtF, e.g., benzene, toluene, etc., but the rule currently does

not preclude their usage. Since these products are being used by consumers, toxicity is a significant concern. Even though the baseline emissions for this category are low, about 0.025 tpd, staff wants to prioritize lowering toxicity based on the Stationary Source Committee's direction. Considering this is a new category created in 2017, staff is confident that other Architectural Sealants currently meeting the 250 g/L VOC limit could replace this product based on the immediately waterproof aspect of sealant. Having a sealant that is both clear and paintable are not priorities especially considering toxic risk of the product. Staff also understands the manufacturers that have been using pCBtF for this product category would want to retain their products and need additional time to reformulate products without pCBtF. Therefore, staff proposes to delay the implementation of the proposed 250 g/L limit and pCBtF prohibition for this category to allow time for the required reformulations.

### ***Rubber Vulcanization Adhesive***

While Rule 1168 does not require a technology assessment for Rubber Vulcanization Adhesives, a stakeholder asked staff to consider a higher VOC limit due to some technical challenges to meet the proposed 250 g/L. Prior to 2017 amendment, VOC limit was 250 g/L but most facilities complied using the 55-gallon exemption. The 55-gallon exemption was removed in 2017 amendment and the VOC limit was increased to 850 g/L limit to reflect the VOC level of existing products. The 250 g/L limit was set for a future date allowing time for reformulation. There are some water-based products available in market with less than 5 g/L but do not work for all applications. Currently, solvent based products are formulated at 850 g/L. Staff proposes to retain the current 850 g/L limit and allow five years for reformulations. The 250 g/L VOC limit will go into effect on January 1, 2028.

### ***Roof Adhesive Primer and Roof Sealant Primer***

Rule 1168 does not require a technology assessment for any primers, and the rule does not include a specialty category for primers for roof application. Adhesive primers used for roof application is currently part of All Other Adhesive Primers subject to the 250 g/L VOC limit. Sealant primers used for roof application are currently part of All Other Sealant Primers subject to the 750 g/L VOC limit. Staff's evaluation of QER reports indicates that three out of four adhesive primers for roof application at or below 250 g/L are relying on pCBtF to achieve compliance. Staff proposes to create a new product category for Roof Adhesive Primer, retaining the 250 g/L VOC limit, but delaying the pCBtF prohibition for this product category. Staff also proposes to create a new product category for Roof Sealant Primer, retaining the 750 g/L VOC limit, but delaying the pCBtF prohibition for this product category. The prohibition delay would allow more time for reformulating the products without pCBtF. Staff is proposing to allow four years before the prohibition takes effect for the Roof Adhesive Primers, effective January 1, 2027, as staff identified a high percentage of the products in that category containing pCBtF. Staff is proposing to allow two years before the prohibition takes effect for the Roof Sealant Primers, January 1, 2025, as the roofing industry expressed concern regarding the timeframe it will take for product reformulation. If there is a product that can be used as both a Roof Adhesive Primer and a Roof Sealant, the most restrictive clause would apply, meaning the most stringent VOC limit is applicable. In this case, the 250 g/L VOC limit for Roof Adhesive Primers would apply. In addition, in that situation, the corresponding pCBtF prohibition effective dates for Roof Adhesive Primers would also apply.



*Weight Percent VOC Metric*

Based on meetings with various stakeholders, staff has been made aware that many products in different regulated product categories can be sold and applied as pressurized products using a propellant. For the same reason staff changed the VOC metric to a weight percent VOC for foam sealants and foam insulation, and staff considered to propose to include a weight percent VOC limit for all categories which required a manufacturer to comply with the weight percent VOC limit for all products packaged and applied using a propellant and to comply with the gram per liter (g/L) limit for all other products. However, since some stakeholders raised concerns on the conversion factor of VOC limits to weight percent, at this time, staff will only keep the weight percent limit for foam sealants and foam insulations.

## CHAPTER 3 : PROPOSED AMENDED RULE LANGUAGE

---

**PROPOSED AMENDED RULE 1168**

Staff is proposing the following amendments to Rule 1168. The proposed amendments are primarily on the revised VOC limits for several product categories or new subcategories and the prohibition of t-Bac and pCBtF use in the regulated products. Some other amendments are for rule clarification or streamlining.

**Purpose (a) and Applicability (b)**

The purpose and applicability are currently both under subdivision (a). Staff proposes to separate the applicability to a new subdivision for a more streamlined rule structure.

In addition, staff proposes to clarify the applicability by adding the stationary sources who use Regulated Products in the manufacturing process, which has been intended by have always been subject to the rule, and specifying the applicability is for Regulated Products used within the South Coast AQMD. The proposed changes would provide clarity.

Rule 1168 is applicable to:

- Regulated Products used or stored within the South Coast AQMD
- Regulated Products sold, supplied, distributed, or offered for sale for use within the South Coast AQMD
- Regulated Products manufactured within the South Coast AQMD for use within the South Coast AQMD
  - The rule is not applicable to Regulated Products that are manufactured within the South Coast AQMD but shipped outside of the South Coast AQMD for use. For example, a South Coast AQMD Facility can manufacture adhesives that exceed the Rule 1168 VOC limits provided the adhesives are not sold for use within the South Coast AQMD.
- Regulated Products used at Facility within the South Coast AQMD
  - Rule 1168 is not applicable to adhesives or sealants applied to finished goods or products outside the South Coast AQMD's jurisdiction that are shipped to the South Coast AQMD. For example, the adhesive used to manufacture a roofing shingle in Arizona does not have to meet the VOC limits in Rule 1168, but the finished roofing shingle is allowed to be sold into the South Coast AQMD.

**Definitions (c)**

The primary proposed revision to this subdivision will be the addition of several new definitions. Staff proposes to establish new categories and subcategories and VOC content limits to reflect the results of the technology assessment. Accordingly, the following definitions for those new categories and subcategories will be added:

- CPVC Welding Cement for Life Safety Systems
- Higher Viscosity CPVC Welding Cement
- One-Component Foam Sealants
- High-Pressure Two-Component Foam Sealants
- Low-Pressure Two-Component Foam Sealants

- Shingle Laminating Adhesive
- Hot Applied Modified Bitumen/Built Up Roof Adhesive
- Cut Edge Single Ply Roof Membrane Sealant
- EPDM/TPO Single Ply Roof Membrane Adhesive
- Roof Adhesive Primers
- Roof Sealant Primers

The proposed revision includes removing the definition for Energy Curable Adhesives and Sealants. This definition references ASTM Test Method 7767 Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thine Coatings Made from Them. On August 22, 2022, U.S. EPA issued a partial State Implementation Plan (SIP) disapproval for Rules 1106 and 1107 for ASTM Test Method D7767-11 which is not a U.S. EPA approved test method and cannot be used to enforce a SIP approved rule. Staff is proposing to remove this definition, which was only included as a mechanism to include the test method, to avoid a SIP disapproval.

Staff is proposing a revision to the definition for Exempt Compound. The definition references Rule 102 for exempt compound. For the purpose of this rule, the definition would include a conditional and limited exemption for Opteon 1100. The exemption would not be effective unless the conditions are met as previously discussed. In addition, the exemption is limited to two-component foam sealants applied in an industrial or professional setting.

#### **Requirements (d)**

This provision sets the requirements for VOC limits and effective dates for adhesives and sealants by categories and subcategories, as summarized in Rule 1168 Table 1 – Regulated Product Categories and VOC Limits. Staff is proposing a revision to Rule 1168 Table 1 to reflect the proposed new VOC limits and effective dates for some categories and new subcategories. Please see Table 3-1 below for a summary of the proposal as compared with the current requirements. Another proposed revision to Table 1 is to provide weight-based VOC limits for foam product categories, with a conversion of 0.1 weight percent for one gram per liter. Those foam product categories include Foam Insulation, One-Component Foam Sealants, High-Pressure Two-Component Foam Sealants, and Low-Pressure Two-Component Foam Sealants.

Additionally, staff is proposing a clarification to paragraph (d)(2) for the most restrictive clause. By way of clarification, a product subject to a specialty category with a higher-VOC limit is not subject to lower-VOC limit of the default “All Other” category. For example, All Clear, Paintable, and Immediately Water-Resistant Sealant is subject to the 380 g/L limit for this category, and it is not subject to the 300 g/L limit for All Other Roof Sealant or the 250 g/L for All Other Architectural Sealant. However, the most restrictive clause would apply to a sealant that can be used as a roofing sealant, a window sealant and a door sealant. In that instance, the lower limit of 50 g/L would apply instead of the 250 g/L roofing sealant.

Table 3-1: Summary of Table 1 Revisions

Category	Current limit effect 1/1/23	Proposed Subcategory	Staff Proposal	Effective Date
<b>Top and Trim</b>	250 g/L	N/A	250 g/L	1/1/2028
<b>Foam Sealant</b>	50 g/L	One-Component	18 %	7/1/2023
		High-Pressure Two-Component	5 %	1/1/2023
		Low-Pressure Two-Component	5 %	1/1/2023
<b>PVC Welding Cement</b>	425 g/L	N/A	425 g/L;	1/1/2023
<b>CPVC Welding Cement</b>	400 g/L	CPVC	400 g/L	1/1/2023
		CPVC – Life Saving Systems	490 g/L	Upon Adoption
		CPVC – High Viscosity CPVC Welding Cement	400 g/L	7/1/2024
<b>All Other Roofing Adhesive</b>	200 g/L	All Other Roofing Adhesives	250 g/L	Upon Adoption
		Shingle Laminating Adhesive	30 g/L	1/1/2023
		Hot Applied Modified Bitumen/Built Up Roof Adhesive	30 g/L	1/1/2023
<b>Single Ply Roof Membrane Adhesive</b>	200 g/L	EPDM/TPO Single Ply Roof Membrane Adhesive	250 g/L	Upon Adoption
		Single Ply Roof Membrane Adhesive (Except EPDM/TPO)	250 g/L	Upon Adoption
<b>All Other Roofing Sealant</b>	250 g/L	N/A	300 g/L	Upon Adoption
<b>Single Ply Roof Membrane Sealant</b>	250 g/L	Cut Edge Single Ply Roof Membrane Sealant	250 g/L	1/1/2023
		Single Ply Roof Membrane Sealant (Except Cut Edge)	250 g/L	1/1/2023
<b>Clear, Paintable, Immediately Water-Resistant Sealant</b>	250 g/L	N/A	250 g/L	1/1/2026
<b>Rubber Vulcanization Adhesive</b>	250 g/L	N/A	250 g/L	1/1/2028
<b>All Other Adhesive Primers</b>	250 g/L	Roof Adhesive Primers	250 g/L	Upon Adoption
		All Other Adhesive Primers	250 g/L	Upon Adoption

All Other Sealant Primers	750 g/L	Roof Sealant Primers	750 g/L	Upon Adoption
		All Other Sealant Primers	750 g/L	Upon Adoption

### **Reporting and Recordkeeping Requirements (e)**

Rule 1168 includes two specific recordkeeping provisions. Manufacturers, big box retailers, and distributors must retain records to support the data reported in the QERs; owners or operators of stationary sources that use adhesives or sealants to manufacture products must maintain records pursuant to Rule 109 – Recordkeeping for Volatile Organic Compound Emissions. The current rule specifies reporting and recordkeeping under separate subdivisions (f) and (d) and it is not specific that the Rule 109 only applies to stationary sources.

In addition, in paragraphs (e)(4) and (e)(6) staff proposes to clarify that big box retailers, distribution centers, and facilities using the 55-gallon exemption must maintain records to verify all required data being reported for three years and make them available upon request by the Executive Officer.

For rule streamlining and clarification, staff is proposing to combine the reporting and recordkeeping requirements under subdivision (e). As result, subdivision (e) will be amended to include the following provisions:

- General Quantity and Emission Report (QER)
- Aerosol QER
- Private labeler requirements (as related to QER)
- Big box retailer or distribution center QER
- QER reporting timeline
- Facilities Using the 55-Gallon Exemption
- Recordkeeping for QER
- Rule 109 recordkeeping
- Confidentiality of Information

Staff is also proposing to add a reporting requirement in QER for any product containing more than 0.01 weight percent of t-BAC and/or pCBtF. This reporting requirement would apply to manufactures and private labelers under subparagraphs (e)(1)(G) and (e)(2)(J). This reporting requirement would begin with the next reporting cycle in 2025. The Table below shows the QER reporting schedule adopted during the 2017 amendment:

Table 3-2: QER Reporting Schedule

Reporting Deadlines		Reported Years
Manufacturers & Private Labelers	Big Box Retailers & Distribution Centers	
<b>September 1, 2019</b>	May 1, 2019	2017, 2018
<b>September 1, 2022</b>	May 1, 2022	2020, 2021
<b>September 1, 2025</b>	May 1, 2025	2023, 2024
<b>September 1, 2030</b>	May 1, 2030	2028, 2029
<b>September 1, 2035</b>	May 1, 2035	2033, 2034
<b>September 1, 2040</b>	May 1, 2040	2038, 2039

### **Administrative Requirements (g)**

This subdivision includes labeling and QER requirements. As mentioned above, staff proposes to move the QER requirements to subdivision (e). With the reporting requirements moved, this subdivision now only includes labeling requirements; therefore, subparagraphs (g)(1)(A) through (g)(1)(G) have been promoted to paragraphs (g)(1) through (g)(7). Staff also proposes to add labeling requirements for two new CPVC subcategories, CPVC For Life Safety Systems and Higher Viscosity CPVC Welding Cement. The following statement will be required to be displayed on the container, effective July 1, 2023:

- Each container of CPVC For Life Safety Systems shall include the statement “For CPVC Life Safety System Uses Only” prominently displayed.
- Each container of Higher Viscosity CPVC Welding Cement shall include a statement prominently displayed on the label to indicate if the product is formulated for “Medium” or “Heavy” or “Extra Heavy” applications.

Staff also proposes to amend the labeling requirement to address Regulated Products subject to weight percent VOC limits; the following statement has been added:

- Effective January 1, 2026, Foam Insulation, One-Component Foam Sealants, High-Pressure Two-Component Foam Sealants, and Low-Pressure Two-Component Foam Sealants shall display the VOC as percent VOC by weight.

### **Prohibition of Sales and Use (h)**

Currently the rule prohibits the sale and use of regulated products that contain chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene and all Group II exempt solvents except volatile methyl siloxanes (VMS). Small, but non-negligible, quantities of VMS

are widely used in silicone-based sealants. The Group II exempt solvent prohibition was included during the 2017 amendments, and it included an effective date of January 1, 2019, that has passed. PAR 1168 combines the prohibition into one paragraph removing the archaic effective date.

Staff also proposes to prohibit the use of t-BAC and pCBtF under subdivision (h). This proposal is based on staff's assessment of t-BAC and pCBtF health risk and the Stationary Source Committee's direction to take a precautionary approach when considering expanding or including an exemption for any compound with a toxic endpoint. The proposal also includes a sell-through and use-through provision for products manufactured prior to the effective date of the t-BAC and pCBtF prohibition. Sell-through and use-through provision are already included in Rule 1168 when there is a VOC limit change for a Regulated Product, the amendment includes the same consideration for the new prohibitions. Based on stakeholder feedback and evaluation of reported data, staff proposed some delays of pCBtF prohibition for specialty products that rely on pCBtF and shorter sell-through and use-through periods to help offset the delays. The prohibition effective dates based on the product categories are illustrated in a new table included in the rule as below.

Table 3-3: Prohibition Effective Dates

Category	Prohibition Effective Date	Sell-through End Date	Use-through End date
pCBtF Prohibition Effective Dates			
<b>Cut Edge Single Ply Roof Membrane Sealant</b>	January 1, 2027	January 1, 2028	January 1, 2028
<b>EPDM/TPO Single Ply Roof Membrane Adhesive</b>			
<b>Roof Adhesive Primer</b>			
<b>Single Ply Roof Membrane Adhesive (Except EPDM/TPO)</b>	January 1, 2025	January 1, 2028	January 1, 2028
<b>Single Ply Roof membrane Sealants (Except Cut Edge)</b>			
<b>All Other Roof Sealants</b>			
<b>Roof Sealant Primer</b>	January 1, 2026	January 1, 2028	January 1, 2028
<b>Clear, Paintable, and Immediately Water-Resistant Sealant</b>			
<b>All Regulated Products not listed above</b>	January 1, 2024	January 1, 2027	January 1, 2028
t-BAC Prohibition Effective Dates			
<b>All Regulated Products</b>	January 1, 2024	January 1, 2027	January 1, 2028



**Exemptions (j)**

For regulated products with a VOC content no more than 20 g/L, Rule 1168 provided an exemption from subdivision (c) - the VOC emission limits and subdivision (d) - the Rule 109 recordkeeping requirements. However, Rule 1168 includes some limits as low as 20 g/L making the reason behind the 20 g/L exemption unclear and it is also unclear why 20 g/L products would be exempt from the VOC emission limits as they meet the lowest VOC limit in Rule 1168. Staff proposes to change the exemption to only apply to the Rule 109 recordkeeping provisions for the following:~~as follows:~~

- Regulated Products packaged and applied using a propellant, 2 percent VOC by weight or half the applicable VOC limit, whichever is lower;
- Low-Solids Regulated Products, 20 grams per liter material or half the applicable VOC limit, whichever is lower; and
- All other Regulated Products, 20 grams per liter, or half the applicable VOC limit, less water and less exempt compounds, whichever is lower.

In addition, staff is proposing to remove paragraph (j)(9) which allowed for the continued use of methylene chloride, a prohibited compound, in solvent welding formulation until January 1, 2021. The paragraph is being removed since that date has passed and those formulations can no longer use methylene chloride.

## CHAPTER 4 : IMPACT ASSESSMENT

---

## EMISSION INVENTORY

The emission inventory for the proposed amended rule was determined by the most recent QER available reported in September 2019 reporting the 2017 and 2018 adhesive and sealant sales into the South Coast AQMD. According to the 2017/2018 QERs, the baseline emission for the Rule 1168 is 6.2 tpd of VOC for 2017 and 2018 reporting years.

Table 4-1: 2018 Emissions

Category	2018 Emissions (tpd)
<b>Top and Trim</b>	0.2
<b>Foam Sealants</b>	0.2
<b>All Other Roof Adhesives</b>	1.6
<b>Single Ply Roof Membrane Adhesive</b>	0.3
<b>All Other Roof Sealants</b>	0.1
<b>Single Ply Roof Membrane Sealants</b>	0.01
<b>PVC Welding Cement</b>	0.9
<b>CPVC Welding Cement</b>	0.04
<b>ABS to PVC Welding Cement</b>	0.3
<b>Clear, Paintable, Immediately Water-Resistant Sealant</b>	0.03
<b>Rubber Vulcanization Adhesives</b>	0.4
<b>All Other Adhesive Primer</b>	0.01
<b>Other Rule 1168 Categories</b>	2.1
<b>Total</b>	6.2

The categories for which a technology assessment has been performed include 3.3 tpd of the total baseline emissions with the All Other Roof Adhesives accounting for 1.6 tpd of total reported VOC emissions. Approximately 1.4 tpd of All Other Roof Adhesives category were asphaltic adhesives that staff separated and created two new subcategories. In the table below there is a list of products for which a technology assessment was either required by the rule or manufacturers reached out to staff to indicate there were issues with the upcoming VOC limits, with the total sales and SWA.

Table 4-2: Products in Technology Assessment and Products with Proposed VOC Limit Revisions

Emission Source	2017		2018	
	Total Sales (gallons)	SWA (g/L)	Total Sales (gallons)	SWA (g/L)
<b>Top and Trim</b>	75,000		424	60,000 337
<b>Foam Sealant</b>	107,000		154	105,000 148
<b>All Other Roof Adhesives<sup>1,2</sup></b>	80,000		188	80,000 188
<b>Single Ply Roof Membrane Adhesive</b>	230,000		120	270,000 125
<b>All Other Roof Sealants<sup>2</sup></b>	45,000		198	45,000 198
<b>Single Ply Roof Membrane Sealants</b>	13,000		81	13,000 82
<b>PVC Welding Cement</b>	155,000		480	155,000 480
<b>CPVC Welding Cement</b>	6,700		383	8,200 469
<b>ABS To PVC Welding Cement</b>	1,800		377	2,000 390
<b>Clear, Paintable, Immediately Water-Resistant Sealant</b>	8,700		420	6,800 322
<b>Rubber Vulcanization Adhesives</b>	Protected Data		653	Protected Data 710
<b>Total Sales in Table</b>	733,500			747,400
<b>Total Sales of Regulated Products</b>	<b>14,000,000</b>			<b>16,000,000</b>

<sup>1</sup> Non-asphaltic All Other Roof Adhesives

<sup>2</sup> Same data reported for 2017 and 2018

## CONTROL TECHNOLOGY

Compliance with PAR 1168 is expected to be met with manufacturers reformulating regulated products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The manufacturers will have flexibility to use any compliant alternative reformulation in order for their product to meet the VOC limits in PAR 1168. Physical modifications to or new installations of manufacturing equipment, including the installation of control equipment, would not be expected to be needed in order to reformulate products. For certain categories, there are existing products that meet the proposed lower VOC content limits, so reformulation is practicable. Finally, some end-users can comply with the rule using alternative options such as the 55-gallon per year exemption; control devices, such as emission collection systems; or an Alternative Emission Control Plan.

## EMISSION REDUCTIONS

Staff is not projecting any overall emission reductions resulting from this rule amendment. Based on the technology assessment, which includes staff discussions with stakeholders and analyzing the QER data, staff is proposing to revise some of the proposed 2017 VOC limits or delay effective dates for VOC limits. However, the change was not the same for all impacted categories; the 2017 proposed limits will remain unchanged for some categories, while for other categories, staff proposed a delayed effective date. For some categories the 2017 proposed limits were reverted back to the pre-2017 limits. Due to the proposed pCBtF and t-BAc prohibition, VOC limits for roofing products have been reverted to the pre-2017 limits, with the exception of Single Ply Roof Membrane Sealants. The prohibition affected the ability of manufacturers to meet the 2017 proposed VOC limits.

For solvent cement categories including PVC, CPVC, CPVC for Life Safety Systems, Higher Viscosity CPVC, staff proposed to maintain the 2017 proposed limits for PVC, CPVC, and Higher Viscosity CPVC, but the limit for the CPVC for Life Safety Systems will be at the pre-2017 proposed limits. For Foam Sealants and Top and Trim Adhesives there would be some emission reductions. In the case of Top and Trim Adhesives, since 2003, the VOC limit reduction to 250 g/L was delayed twice to allow manufacturers to reformulate. Staff proposed to allow five years for reformulations and the 250 g/L will go into effect on January 1, 2028. The delayed and foregone emissions and emission reductions are presented in the table below.

Table 4-3: Proposed VOC Limits, Delayed and Foregone Emissions, and Emission Reductions

	VOC limit prior to 2017 amendment	2017 Proposed VOC limit Effective Jan 2023	2022 Proposed VOC limits	Proposed Effective Date	Delayed Emission Reductions (tpd)	Foregone Emission Reductions (tpd)
<b>Top and Trim Adhesives</b>	540	250	250	1/1/2028	0.1	0
<b>One-Component Foam Sealants</b>	250	50	18 %	7/1/2023	0.01	0.12
<b>High-Pressure Two-Component Sealant</b>	250	50	5%	1/1/2023	0	0
<b>Low-Pressure Two-Component Sealant</b>	250	50	5%	1/1/2023	0	0
<b>All Other Roof Adhesives</b>	250	200	250	Upon Adoption	0	0.03
<b>SHINGLE LAMINATING Adhesive</b>	250	250	30	1/1/2023	0	0
<b>Hot Applied Modified Bitumen/Built Up Roof Adhesive</b>	250	250	30	1/1/2023	0	0

	VOC limit prior to 2017 amendment	2017 Proposed VOC limit Effective Jan 2023	2022 Proposed VOC limits	Proposed Effective Date	Delayed Emission Reductions (tpd)	Foregone Emission Reductions (tpd)
<b>Single Ply Roof Membrane Adhesives</b>	250	200	250	Upon Adoption	0	0.07
<b>All Other Roof Sealants</b>	300	250	300	Upon Adoption	0	0.05
<b>Single Ply Roof Membrane Sealants</b>	450	250	250	1/1/2023	0	0
<b>PVC Welding Cement</b>	510	425	425	1/1/2023	0	0
<b>CPVC Welding Cement</b>	490	400	400	1/1/2023	0	0
<b>CPVC – Life Safety Systems</b>	490	400	490	N/A	0	0.01
<b>Higher Viscosity CPVC</b>	490	400	400	7/1/2024	0.01	0
<b>Clear, Paintable, Immediately Water-Resistant Sealant</b>	380	250	250	1/1/2026	0.007	<u>0</u>
<b>Rubber Vulcanization Adhesive</b>	850	250	250	1/1/2028	0.29	<u>0</u>
<b>Total</b>					0.42	0.28

The delayed emission reductions and foregone emissions reductions from the proposed amendments will be 0.42 tpd and 0.28 tpd, respectively.

## COST ASSESSMENT

Cost effectiveness analysis is not required for PAR 1168 as the proposed VOC limits either retains, delays, or increases the VOC limits, except for two roofing subcategories with a lower proposed limit. Staff analysis has determined that all reported products of those two new roofing subcategories are meeting the proposed limit.

Stakeholders contend that prohibiting pCBtF may trigger product reformulation for certain categories and entail additional cost. The primary impact would be on four roofing categories as discussed previously, some adhesive primers primarily used for roofing, and some Clear, Paintable, And Immediately Water-Resistant Sealants. Staff is proposing to retain the current emission limit for Single Ply Roof Membrane Sealants and revert the emission limits for other three roofing categories back to the pre-2017 limits. For Single Ply Roof Membrane Sealants, two out of 37 products were found to contain pCBtF. Staff conducted an internet search for the market price of Single Ply Roof Membrane Sealants and found that the cost of this product with pCBtF is not higher than some other products at similar VOC emission level but containing no pCBtF. As

discussed in Chapter 3, staff identified three specialty products that are relying on pCBtF to meet the limits and is proposing to carve out subcategories to allow for longer time to reformulate. Staff also estimated costs reformation costs for Clear, Paintable, And Immediately Water Resistant Sealants.

The number of products that contain pCBtF are shown in the table below.

Table 4-4: Categories and number of products that contain pCBtF

Category	# of products contain pCBtF
Single Ply Roof Membrane Adhesive including EPDM/TPO Single Ply Roof Membrane Adhesive	11
Single Ply Roof Membrane Sealant including Cut Edge Single Ply Roof Membrane Sealant	2
All Other Roof Adhesives	0
All Other Roof Sealants	2
All Other Adhesive Primer	3
Clear, Paintable, Immediately Water-Resistant Sealant	3
Total Roofing Products	18
Total Products	21

## SOCIOECONOMIC ASSESSMENT

Health and Safety Code Section 40440.8 requires a socioeconomic impact assessment for proposed and amended rules resulting in significant impacts to air quality or emission limitations. This rule amendment will result in the elimination of two toxic solvents, t-BAC and pCBtF, and there are no VOC emission reductions; therefore, it does not include a cost effectiveness assessment This assessment shall include affected industries and a range of probable costs.

### *AFFECTED INDUSTRIES*

The proposed amendments to Rule 1168 would affect approximately 76 adhesive and sealant manufacturers, of which 15 are manufacturing the products within the South Coast Air Basin. The majority of the affected facilities belong to the industries of Asphalt Shingle and Coating Materials (NAICS 324122) Adhesive Manufacturing (NAICS 325520), and Industrial Building Construction (NAICS 236210). Out of the 15 affected facilities, ten are in Los Angeles County, two are in Orange County, and one is located in San Bernardino County.

PAR 1168 would also affect the intermediate users of adhesive and sealant products. The sectors that make extensive use of products subject to the proposed amendments mainly belong to Construction (NAICS 23), Durable and Nondurable Manufacturing (NAICS 33 and 31-32, respectively) as presented in Table 4-5. More than 99 percent of these affected sources are area sources for which staff has no detailed information.

Table 4-5: Potentially Affected Intermediate Users by Industry

<b>Construction (NAICS 23)</b> Industrial Building Construction (NAICS 236210) New Multifamily Housing Construction (NAICS 236116) Commercial and Institutional Building Construction (NAICS 236220) New Single-Family Housing Construction (NAICS 236115) Residential Remodelers (NAICS 236118) Oil and Gas Pipeline and Related Structures Construction (NAICS 237120) Water and Sewer Line and Related Structures Construction (NAICS 237110) Roofing Contractors (NAICS 238160) Siding Contractors (NAICS 238170) Tile and Terrazzo Contractors (NAICS 238340) Drywall and Insulation Contractors (NAICS 238310) Flooring Contractors (NAICS 238330) Glass and Glazing Contractors (NAICS 238150) Plumbing, Heating, and Air-Conditioning Contractors (NAICS 238220)
<b>Nondurable Manufacturing (NAICS 31-32)</b> Footwear Manufacturing (NAICS 316210) Hardwood Veneer and Plywood Manufacturing (NAICS 321211) Manufactured Home (Mobile Home) Manufacturing (NAICS 321991) Other Millwork (including Flooring) (NAICS 321918) Wood Container and Pallet Manufacturing (NAICS 321920) Wood Window and Door Manufacturing (NAICS 321911) Asphalt Shingle and Coating Materials Manufacturing (NAICS 324122 and 325520) Adhesive Manufacturing (NAICS 325520). All Other Rubber Product Manufacturing (NAICS 326299) Polystyrene Foam Product Manufacturing (NAICS 326140) Rubber Product Manufacturing for Mechanical Use (NAICS 326291) Tire Retreading (NAICS 326212) Urethane and Other Foam Product Manufacturing (NAICS 326150)
<b>Durable Manufacturing (NAICS 33)</b> Refrigeration Equipment Manufacturing (NAICS 333415) Custom Architectural Woodwork and Millwork Manufacturing (NAICS 337212) Household Furniture (except Wood and Metal) Manufacturing (NAICS 337125) Motor Vehicle Seating and Interior Trim Manufacturing (NAICS 336360) Office Furniture (except Wood) Manufacturing (NAICS 337214) Showcase, Partition, Shelving, and Locker Manufacturing (NAICS 337215) Surgical Appliance and Supplies Manufacturing (NAICS 339113) Wood Kitchen Cabinet and Countertop Manufacturing (NAICS 337110)

Lastly, if the additional costs associated with the proposed amendments are eventually passed on to end-users of PAR 1168 applicable products would potentially affect the general public (consumers).



### *Compliance Cost*

The purpose of PAR 1168 is to adjust some VOC limits and compliance dates based on the technology assessments and the proposed prohibition of t-BAC and pCBtF. For the purpose of this analysis, staff quantified the impacts of the additional compliance costs and potential savings associated with the pCBtF prohibition. The costs of VOC reductions that were included in the 2017 amendment are not included as they were assessed as part of the last amendment. Staff also did not assess any costs associated with delayed compliance dates.

### *Potential Cost Savings*

The estimated cost savings are due to the high cost of pCBtF; replacement solvents will be less expensive. Staff conducted a cost assessment of regulated products with and without pCBtF and found the non-pCBtF formulations to be between \$20 to \$40 cheaper than products formulated with pCBtF for each gallon. In this case, formulating away from pCBtF will result potential cost savings. The only exceptions are clear, paintable, immediately water-resistant sealants where the newer, low-VOC products are more expensive. For those products, the cost of reformulation is reflected in the price and cost savings are not included in the potential cost saving assessment. This comports with staff's cost assessments from previous VOC rule amendments where manufacturers stated the high cost of pCBtF was a barrier to reformulation.

Staff estimated the cost saving based on a conservative estimate of \$15 saved per gallon reformulated. Based on manufacturer feedback on products sold into the South Coast AQMD that are formulated with pCBtF, the total estimated gallons that will have to be reformulated are approximately 400,000 gallons, not including the clear, paintable, immediately water-resistant sealants. That would result in a cost saving of approximately \$738,000 over ten years.

### *Reformulation Costs Incurred*

Cost effectiveness calculations for VOC rule amendments typically estimates costs incurred based on the incremental increase of the reformulated products, but as mentioned above, all products staff identified as formulated with pCBtF were more expensive than the non-pCBtF products. Therefore, that analysis only shows cost savings. However, manufacturers will incur cost for product reformulations. Staff will estimate the reformulation costs based on an estimated 20 percent cost increase from the cost of existing products and multiple that times the volume of products that must be reformulated. A 20 percent cost increase has been used for past VOC rule amendments to estimate reformulation costs. Staff estimates the reformulation costs at \$515,000 over ten years.

In addition to the reformulation costs, there are also third-party testing costs associated with roofing adhesives and sealants. The majority of products staff identified as containing pCBtF are roofing products; therefore, staff is including third-party testing costs in the assessment. Based on manufacturer feedback, this testing can cost up to \$150,000 per product. Staff identified approximately 20 roofing products that are formulated with pCBtF sold into or within the South Coast AQMD resulting in approximately \$400,000 cost incurred annualized over 10 years.

The last cost staff evaluated was for clear paintable and immediately water-resistant sealants. For these products, staff did identify higher costs for the reformulated products. The product volumes

are protected data was less than three manufacturers reported selling product containing pCBtF so staff will only report the estimated cost incurred, which is \$220,000 annualized over 10 years.

#### *Reporting Costs*

In addition to reformulation and testing costs, minor additional costs will be incurred for the new requirement that manufacturers must include the weight percent pCBtF and t-BAc in the reported regulated products. Costs associated with the QERs were evaluated during the 2017 amendment. The additional reporting requirement will not add a significant cost to the facilities. Staff has not identified a significant number of products formulated with either pCBtF or t-BAc so the impacts should be minimal.

#### *Overall Cost of Rule Amendment*

Based on the estimated cost savings of approximately \$738,000 and the costs incurred of \$735,000 for roofing reformulation, \$220,000 for clear, paintable, and immediately water-resistant sealants and \$400,000 for third party testing for roofing products, the overall cost of the rule amendment is \$397,000.

#### *Socioeconomic Impacts of CEQA Alternatives*

Four alternatives to PAR 1168 were developed for the CEQA analysis in the Subsequent Environmental Assessment (SEA) prepared for PAR 1168: Alternative A - No Project; Alternative B - More Stringent Proposed Project; Alternative C - Less Stringent Proposed Project; and Alternative D - Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168. This section provides a summary of each alternative as well as an assessment of the possible socioeconomic impacts resulting from these alternatives.

##### Alternative A – No Project

CEQA requires the specific alternative of “No Project” to be evaluated. A “No Project” Alternative consists of what would occur if the proposed project was not approved; in this case, not adopting PAR 1168. Under Alternative A, manufacturers would be allowed to continue to formulate adhesives and sealants for sale and use within South Coast AQMD’s jurisdiction that meet the VOC limits established in the October 2017 version of Rule 1168. However, manufacturers of certain adhesives and sealants have indicated that they need more time to develop compliant products or cannot meet the applicable VOC limits by the January 1, 2023 effective date due to technological limitations, creating potential compliance issues, and likely resulting in the originally projected VOC emission reductions not being fully achieved. Moreover, under Alternative A, t-BAc and pCBtF would continue to be classified as VOC-exempt solvents and as such, could continue to be used in formulating adhesives and sealants subject to PAR 1168. Since there would be no additional reformulations or t-BAc and pCBtF prohibition in this alternative, there would be no cost associated with this proposal.

##### Alternative B – More stringent Proposed Project

PAR 1168 proposes revisions to the VOC limits and corresponding effective dates for certain categories of adhesives and sealants based on the technology assessment that was conducted. Alternative B proposes the same VOC limits but those limits would go into effect ~~need to occur~~ six months earlier than the proposed project for the categories of One-Component Foam Sealant and Higher Viscosity CPVC Welding Cement while ~~the effective date to meet~~ the proposed VOC limits for Top and Trim Adhesive, Clear, Paintable, Immediately Water-Resistant Sealant, and

Rubber Vulcanization Adhesive would go into effect ~~need to occur~~ twelve months earlier than the proposed project.

A 20 percent cost increase is used for estimating Alternative B reformulation costs as compared with the proposed project. Staff estimates the reformulation costs at \$850,000 over 10 years. With no change to other cost assumptions, the overall cost of Alternative B is \$510,000. However, the feasibility may be compromised due to the shorter timeline for the manufacturers to reformulate in Alternative B.

#### Alternative C – Less Stringent Proposed Project

Alternative C proposes less stringent requirements. Under Alternative C, the categories of Top and Trim Adhesive, One-Component Foam Sealant, Higher Viscosity CPVC Welding Cement, Clear, Paintable, Immediately Water-Resistant Sealant, and Rubber Vulcanization Adhesive would have an additional 12 months to meet the proposed VOC limits in PAR 1168.

A 10 percent cost decrease is used for estimating Alternative C reformulation costs as compared with the proposed project. Staff estimates the reformulation costs at \$640,000 over ten years. With no change to other cost assumptions, the overall cost of Alternative C is \$300,000.

#### Alternative D – Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168

Alternative D would not change the January 1, 2023 effective VOC limits in the current rule for the following categories: One-Component Foam Sealant, Single Ply Roof Membrane Adhesive (including both subcategories with and without EPDM/TPO), All Other Roof Sealants, All Other Roof Adhesives, and CPVC Welding Cement for Life Safety Systems. However, under Alternative D, instead of January 1, 2023, the effective date would be postponed by seven years to January 1, 2030, providing industries with sufficient additional time to meet the VOC limits.

Compared with the proposed project, Alternative D would have more stringent VOC limits and less stringent effective dates for One-Component Foam Sealant, Single Ply Roof Membrane Adhesive (including both subcategories with and without EPDM/TPO), All Other Roof Sealants, All Other Roof Adhesives, and CPVC Welding Cement for Life Safety Systems. There would be more cost for the more stringent requirements and less cost for the less stringent requirements. For the roofing products, staff assumes there is no cost change from the proposed project. However, the feasibility of the achieving the more stringent VOC limits without the use of pCBtF as proposed by Alternative D for some products could be compromised as compared with the proposed project.

Regarding the CPVC Welding Cement for Life Safety Systems, keeping the January 1, 2023 effective date for the VOC limit established in the 2017 amendment, ~~VOC limit~~ would result in additional costs as those products require reformulation and third-party testing. Staff estimates approximately 20 percent of the sales volume reported in the QERs could be sold for use on life safety systems. Using the same assumption as a 20 percent increase in the cost of products sold as a surrogate for reformulation costs, staff estimates reformulation would cost approximately \$7,000 and third-party testing would cost approximately \$70,000 annualized over 10 years. Alternative D could cost an additional \$77,000 annualized over 10 years.

Table 4-6: Summary of Socioeconomic Impacts of CEQA Alternatives

	Reformulation Cost	Raw Material Savings	Third Party Testing	Total
<b>Staff Proposal</b>	\$710,000	\$(740,000)	\$400,000	\$370,000
<b>Alternative A</b>	\$710,000	\$(740,000)	\$400,000	\$370,000
<b>Alternative B</b>	\$850,000	\$(740,000)	\$400,000	\$510,000
<b>Alternative C</b>	\$640,000	\$(740,000)	\$400,000	\$300,000
<b>Alternative D</b>	\$717,000	(740,000)	\$470,000	\$447,000

### CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to the California Environmental Quality Act (CEQA) and South Coast AQMD's Certified Regulatory Program (Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(l); codified in South Coast AQMD Rule 110), the South Coast AQMD, as lead agency for PAR 1168, prepared a Subsequent Environmental Assessment (SEA) for the proposed project. The SEA is a substitute CEQA document prepared pursuant to CEQA Guidelines Section 15252 and in lieu of a Subsequent Environmental Impact Report. The SEA tiers off of the October 2017 Final Environmental Assessment (EA) for the October 2017 amendments to Rule 1168,<sup>4</sup> as allowed by CEQA Guidelines Sections 15152, 15162, 15168 and 15385. The Draft SEA was released for a 45-day public review and comment period to provide public agencies and the public an opportunity to obtain, review, and comment on the environmental analysis. No comment letters were received during the comment period. ~~Comments made relative to the analysis in the Draft SEA and responses to the comments will be included in the Final SEA.~~

### DRAFT FINDINGS UNDER THE HEALTH AND SAFETY CODE

Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the South Coast AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the hearing. The draft findings are as follows:

**Necessity** – Based on the technology assessment and the Governing Board direction to address the toxic risk of exempt compounds t-BAC and pCBtF, PAR 1168 is necessary to delay or amend the effective dates of certain VOC limits.

**Authority** - The South Coast AQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from Health and Safety Code Sections 39002, 40000, 40001, 40440, 40702 and 41508.

<sup>4</sup> South Coast AQMD, 2017. Final Environmental Assessment (EA) for Proposed Amended Rule (PAR) 1168 – Adhesive and Sealant Applications, SCH No. 2017081031. <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1168/draft-subsequent-environmental-assessment---sea.pdf?sfvrsn=8>

**Clarity** –PAR 1168 is written and displayed so that the meaning can be easily understood by persons directly affected by them.

**Consistency** – PAR 1168 is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, federal or state regulations.

**Non-Duplication** - PAR 1168 does not impose the same requirement as any existing state or federal regulation, and the proposed amendments are necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD.

**Reference** - In amending this rule, the South Coast AQMD Governing Board references the following statutes which the South Coast AQMD hereby implements, interprets or makes specific: Health and Safety Code Sections 40001, 40440, and 40702.

## COMPARATIVE ANALYSIS

Health and Safety Code Section 40727.2 requires a written analysis comparing the proposed amended rule with existing federal and South Coast AQMD regulations. There are no other existing or proposed South Coast AQMD rules that directly apply to the same source type (adhesive and sealant applications). The federal government has suggested standards in the form of a Control Techniques Guideline for Miscellaneous Industrial adhesives but has no regulatory requirements. The CARB CPR regulates certain consumer product adhesives and sealants throughout the state of California and the OTC has a Model Rule that applies to adhesives and sealants.

Table 4-7: Comparative analysis

	PAR 1168	CARB Consumer Products Regulation	U.S. EPA Control Techniques Guideline for Miscellaneous Industrial Adhesives	Ozone Transport Commission Model Rule for Consumer Products
<b>Applicability</b>	All use of adhesives, adhesive primers, sealants, or sealant primers excluding consumer and institutional use where the units of product, less packaging, weigh one pound or less and consist of less than 16 fluid ounces, and where there is an applicable VOC limit in the California Air Resources Board (CARB) Consumer Products Regulation.	Adhesives and sealants where the units of product, less packaging, weigh one pound or less and consist of 16 fluid ounces or less, that are sold for consumer and institutional use.	Voluntary guidelines to states to develop regulation to address adhesives used for industrial operations.	Sale and manufacture of consumer adhesives, adhesive primers, sealants, and sealant primers; and use restrictions that apply primarily to commercial/industrial applications.
<b>Requirements</b>	<ul style="list-style-type: none"> <li>• VOC limits for adhesives used in architectural applications, industrial operations, and substrate specific applications. VOC limits for sealants used in architectural applications, roadway, and other applications. VOC limits for adhesive and sealant primers</li> </ul>	<ul style="list-style-type: none"> <li>• VOC limits for adhesives and sealants sold as consumer products for personal or institutional use</li> <li>• Three year sell through for products on shelf prior to effective date of rule</li> <li>• Most restrictive clause for products subject to multiple VOC limits</li> </ul>	<ul style="list-style-type: none"> <li>• VOC limits for adhesives, and adhesive primers used in industrial operations</li> <li>• Minimum transfer efficiency requirements</li> <li>• Minimum air pollution capture and control efficiency of 85%</li> <li>• Trash and debris containing VOC must be in closed containers</li> </ul>	<ul style="list-style-type: none"> <li>• VOC limits for adhesives used in architectural applications, industrial operations, and substrate specific applications. VOC limits for sealants used in architectural applications, roadway, and other applications. VOC limits for adhesive and sealant primers</li> <li>• Limit on VOC content of solvents used for cleaning,</li> </ul>

PAR 1168		CARB Consumer Products Regulation	U.S. EPA Control Techniques Guideline for Miscellaneous Industrial Adhesives	Ozone Transport Commission Model Rule for Consumer Products
	<ul style="list-style-type: none"> <li>• Most restrictive clause for products subject to multiple VOC limits</li> <li>• Sell through for products on shelf prior to effective date of rule</li> <li>• Trash and debris containing VOC must be in closed containers</li> <li>• Minimum transfer efficiency requirements</li> <li>• Minimum air pollution capture efficiency of 90%; minimum air pollution reduction efficiency of 95%</li> <li>• Alternative Emission Control Plan</li> <li>• Storage restrictions for noncompliant products</li> <li>• Containers used for mixing shall be closed except when in use</li> </ul>		<ul style="list-style-type: none"> <li>• Containers used for mixing shall be closed except when in use</li> <li>• Closed containers for cleaning solvent storage</li> </ul>	surface preparation or stripping <ul style="list-style-type: none"> <li>• VOC content limit for solvents used to clean application equipment and requirements to clean in enclosed cleaning system</li> <li>• Minimum air pollution capture and control efficiency of 85%</li> <li>• Trash and debris containing VOC must be in closed containers</li> </ul>
<b>Recordkeeping</b>	Daily recordkeeping	None	None	Monthly recordkeeping
<b>Administrative</b>	<ul style="list-style-type: none"> <li>• Container labeling of VOC content and date of manufacture</li> <li>• Sales reporting from manufacturers, private labelers, big box retailers, and distribution centers</li> <li>• Annual reporting of sales utilizing 55-gallon per year exemption</li> </ul>	<ul style="list-style-type: none"> <li>• Container labeling of VOC content and date of manufacture</li> <li>• Sales reporting from manufacturers</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Container labeling of VOC content</li> </ul>

PAR 1168		CARB Consumer Products Regulation	U.S. EPA Control Techniques Guideline for Miscellaneous Industrial Adhesives	Ozone Transport Commission Model Rule for Consumer Products
<b>Prohibitions</b>	<ul style="list-style-type: none"> <li>• Prohibition of sale of products that do not meet VOC content limit</li> <li>• Prohibition of sale of products containing certain chlorinated compounds</li> <li>• Prohibition of sale of products containing certain exempt compounds</li> <li>• Prohibition of sale of products containing pCBtF and t-BAC</li> </ul>	<ul style="list-style-type: none"> <li>• Prohibition of sale of products that do not meet VOC content limit</li> <li>• Prohibition of sale of products containing certain chlorinated compounds</li> <li>• Prohibition of sales of adhesives with any chemical compound that has a Global Warming Potential of 150 or greater</li> </ul>	<ul style="list-style-type: none"> <li>• No atomization of cleaning solvent</li> </ul>	<ul style="list-style-type: none"> <li>• Prohibition of sale of products that do not meet VOC content limit</li> </ul>
<b>Exemptions</b>	<ul style="list-style-type: none"> <li>• Exemption for adhesives and sealants subject to other source specific rules</li> <li>• Regulated Products packaged and applied using a propellant, 2 percent VOC by weight or half the applicable VOC limit, whichever is lower,</li> <li>• Low-solids Regulated Products, 20 grams per liter material or half the applicable VOC limit, whichever is lower</li> <li>• Record keeping exemption (end-user) for products that contain less than 20 g/L VOC content or half the applicable VOC limit, less water and less exempt compounds, whichever is lower</li> <li>• Exemption for containers less than one ounce</li> <li>• Rule does not apply to use in research and development</li> </ul>	<ul style="list-style-type: none"> <li>• Exemption for solvents defined as low vapor pressure</li> <li>• Exemption for containers less than one ounce</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Rule does not apply to use in research and development</li> <li>• Rule does not apply to consumer products used for personal or institutional use if regulated by another agency</li> <li>• Exemption for products that contain less than 20 g/L VOC content</li> <li>• Exemption for contact adhesives sold in volumes of one gallon or less</li> <li>• Exemption for certain miscellaneous uses</li> <li>• Rule does not apply to uses where annual emissions are less than 200 pounds per year</li> <li>• Exemption for products when used in quantities of 55 gallons per year or less</li> </ul>



PAR 1168	CARB Consumer Products Regulation	U.S. EPA Control Techniques Guideline for Miscellaneous Industrial Adhesives	Ozone Transport Commission Model Rule for Consumer Products
<ul style="list-style-type: none"><li>• Exemption for products in certain categories when used in quantities of 55 gallons per year or less</li><li>• Exemption for parade floats</li><li>• Rule does not apply to consumer products used for personal or institutional use if regulated by CARB Consumer Product Regulation</li><li>• Exemption for certain miscellaneous uses</li></ul>			

## APPENDIX A: RESPONSE TO COMMENTS

## PUBLIC WORKSHOP COMMENTS

Staff held a Public Workshop on September 1, 2022, to provide a summary of PAR 1168. The following is a summary of the comments received on PAR 1168 and staff's responses.

### ***Commenter #1: Jordan Blank – GreenChem Industries LLC***

The commenter expressed concerns on the prohibition of pCBtF and that it could potentially increase the use of water-based products that can cause challenges such as run-off and water contamination.

#### ***Staff Response to Commenter #1:***

Staff understands some products will be impacted by the prohibition; however, the health benefit of removing toxic compounds would outweigh the impact. The toxicity of pCBtF has been assessed by OEHHA and the cancer potency factor for this compound is higher than Rule 102 Group II compounds such as t-BAC, DMC, and Perc. Based on the Governing Board's direction to prioritize toxicity over VOC reductions, staff proposed to prohibit the use of pCBtF.

Staff is proposing to maintain several of the existing VOC limits that will assist with the transition away from pCBtF and t-BAC and manufacturers have not indicated product will be reformulated to waterborne chemistries. South Coast AQMD is technology neutral and is not prescriptive for how manufacturers achieve VOC limits. There have been many successful reformulations using waterborne chemistries, non-toxic exempt solvent-based chemistries, high solids formulations, and reactive chemistries,

### ***Commenter #2: Rita Loof – RadTech***

The commenter asked staff to revert the initially proposed exemption 5 g/L level back to the existing 20 g/L level since current test methods are not able to detect VOC levels of less than 20 g/L. In addition, the rule has many limits that remain relatively high so the exemption should not be dictated by the lowest VOC limits in the rule.

#### ***Staff Response to Commenter #2:***

While staff does not agree with the characterization of the test method uncertainty, staff does appreciate the suggestion to consider retaining the 20 g/L VOC exemption level for those higher-VOC categories and not base the exemption solely on a 5 g/L level. Based on this suggestion Staff revised the proposal to change the threshold to 20 g/L (or 2%), or half the applicable limit, whichever is lower; therefore, a product with a 20 g/L limit would be exempt for this recordkeeping requirement, only if its VOC emission is at or lower than 10 g/L and products up to 40 g/L could use this exemption if the emission can be at or lower than half the applicable limit

### ***Commenter #3: Doug Raymond – on behalf of Chemours***

The commenter thanked staff for including the weight percent metric for two-component foams and asked staff to consider including that for all products. Mr. Raymond thanked staff for considering a limited exemption for Opteon 1100.

#### ***Staff Response to Commenter #3:***

Staff agrees with the suggestion for including a weight percent metric for all Rule 1168 categories for products packaged and applied using a propellant, however some stakeholders raised concerns

on the conversion factor on VOC limits to weight percent, so staff is not considering to include weight percent for all products at this time.

Regarding Opteon 1100, since the exemption of Opteon 1100 for Rule 1168 would help expand the product options and relieve supply issues, staff proposed to include a conditional, limited exemption for Opteon 1100 based on OEHHHA assessment. The condition is based on a review by OEHHHA that does not find Opteon 1100 is a carcinogen and finds it is less toxic than the HFO it will replace. The exemption will also be limited to two-component foam sealants used in an industrial or professional setting by workers trained with procedures and guidelines to reduce potential risk of exposure. Staff is concerned with including any VOC exemption without a toxic assessment by OEHHHA; hence, recommends a limited and conditional exemption as a balanced approach.

***Commenter #4: Neema Toolaabee – DAP***

Commenter asked staff to allow reporting foam products in the QERs under aerosol QER section since they will be reported by weight percent in future.

***Staff Response to Commenter #4:***

Staff agreed with this comment and amended rule language to make it clear that foam products packaged and applied using a propellant shall be reported as percent VOC by weight. Staff will also reflect that change in the form manufacturers use to submit their QERs.

***Commenter #5: Dr. Joseph Lyou – President & CEO at Coalition for Clean Air***

Commenter supported staff's efforts on prohibiting toxic compounds which was also a concern during 2017 amendment. The commenter asked staff to consider including cost avoided due to health benefits from prohibiting toxic compounds in the socioeconomic report.

***Staff Response to Commenter #5:***

Staff appreciates the commenters support and agrees evaluating the health care costs avoided would be a valuable study. Due to limited resources and the limited timeline due to the upcoming VOC limits that cannot be achieved at this time, staff has not conducted a health benefits analysis.

***Commenter #6: Mark Abramowitz – Community Environmental Services***

Commenter expressed concerns on the limited exemption for Opteon 1100 and asked staff not to allow exemption for Opteon 1100 due to potential toxicity concerns of HFOs.

***Staff Response to Commenter #6:***

Staff understands the commenters concerns for the proposed Opteon 1100 exemption. Staff is proposing to condition the exemption on an evaluation by OEHHHA's. Staff is also proposing to limit the exemption to only two-component foam sealants used in a professional setting. Staff feels this limited and conditional approach is health protective and follows the Governing Board's directive to take the precautionary approach in regard to potential exempt compounds.

***Commenter #7: Heather Estes – GAF***

The commenter thanked staff for considering the stakeholders concerns and reverting back the proposed exemption margin limit from reporting requirements to 20 g/L since current test methods are not able to detect VOC levels of less than 20 g/L.

*Staff Response to Commenter #7:*

Please read the staff response to commenter #2.

*Commenter #8: Katy Wolf – Consultant*

The commenter supported staff on pCBtF and t-BAC prohibition and suggested to include health benefits in the socioeconomic report.

*Staff Response to Commenter #8:*

Please read staff response to commenter #5.

*Commenter #9: Bill Almond – The Adhesive and Sealant Council*

The commenter asked staff to clarify test method 24 is not the proper VOC test method for foam sealants and thanked staff for updating the proposed limit for one-component foams based on stakeholder's input.

*Staff Response to Commenter #9:*

Staff agrees that U.S. EPA Reference Method 24 is not the appropriate test method to measure the VOC content of foam sealants. Staff developed a VOC Guidance Document, with the assistance of the manufacturers, to clarify what test method is appropriate for each type of Regulated Product subject to Rule 1168. The Guidance Document includes a discussion of the test methods for foams and a flow chart for the most appropriate test method. At this time, the South Coast AQMD laboratory is developing a test method for compliance determinations, but that work is not complete. When there is no appropriate test method, South Coast AQMD relies on the manufacturer's formulation data to confirm the VOC content of Regulated Products. The change in metric from g/L to weight percent will simplify the VOC calculation from the product formulation and will simplify the test method development for foam products.

## COMMENT LETTERS

*Comment Letter #1*

**Sashco, Inc.**  
10300 East 107<sup>th</sup> Place  
Brighton, CO 80601 7176  
Phone: 303-286-7271  
Fax: 303-286-0400

August 19, 2022

Mr. Ben Benoit  
South Coast Air Quality Management District  
21865 Copley Dr.  
Diamond Bar, CA 91765

Dear Mr. Benoit,

It has been publicly stated many times in many forums that the goal of SCAQMD is not to regulate products out of the market. With the ban of PCBTF and adoption of a 250g/L VOC limit, clear, paintable, and immediately water-resistant sealants are being regulated out the market. Given the clearly stated goal of SCAQMD staff in this situation, it is clear that action needs to be taken to ensure the mutual goal can be achieved.

Established precedent from SCAQMD has always been to gather information (public and otherwise), prior to making a major change of such significant impact to the industry. Again, historically, SCAQMD has responded to industry input by providing adequate time for industry to adjust to new regulations and/or new restrictions. This did not occur in this instance – the recently announced PCBTF ban. The process was not followed. Industry has neither been provided adequate time to review the ban prior to adoption, nor necessary time to modify products.

The rule 1168 update adopted in Oct 2017 created the new category – “Clear, Paintable, And Immediately Water-Resistant Sealants” – giving industry 5 years to develop a formula that reduces VOC content from 380 to 250 g/L.

As Sashco has communicated to the SCAQMD staff previously and again most recently during the conference call on 3/23/2022, Sashco products in the clear, paintable, and immediately water-resistant category are formulated in a mixture of aliphatic and aromatic solvents. This solvent mixture is required to dissolve the SEBS (styrene-ethylene/butylene-styrene triblock rubber), a key component of this technology. To meet the lower 250 g/L VOC limit, Sashco’s formulation efforts over the last 5 years has focused on removing the current aromatic solvent, toluene, and replacing it with PCBTF. Replacing all the toluene with PCBTF reduces the VOC content to 300 g/L. Efforts to further reduce the VOC content to 250 g/L, required much more reformulation effort to maintain the current properties of Sashco’s clear, paintable, and immediately water-resistant sealants.

Similar to the voices SCAQMD staff have heard on 8/11/2022 from industry colleagues, Sashco must also voice extreme discontent, for an identical mishandling by SCAQMD staff, in which

1-1

staff has shared that the time, effort, and expense spent to meet the requirements, at almost the end of the 5-year reformulation window, was all wasted because the exempt solvent upon which Sashco has based all reformulation work on is being prohibited!

It was only in the 3<sup>rd</sup> working group on 7/21/22 that SCAQMD staff published the recommendation to prohibit the use of PCBTF. Compounding the matter is the fact that there has been NO DELAY ACCEPTED in reasonably adjusting the 1/1/2023 VOC reduction scheduled for this category! This prohibition will force Sashco to stop selling clear, paintable, and immediately water-resistant sealants in SCAQMD.

As discussed in the 3/23/22 conference call, Sashco is also currently using PCBTF to meet the current 300 g/L limit for all other roof sealants.

Sashco manufactures and sells a cartridge and brush grade version of the clear, paintable, and immediately water-resistant roofing sealant. Both sealants are formulated with PCBTF to meet the existing 300 g/L limit. If Sashco must replace the PCBTF in these formulations with a non-exempt aromatic solvent, the VOC level will increase to 380 g/L for the cartridge grade and to 550 g/L for the brush grade.

Sashco's squeeze tube grade of clear, paintable, and immediately water-resistant sealant also contains some PCBTF. The PCBTF formula is at 380 g/L. The non-PCBTF formula is at 410 g/L.

The table below summarizes the PCBTF and non-PCBTF formulas that Sashco currently manufactures for the California market and the non-PCBTF alternate formula if PCBTF is prohibited.

Product	SCAQMD Rule 1168 VOC category & VOC limit (2017)	PCBTF formula VOC Compliant	Non-PCBTF formula	Formulated for California after 2017 rule update?	Container size
Lexel cartridge	Clear, paintable & immediately water-resistant 380 g/L	No PCBTF in current formula	<380 g/L	Yes	10.5 fl oz cartridge
Lexel squeeze tube		<380 g/L	410 g/L #	Yes	5 fl oz squeeze tube
Through the Roof! Cartridge grade	All other roof sealants 300 g/L	<300 g/L	<380 g/L #	Yes	10.5 fl oz cartridge
Through the Roof! Brush grade		<300 g/L	<550 g/L #	No*	1 quart & 1 gallon can

1-1



\* This was formulated for the “non-membrane roof sealant” category that was combined into the “all other roof sealants” category in the 2017 rule update  
# not sold in California

Attached is a document Sashco provided to SCAQMD in 2014 that explains the market needs for a clear, paintable & immediately water-resistant sealant.

At this time Sashco is formally requesting both a review of the SCAQMD process which led to this situation in which a product, made by a company working in good faith and high transparency with SCAQMD staff, is at extremely high risk of being regulated out of the marketplace in spite of stated goals to the contrary and adoption of one of the following remedies given the situation:

1. PCBTF prohibition: DELAY implementation of the 250g/L VOC limit for Clear, Paintable, and Immediately water-resistant architectural and roofing sealants and INCREASE the VOC limit to  $\leq 410$  g/L for “Clear, Paintable, and Immediately Water-Resistant Sealants” and “All Other Roof Sealants” categories for a period of 3 years. Create a new category for “Clear, Paintable, and Immediately Water-Resistant Non-Membrane Roof Sealant” with a VOC limit of 550 g/L for a period of 3 years.  
or
2. DELAY the ban of PCBTF for “Clear, Paintable, and Immediately Water-Resistant Sealants” and “All Other Roof Sealants” categories while retaining the existing VOC g/L limits established in the October 2017 “Upon Adoption” for a period of 3 years.

1-1

Sashco anticipates working with SCAQMD to arrive at mutually beneficial 1168 update that meets both Sashco capabilities and SCAQMD targets.

SCAQMD has made it clear that the 2022 Rule 1168 update is being finalized soon. Sashco is looking forward to a response from SCAQMD in 14 days from receipt.

Regards,



Paul Beymore

R&D Director  
Sashco, Inc. | 10300 E. 107<sup>th</sup> Place, Brighton CO 80601  
Mobile: 720-670-3598  
[sashco.com](mailto:sashco.com) | [pbeymore@sashco.com](mailto:pbeymore@sashco.com)

### *Staff Response to Comment Letter #1*

#### Response to Comment 1-1:

Thank you for submitting a comment letter detailing Sashco’s concerns and for meeting with South Coast AQMD staff to further discuss your concerns. Staff appreciates your comment acknowledging the South Coast AQMD’s air quality goals and recognizes the concerns of Sashco regarding the proposal to prohibit use of pCBtF due to toxicity concerns. Staff understands some products will be impacted by the prohibition of pCBtF, including Clear, Paintable, and Immediately Water-Resistant Sealants.

Based on the September 8, 2022, meeting staff held with Sascho, the request to allow for more time for reformation of All Other Roof Sealants is based on a misinterpretation of the applicability of the most restrictive clause in Rule 1168. Staff understands how that provision could be



misinterpreted and amended the language to clarify the intent of this clause in the proposed amended rule language.

Staff does not support the first request which would raise VOC limits in order to allow for the sale of products that are currently not legal to sell into California and the current VOC limits in Rule 1168 for All Other Roof Sealants which is 300 g/L.

With regard to the request to allow more time before the prohibition of pCBtF goes into effect for Clear, Paintable, and Immediately Water-Resistant Sealants, staff appreciates the good faith effort Sashco has made and the time it took to reformulate their product(s) to meet the lower VOC limits using a solvent the South Coast AQMD has previously exempted from the definition of a VOC. As such, staff proposes to allow three years for Sashco to reformulate Clear, Paintable, and Immediately Water-Resistant Sealants without pCBtF. However, at the end of that period, Clear, Paintable, and Immediately Water-Resistant Sealants will be expected to achieve a VOC content to 250 g/L. To compensate for delayed prohibition, staff is proposing to reduce the sell-through and use-through to two years.

Staff believes a VOC content limit at 250 g/L or lower is technically feasible based on recently submitted Quantity and Emission Reports (QERs) from adhesive and sealant manufacturers required under Rule 1168. The QERs show progress has been made reformulating lower-VOC sealants that are clear, paintable, and immediately water-resistant without pCBtF. Many major, international manufacturers of adhesives and sealants reported Clear, Paintable, and Immediately Water-Resistant Sealants achieving VOC levels as low as 50 g/L or less. The sales volume reported from these new lower-VOC products also indicate consumer acceptance. The QERs have only recently been received, so a more in-depth evaluation of the data is necessary before a VOC content limit lower than 250 g/L can be recommended.

*Comment Letter #2*

We  
protect  
what  
matters  
most™

September 12, 2022

Mojtaba Moghani, Ph.D.  
Planning, Rule Development and Implementation  
South Coast AQMD  
21865 Copley Drive  
Diamond Bar, CA 91765

Re: Proposed Amended Rule 1168  
Adhesives and Sealant Applications

To Whom It May Concern:

By this letter, GAF is submitting comments on the Proposed Amended Rule 1168 for adhesive and sealant applications for roofing products in the South Coast Air Quality Management District.

Founded in 1886, GAF is the leading roofing manufacturer in North America. As a member of the Standard Industries family of companies, GAF is part of the largest roofing and waterproofing business in the world. The company's products include a portfolio of roofing and waterproofing solutions for residential and commercial properties.

The proposed amendment creates a new category for shingle laminating adhesive that applies to *asphalt based adhesives used to adhere individual layers during the manufacture of multi-layer asphalt shingles*. While we agree that this type of product has a relatively low VOC value, it is not typically a stand-alone adhesive that is sold to consumers. Rather, the laminating adhesive is a component of a finished product, and is in a solid state between layers of asphalt shingle materials when it comes to the consumer market. It is key to the over-all performance of laminated shingles.

2-1

GAF is concerned that this current proposal is based off a small sample size of a product that is not significantly contributing to the air quality concerns of SCAQMD. Furthermore, setting a limit of 30 g/L when the upper values of the QER data was 29 g/L does not allow for testing variability when using designated VOC test methods. If a limit must be placed on this material, GAF would suggest 50 g/L. But requiring testing on a low-VOC material has the potential of raising the cost of the product which would affect homeowners and building owners, as these products are the most popular and cost-effective roofing choice for single-family residential buildings in California.

In summary, GAF recognizes and appreciates the efforts of the SCAQMD staff to review and amend Rule 1168 that improves air quality in California; however, we oppose this proposal creating a new category for shingle laminating adhesives. GAF supports appropriate VOC limits for relevant products.

GAF appreciates the opportunity to submit a public comment. Please feel free to reach out to me for further assistance or clarification. I can be reached at 352/549-0170 or [heather.estes@gaf.com](mailto:heather.estes@gaf.com).



We  
protect  
what  
matters  
most™

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Heather Estes", written in a cursive style.

Heather Estes  
Senior Codes and Regulatory Compliance Specialist  
GAF

### *Staff Response to Comment Letter #2*

Staff presented “All Other Roof Adhesives” category data during working group meeting #1. Staff’s preliminary assessment was to break-up the “All Other Roof Adhesives” category into further subcategories to address the large volume of low-VOC products in this category. Staff found two types of low-VOC products in this category; Shingle Laminating Adhesives and Hot Applied Modified Bitumen/Built Up Roof Adhesive. The assessment is not based on a small sample of products, these new subcategories have very high sales volume.

Regarding Shingle Laminating Adhesives mentioned in this comment letter, the proposed 30 g/L VOC limit provides a considerable compliance margin. During the technology assessment, those products were grouped in the 20 – 29 g/L range. However, their VOC contents are all less or equal to 20 g/L as reported by the manufacturers. Further, based on staff’s discussion with manufacturers who submitted QERs, these products are all much less than 20 g/L, and manufacturers report them as less than or equal to 20 g/L to include a compliance margin.

Through a follow-up meeting with GAF regarding this comment letter, staff verified that the concern is on the test method. GAF is concerned that the 30 g/L limit would require them to use the gas chromatography method specified by Rule 1168 Test Method Guidance document for non-reactive adhesives at or less than 150 g/L for VOC. This method is not the most appropriate method for testing asphaltic roofing adhesives and would be more costly than U.S. EPA Reference Method 24. These products are very low-VOC, they are solid at room temperature and require heat for application. There is little to no water and no solvents. U.S. EPA Reference Method 24 measures the volatiles as what is driven off in a forced air oven at 110°C. Staff agrees that method is better suited for these products and commits to amending the Rule 1168 VOC Test Method Guidance Document to specify that these asphaltic adhesives should be tested using U.S. EPA Reference Test Method 24 analysis.

## Comment Letter #3



September 13, 2022

Heather Farr, Planning and Rules Manager  
Mojtaba Moghani, Ph.D., AQ Specialist  
South Coast Air Quality Management District (SCAQMD)  
21865 Copley Dr.  
Diamond Bar, CA 91765

TRANSMITTED via email

Dear Ms. Farr and Dr. Moghani:

On behalf of the Asphalt Roofing Manufacturers Association (ARMA)—the trade association representing North America's asphalt roofing manufacturing companies and their raw material suppliers—I want to thank SCAQMD staff for considering and including in the draft rule the modifications to the subcategory definitions for Hot Applied Modified Bitumen/Built Up Roof Adhesive and Shingle Laminating Adhesive that ARMA submitted on August 17th. Also, I want to express our appreciation for the opportunity to offer the three additional comments that follow on Proposed Amended Rule 1168.

**(1) Definition of Hot Applied Modified Bitumen/Built Up Roof Adhesive**

Based on review of the definition proposed in the "preliminary draft rule" that was released August 19<sup>th</sup>, further consideration within ARMA, and discussions with the Single Ply Roofing Industry (SPRI), we recommend the following modifications to the proposed definition for Hot Applied Modified Bitumen/Built Up Roof Adhesive:

*HOT APPLIED MODIFIED BITUMEN/BUILT UP ROOF ADHESIVE. A thermoplastic hot melt adhesive ~~substant~~ which requires high temperature conversion to a fluid at the point of application and complies with ASTM D312 or ASTM D6152. Installation or repair includes the application of roofing insulation ~~installation~~, roofing ply sheets, roofing membranes, and aggregate surfacing.*

3-1

These modifications are offered for the following reasons:

- Clarify that this material is a thermoplastic hot melt adhesive and falls within the (j)(7) exemption to the section (g) labeling provisions
- Change "substant" to "adhesive"
- Add ASTM D6152 as a second reference standard; failure to include it in the original submission leaves the definition incomplete and excludes materials that should be in the subcategory
- Correct "installation" to "insulation"

**Asphalt.** The Roofing Solution.™

2331 Rock Spring Road • Forest Hill, MD 21050 • PHONE: 443.640.1075 • FAX: 443.640.1031 • www.asphaltroofing.org



**(2) Definition of Shingle Laminating Adhesive**

We recommend the following modification to the definition of Shingle Laminating Adhesive:

*SHINGLE LAMINATING ADHESIVE is an asphalt-based thermoplastic hot melt adhesive used to adhere individual layers during the manufacture of multi-layer asphalt shingles.*

3-2

This proposed change expresses the nature of the materials used for lamination during production of asphalt shingles and clarifies that these materials fall within the (j)(7) exemption to section (g) labeling provisions.

**(3) Regulatory Limit for Hot Applied Modified Bitumen/Built Up Roof Adhesive AND Shingle Laminating Adhesive**

We ask that you reconsider the regulatory limit proposed for these two new subcategories. ARMA proposes a regulatory limit of 50 g/L rather than the 30 g/L included in the draft rule. This is consistent with the recommendation in our August 17<sup>th</sup> letter.

According to information shared in Working Group Meeting #1 on February 11, 2022, the technology assessment for All Other Roof Adhesives included forty-six products, showed a large sales volume in the 20-29 g/L VOC range, and indicated about 80% of those materials were built up roofing asphalt. That means thirty-six or thirty-seven of the surveyed products were built up roofing asphalt and about nine or ten products were something else (presumably shingle laminating adhesive). These are both very small data sets upon which to propose a regulatory limit within 1 g/L of the upper end of the range of assessed materials. This point alone is a reasonable basis for a more cautionary approach.

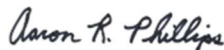
3-3

Another concern is the unknown variability when existing test methods are applied to these materials. As was pointed out by an attendee during the September 1<sup>st</sup> Public Workshop, the known variability of EPA Method 24 is relatively large. *Test Method Guidance Document: Rule 1168-Adhesive and Sealant Applications* identifies SCAQMD Method 313 as the appropriate test method for non-reactive adhesives with VOC less than or equal to 150 g/L. Method 313 includes no estimate of variability. It is plausible that compliant materials may obtain non-compliant results due solely to method variation. This is a legitimate issue and data shared to date does not address test method precision specific to these new proposed subcategories. Setting a regulatory limit higher than the proposed 30 g/L is appropriate based on the current state of knowledge.

ARMA recommends that the regulatory limits for both proposed new subcategories be set at 50 g/L rather than the 30 g/L limits indicated in the proposed amended rule released August 19<sup>th</sup>.

We appreciate your consideration of this input. If you have any questions about the recommendations contained herein, please contact me at your convenience.

Sincerely,



Aaron R. Phillips  
Vice President of Technical Services

### *Staff Response to Comment Letter #3*

#### Response to Comments #3-1 and #3-2:

Staff agreed with the stakeholders suggestion and modified the proposed definitions for Shingle Laminating Adhesives and Hot Applied Modified Bitumen/Built Up Roof Adhesive categories.

#### Response to Comment #3-3:

Please refer to response to comment letter #2 regarding the VOC limits for two new subcategories. Regarding the potential uncertainty of the test method, U.S. EPA Reference Method 24 has inherent errors when there is high water content, high exempt compounds concentrations, or both. For high solids products with little or no water or exempt compounds, the method relies on a percent solids bake and weigh oven test which is simple and accurate. Staff does not anticipate any

test method issues for these products but will amend the Rule 1168 Test Method Guidance document with specific guidance on how these products should be analyzed.

*Comment Letter #4*

September 13, 2022

Heather Farr  
Mojtaba Moghani, Ph.D.  
South Coast AQMD  
21865 Copley Drive  
Diamond Bar, CA 91765

Re: Response to South Coast AQMD Proposed Amended Rule (PAR) 1168 – Prohibition of Parachlorobenzotrifluoride

Dear Ms. Farr and Dr. Moghani,

The Single Ply Roofing Industry (SPRI) appreciates the opportunity to comment on the District's Proposed Amendment to Rule (PAR) 1168 – Adhesive and Sealant Applications.

SPRI recognizes the effort that went into the development of this proposed rule amendment and the Staff Report. However, there are several areas that we believe are not reasonable and cannot be supported by current or anticipated technology advances.

**Prohibition of Parachlorobenzotrifluoride (PCBTF)**

The PAR states "On or after January 1, 2025, no person shall manufacture for sale Single Ply Roof Membrane Adhesive in the South Coast AQMD that contains more than 0.01 percent of Parachlorobenzotrifluoride". There is also a January 1, 2024 date for any "Regulated Product" which would include all the other roofing adhesives, sealants, etc.

SPRI recommends that the manufacture prohibition date be moved to January 1, 2028 for adhesives, sealants, and primers that are used in roofing applications (Single Ply Roof or All Other Roof) and January 1, 2027 for other Regulated Products. More time is required to reformulate the products and certifying them by the third-party code testing approval companies to ensure code compliance. The aforementioned extension of timeline is based on SPRI Members' experience and historical developmental and approval cycles. Please see below for additional information.

Items impacting the Extension Request for Reformulation of the Products

- The Single Ply Roof Membrane Adhesive and All Other Roof Adhesives VOC limit of 250 g/L was in effect since 1993. Unfortunately, current adhesive formulas cannot simply be reverted to those 1993 formulations because methylene chloride, ethylene dichloride, perchloroethylene, and trichlorethylene were banned as of January 1, 2003
- Each adhesive, sealant, and primer formulation has different resins, plasticizers, additives, and solvent blends that are specific to the membrane type and manufacturer

4-1

t. 781.647.7026

465 Waverley Oaks Road, Suite 421 – Waltham, MA 02452  
f. 781.647-7222

e. info@spri.org

South Coast AQMD  
Page 2

- Adhesives, sealants, and primers have different performance requirements and, as a result, the VOC content will depend on the type of product, its intended use, and the conditions in which it is applied. There is no single answer across product types.
- There are several important properties imparted by solvents in general and exempt solvents in particular. Key properties are dissolving polymers and resins, viscosity reduction, compatibility of the various formulation components, rheological properties, flash point, and evaporation rate (which affects drying time and “green strength”). These properties depend on the solvent(s) used as well as the other components in the product
- The development cycle for new or reformulated products can take up to 24 months before products are ready for extended internal testing and third-party certification testing.

4-1

#### Testing and Approvals

- A single ply roof is a highly engineered system. Roof components built into a specific assembly require internal and third-party testing to be compliant with local, state, and federal building codes, as well as the building owner’s insurance requirements
- Since manufacturers warrant roof systems for upwards of 30 years, they must conduct the proper studies to ensure that any new adhesive will perform over that period. This work includes laboratory studies, field studies and code testing with such entities as Factory Mutual, Miami-Dade County, and Underwriters Laboratories.
- After the developmental cycle, extended internal testing must be performed by the manufacturers before adhesives, sealant, and primer assemblies are sent for third-party testing and approvals. This testing can take up to 12 months to complete. These tests include:
  - Membrane compatibility
  - Adhesive strength (peel strength of the adhered membrane)
    - Room temperature and accelerated aging (Multiple replicants per test)
  - Heat resistance
  - Weatherability (UV resistance, moisture resistance, plasticizer migration, etc.)
  - Application
  - Wind uplift (before being sent to a third party)
  - Flame spread (before being sent to a third party)
  - Beta field testing with contractors to verify application and performance in the field - including coverage rates, ease of handling, working times, and green strength development.
- Third-Party testing and approvals can take 18 months to 24 months to complete. Third-party testing and approvals include wind uplift, fire resistance, flame spread, and additional tests as specified in the Building Code.

4-2

#### Sell Through Period

- The typical shelf life for roofing adhesives and sealants are 6 – 12 months. Any amount of sell through time over 12 months does not provide any relief for manufacturers or contractors
- Manufacturers and contractors do not have storage space for 6 – 12 months’ worth of roofing adhesives and sealants making it difficult to plan reserve stock for the transition period. .

4-3



South Coast AQMD  
Page 3

Conclusion

SPRI is requesting that the manufacturing prohibition date be moved from January 1, 2025 to January, 1 2028 for adhesives, sealants, and primers that are used in roofing applications (Single Ply Roof or All Other Roof) and from January 1, 2024 to January 1, 2027 for other Regulated Products. This is based on the details noted above and timelines summarized below:

- Reformulation: up to 2 years
- Lab and field evaluation: up to 1 year
- Third Party Certification: up to 2 years

4-3

Since adhesives, sealants, and primers will be past their shelf life after 12 months, SPRI believes that a 12 month sell through, and 24 months use through is acceptable.

Thank you for your time and consideration of our thoughts in this matter. Please let us know if you have any questions or need additional information.

Regards,



Randy Ober, Technical Director  
SPRI, Inc.

*Staff Response to Comment Letter #4*

Response to Comments #4-1 and #4-2:

Staff appreciates the comments and understands reformulation efforts and subsequent testing take time to complete. Staff is proposing to allow 4 years before pCBtF is prohibited for the categories staff has identified a significant sales volume of products using pCBtF to comply with the VOC limits. That will allow additional time for manufacturers to reformulate. Staff also included the cost for third-party testing in the socioeconomic analysis.

Response to Comment #4-3:

Staff thinks a compromise of allowing longer time to reformulate and lessening the sell-through period is reasonable but only for those categories using pCBtF to comply with the VOC limits. As staff has presented, there are not many products using pCBtF. Staff is proposing to carve out three specialty categories where staff has identified a considerable number of products using pCBtF and will propose a longer timeline for reformulation and a shorter sell-through/use-through period.

## Comment Letter #5

3M EHS | Product Stewardship

3M Center, Building 220-6E-03  
St. Paul, MN 55144-1000

September 15, 2022

Dr. Mojtaba Moghani  
Planning, Rule Development, Implementation  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765  
via email to mmoghani@aqmd.gov

Dear Dr. Moghani:

3M Company ("3M") appreciates the opportunity to provide comments on the South Coast Air Quality Management District's draft proposed amendments to *Rule 1168 – Adhesive and Sealant Applications*.

3M supports the amendments to Rule 1168 to combine the prohibitions for certain toxic solvents ((g)(1)) and Group II exempt solvents ((g)(2)) into one prohibition under (h)(1), and to set an allowance for trace levels of prohibited compounds up to 0.01 percent, aligning with the California Air Resources Board Consumer Products Regulation. This especially helps to provide clarification for trace amounts of methylene chloride, as methylene chloride is both a toxic solvent prohibited under (g)(1), as well as a Group II exempt solvent prohibited under (g)(2).

Section (g)(1) of Rule 1168 contains the following prohibition on the sale and use of substances containing methylene chloride:

"[N]o person shall use, supply, sell, or offer for sale a regulated product in the District that contains . . . methylene chloride . . ."

However, section (g)(2) states, in relevant part:

"On and after January 1, 2019 . . . no person shall use, supply, sell, or offer for sale a regulated product in the District that contains Group II exempt compounds listed in Rule 102 in quantities greater than 0.1 percent by weight."

Rule 102, in turn, includes methylene chloride in the definition of Group II exempt compounds. Rule 1168, however, is silent as to how sections (g)(1) and (g)(2) operate in conjunction, if at all. 3M supports the amendments and appreciates the clarification and the alignment with the California Air Resources Board.

5-1

3M respectfully requests clarification on the following: Is the section pertaining to trace amounts (up to 0.01%) of prohibited compounds a clarification of the already existing rule, in which case companies can apply this clarification now, or is this an amendment to the rule, in which case the allowance for trace amounts of prohibited compounds, previously addressed under (g)(1), will not go into effect until the finalization of the rule?

5-1

Thank you for your consideration of 3M's comments. Please contact me via phone (651-650-1529) or email (LWurm@mmm.com) if you have any questions.

Thank you,  
Lauren Wurm  
Regulatory Supervisor

### *Staff Response to Comment Letter #5*

#### Response to Comment #5-1:

During the last rule amendment, the prohibition for certain toxic solvents (paragraph (g)(1)) was expanded to include Group II exempt solvents (paragraph (g)(2)). The 2017-amended prohibition included a 0.1% limit which was not included in original prohibition. Methylene chloride was included in original prohibition and is also Group II exempt compound. Stakeholder questioned if the 2017-amended prohibition serves as an exception to the original prohibition to allow for 0.1% use of methylene chloride. Legal interpretation stated that the plain language of the rule, legislative history, and statutory construction all verify that the 2017-amended exemption is not an exception to the original prohibition of methylene chloride. Inclusion of the 0.1% limit was intended to only allow for trace amounts of Group II exempt compounds and not to allow for prohibited compounds to be used as additives at levels of 0.1% or below.

Under the 2017 amended rule, (g)(2) is not an exception to (g)(1) and per the current version of (g)(1), methylene chloride is prohibited. However, the paragraphs being questioned are combined in the current proposed amended rule to prevent any further confusion. The proposed (h)(1) would only allow for the trace amounts (up to 0.01%) of prohibited compounds.

Staff is proposing to change the trace levels allowance for prohibited compounds from 0.1 to 0.01 percent to be consistent with the California Air Resources Board Consumer Product Regulation and provides more realistic indication of a trace level contaminant and will be more health protective.

*Comment Letter #6***Raymond Regulatory Resources (3R), LLC**

**Doug Raymond** 13808 Duncan Run Rd. Galena, Ohio 43021  
djraymond@reg-resources.com 440-339-4539

September 15, 2022

Mojtaba Maghani  
mmoghani@aqmd.gov

Subject: Rule 1168 Opteon™ 1100

Dear Mojtaba,

On Behalf of The Chemours Company the following comments are being submitted on Proposed Rule 1168 on Adhesives & Sealants.

Chemours is a global leader in the production and sales of safe and energy efficient refrigeration, air conditioning, foam insulation, fire suppression, propellants and waste heat recovery fluids.

**Comments**

SCAQMD has been petitioned to exempt the compound HFO-1336mzz(Z), CAS number 692-49-9, trade name Opteon™ 1100, under Rule 1168. This compound has been exempt from the definition of Volatile Organic Compound (VOC) under the Clean Air Act (CAA) by the US Environmental Protection Agency (EPA) since November 2018.

Since 2019, Chemours has had ongoing discussions with SCAQMD on Opteon™ 1100 and submitted substantial amounts of documents pertaining to toxicology, reactivity, use cases, internal and external data to support an exemption. In that time period, when SCAQMD has had questions on these documents, Chemours has quickly responded to address any concerns to the satisfaction of SCAQMD.

Chemours customers intend to manufacture finished products using Opteon™ 1100 within the jurisdiction of SCAQMD as a way to meet and exceed The State of California decarbonization efforts. Using low Global Warming Potential (GWP) compounds like Opteon™ 1100 would positively contribute to these efforts. This VOC exemption would give the market additional options to comply with HFC phase out rules under the California Air Resources Board (CARB). Without this exemption, Chemours customers would not be able to meet the VOC limits being proposed by SCAQMD in their formulations.

13808 Duncan Run Rd. Galena, Ohio 43021 [djraymond@me.com](mailto:djraymond@me.com) 440-339-4539

1

6-1



In June of 2021, the petition was resent to SCAQMD. Based upon ongoing communications regarding this petition, Chemours believed that Opteon™ 1100 would be exempt in Rule 1168, and at no time was there any indication from the district that any additional work or documents would be needed for this exemption.

In February of 2022 SCAQMD had their first work group meeting on Rule 1168. On slide 47 of the staff presentation there was an indication that SCAQMD would proceed with the exemption of Opteon™ 1100. This further supported Chemours understanding that they had fulfilled the necessary requirements for the exemption petition.

On April 12, 2022, SCAQMD had their second work group meeting on Rule 1168. Again, on slides 44 & 45 SCAQMD states that Opteon™ 1100 was reviewed for toxicity and “did not find anything of concern”. Thus, Chemours continued to believe Opteon™ 1100 would be exempt in Rule 1168 for use in manufacturing foams.

On July 21, 2022, in the 3<sup>rd</sup> workgroup meeting on Rule 1168, SCAQMD staff state that Opteon™ 1100 needs further review. SCAQMD reasoning is that board directed a precautionary approach to exempting compounds. However, this decision for the precautionary approach was made in 2017 and SCAQMD had been stating since 2020 that there are no concerns with this compound. To ask for additional assessment in July 2022 with a voting deadline for the rule in November 2022 gave Chemours no opportunity to complete any assessment in this timeframe and created an unrealistic expectation.

Opteon™ 1100 will only be used in two-component foam products. Due to the regulation of this compound by a US EPA Toxic Substances Control Act (TSCA) Significant New Use Rule (SNUR), commercial use of this substance is limited to Industrial and Professional uses only. This means that finished products containing Opteon™ 1100 cannot be sold into Do It Yourself (DIY) applications such as in home spray foam kits. Thus, according to federal mandate this compound can only be used in an Industrial or manufacturing setting where workers will utilize applicable Personal Protection Equipment (PPE) and follow risk mitigation procedures and guidelines to reduce potential risk of exposure.

SCAQMD has requested a potential definition of Industrial Use. The following wording is being proposed as a potential definition.

*“Industrial or Professional setting includes settings where workers will be trained in safe handling and utilize applicable Personal Protection Equipment (PPE) and follow risk mitigation procedures and guidelines, such as OSHA, to reduce potential risk of exposure.”*

Over the last several decades, SCAQMD has considered nearly every Blowing Agent as VOC exempt, including HCFCs, HFCs, and HCFOs. If not granted, this would be a completely new stance that a Blowing Agent would not be granted VOC exemption, even when considered to be a better alternative to an incumbent.

6-1

As recently as 2014, SCAQMD granted a VOC exemption under Rule 102 to another very similar Blowing Agent without going through a full OEEHA assessment. This Rule 102 is a much broader exemption than is being requested for Opteon™ 1100 under Rule 1168. Not granting this exemption would make an unequal playing field in the market for two Blowing Agent products with similar characteristics.

Given the very limited exemption and the SCAQMD toxicity review the compound Opteon™ 1100 should be exempted under Rule 1168 without further testing requirements.

6-1

#### Summary

Opteon™ 1100 is a well studied, fully commercialized product that has gone through evaluation by US EPA under several regulations including TSCA and the Clean Air Act, including the Significant New Alternatives Policy (SNAP) process and VOC exemption. Chemours has conducted through toxicology assessments of this substance in support of the marketed uses through their Product Stewardship and Sustainability organization. Beyond United States regulations, Opteon™ 1100 has also gone through evaluation from global regulatory authorities and similarly approved for these end use applications.

SCAQMD followed up with a toxicity review and “did not find anything of concern”. In addition, the exemption being sought would be extremely limited and only used in a manufacturing setting with all OSHA requirements. Based upon successful use of this substance at facilities outside of California, manufacturers have expressed intent to implement use of this substance in California based on performance and environmental criteria.

#### Conclusion

Opteon™ 1100 should be exempted in November of 2022 for use by district facilities without further evaluation. Therefore, we respectfully request this limit exemption now without delay.

Thank you for your time. Any questions or comments please feel free to contact me at 440-339-4539 or at [diraymond@me.com](mailto:diraymond@me.com).

On Behalf of The Chemours Company,  
Sincerely,



Douglas Raymond

Cc: Heather Farr: [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

13808 Duncan Run Rd. Galena, Ohio 43021 [diraymond@me.com](mailto:diraymond@me.com) 440-339-4539

3

### *Staff Response to Comment Letter #6*

#### Staff Response to Comment #6-1:

Opteon 1100 was included to U.S. EPA's list of compounds excluded from the regulatory definition of volatile organic compound (VOC) in November 2018 based on its negligible contribution to ground-level ozone formation. The VOC exemption petition was submitted on February 4, 2014 by E.I. DuPont de Nemours (DuPont), predecessor of Chemours for Performance

Chemicals. Supporting materials for this exemption were documents focused on atmospheric reactivity and global warming potentials.

Staff recognizes the low ozone formation and global warming potential of Opteon 1100, but will no longer propose a new VOC exemption for a chemical unless OEHHA has conducted an assessment of the chemical as the Stationary Source Committee recommended regulatory VOC reductions do not encourage the use of chemicals that have a known or suspected toxic profile. Opteon 1100 is an HFO and South Coast AQMD has exempted several HFOs in the past; however, OEHHA has not evaluated Opteon 1100.

Staff is proposing a conditional exemption for Opteon 1100. That is the exemption will only become effective if OEHHA has sufficient information to establish a Cancer Inhalation Unit Risk Factor, an acute reference exposure level (REL) and a chronic REL of Opteon 1100 and does not adopt a cancer risk factor for Opteon 1100 and develops an acute REL (or interim acute REL) and a chronic REL (or interim chronic REL) for Opteon 1100 which are higher than those for trans-1-Chloro-3,3,3-Trifluoropropene (HFO-1233zd), which is the HFO it would replace. As suggested by the commenter, the exemption will be limited to two-component foam sealants used in a professional setting by workers trained with procedures and guidelines to reduce potential risk of exposure. Staff is concerned with including any VOC exemption without a toxic assessment by OEHHA; hence, recommends a limited and conditional exemption as a balanced approach.



## Comment Letter #7



South Coast AQMD  
21865 Copley Drive  
Diamond Bar, CA 91765

Dear South Coast Air Quality Management District:

The National Association of Chemical Distributors (NACD) is an international association of chemical distributors and their supply-chain partners. Member companies process, formulate, blend, re-package, warehouse, market, and transport chemical products across California. The industry that NACD represents is a major economic engine that generates \$2.42 billion of tax revenue in California with over 300 facilities in the state.

NACD members are concerned with the actions being taken by the South Coast Air Quality Management District (SCAQMD) that would in amendments to Rule 1168 prohibit the use of both para-Chlorobenzotrifluoride (pCBtF) and tertiary-Butyl Acetate (t-BAc). While we appreciate your concerns about both materials and their safety, we must strongly object to this course of action. Both pCBtF and t-BAc are core products for achieving volatile organic compound (VOC) compliance for several end-users in various industries and applications.

NACD is concerned that a broad ban of the pCBtF and t-BAc will significantly restrict the amount of products that can meet VOC limits, as there are few acceptable alternatives to these substances. Without an adequate timeline allowing for industry to evaluate other substances to be used in place of pCBtF and t-BAc, this ban has the potential to disrupt the manufacturing of roofing products in California significantly.

Moreover, NACD believes there is a need for additional research to be conducted by SCAQMD. Moving forward with this rule is likely to increase the use of water-based chemistry to manufacture roofing products due to the limited alternatives to pCBtF and t-BAc. These substances do not have a significant level of research evaluating their long-term impacts to human health. NACD urges SCAQMD to allow more time before moving forward with a ban on pCBtF and t-BAc so the agency can conduct the needed research to confirm that banning these substances will not inadvertently promote chemistries that are more hazardous.

NACD asks that SCAQMD put a pause on this process until all parties can gather more data and more deeply evaluate the outcomes of moving forward with this revision to rule 1168. NACD acknowledges the importance of prioritizing the health of the communities that SCAQMD represents and hopes the agency carefully considers any proposed revisions to rule 1168.

Sincerely,

A handwritten signature in black ink, appearing to read "Jennifer C. Gibson".

Jennifer C. Gibson

Advancing Stewardship, Creating Connections™

4201 Wilson Blvd, Suite 0515  
Arlington VA, 22203  
(P) 703.527.6223 (F) 703.527.7747  
nacd.com



Vice President, Regulatory Affairs



*Staff Response to Comment Letter #7*Response to Comment #7-1:

Well before the 2017 Rule 1168 amendment, there were toxicity concerns regarding the use of t-BAC and pCBtF. During the 2017 rule amendment, staff assessed the health risks associated with potential t-BAC usage in roofing products and based on the assessment staff decided not to exempt t-BAC in Rule 1168. In 2020 OEHHA published the pCBtF assessment and it was found out that the Cancer Potency Factor for pCBtF is considerably higher than for t-BAC.

During the current rule amendment, staff performed an updated modeling assessment for t-BAC at five meteorological stations at different locations in the South Coast AQMD. Staff provided two scenarios based on solvent daily usage and project coverage area provided by stakeholders to assess the associated risks: Scenario #1: provided Firestone BP and Scenario #2: provide by SPRI. Risk assessments generally focus on the worse-case scenario, but staff considered a range of scenarios and in all the scenarios the Acute Hazard Index (HI) was higher than the threshold. The data was presented in Working Group Meeting #3. OEHHA has not established an acute end point for pCBtF but the Governing Board directed staff to rely on the precautionary principle, which is to prioritize reducing both known and unknown toxic risk over VOC reductions.

Staff has also assessed the extent of pCBtF usage in adhesives and sealants. In February 2022, staff conducted a survey of manufacturers regarding pCBtF usage; 25 manufacturers responded and 11 indicated they formulate some of their products with pCBtF. The pCBtF survey and manufacturer feedback indicated pCBtF is predominately used in roofing products. Staff also conducted an online search of all non-asphalt roofing sealant and adhesives and presented the survey and online research results during Working Group Meeting #4. Approximately 20% of Single-Ply Roof Membrane Adhesive category products contained pCBtF based on volume sales and the other roofing categories had very low number and sales of products containing pCBtF (less than 3%). Staff also collected samples from local retail stores for laboratory screening to further assess the extent of pCBtF usage in adhesives and sealants. Out of seven roof product samples, only one product was found to contain low levels of pCBtF, 1.3 wt %.

Staff has held more than seven meetings with roofing industry stakeholders; staff acknowledges the proposed pCBtF prohibition will impact some categories and based on several discussions with stakeholders, staff is proposing to delay the prohibition to allow time for reformulations for certain subcategories of products.

**Comment Letter #8**

October 4, 2022

Heather Farr  
Mojtaba Moghani, Ph.D.  
Michael Krause  
Yanrong Zhu  
Emily Yen  
South Coast AQMD  
21865 Copley Drive  
Diamond Bar, CA 91765

Re: Response to South Coast AQMD (SCAQMD) Proposed Amended Rule (PAR) 1168 – Prohibition of Parachlorobenzotrifluoride (pCBtF)

Dear Ms. Farr, Dr. Moghani, Mr. Krause, Ms. Zhu, and Ms. Yen,

The Single Ply Roofing Industry (SPRI) would like to thank SCAQMD again for their continued engagement with the Roofing industry to amend the Proposed Amendment to Rule (PAR) 1168 – Adhesive and Sealant Applications.

We appreciate SCAQMD's revisions, sent by Ms. Farr on September 21, 2022, to SPRI's original pCBtF Prohibition extension proposal. SPRI's Technical Committee has reviewed SCAQMD's comments and proposes the pCBtF prohibition extension and definitions below to be included in PAR 1168. SPRI is recommending a minimum 2-year extension on all Single Ply Roofing or All Other Roofing adhesives, sealants, and primers to allow for internal and 3<sup>rd</sup> party certification testing as described in our original proposal sent to SCAQMD on September 13, 2022.

SPRI is also recommending that a Technical Assessment be completed by SCAQMD in 2025 to verify the Roofing Industry has been able to formulate products to meet SCAQMD's VOC limits and the requirements of roofing applications without the use of pCBtF. A Technical Assessment in 2025 will allow SCAQMD and the Roofing Industry adequate time to collect data and work through any potential technical issues prior to the January 1, 2027 termination date of the extension.

8-1

Category	pCBtF Prohibition Effective date	End of Sell-through	End of Use-through
Roof Adhesive Primer	January 1, 2027	January 1, 2028	January 1, 2028
Cut Edge Single Ply Roof Membrane Sealant			
EPDM/TPO Single Ply Roof Membrane Adhesive			
All Other Single Ply Roof or All Other Roof Adhesives, Sealants, or Primers	January 1, 2025	January 1, 2028	January 1, 2028
Regulated Products not listed above	January 1, 2024	January 1, 2027	January 1, 2028

## Definitions

ROOF ADHESIVE PRIMER is a film-forming material applied to a substrate, prior to the application of an adhesive or adhesive tape to increase adhesion or bond strength, promote wetting, or to form a chemical bond with a subsequently applied adhesive and are marketed and sold exclusively for the installation or repair of roofing materials.

CUT EDGE SINGLE PLY ROOF MEMBRANE SEALANT is a low-solids sealant designed to seal the edges of single ply membrane with exposed scrim to inhibit water penetration.

EPDM/TPO SINGLE PLY ROOF MEMBRANE ADHESIVE is any adhesive to be used for the installation or repair of EPDM and TPO single ply roof membrane. Installation includes, but is not limited to, attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes, or ducts that protrude through the membrane.

8-2

Thank you for your time and consideration of our thoughts in this matter. Please let us know if you have any questions or need additional information.

Regards,



Mike Ennis, Technical Director

SPRI, Inc.

*Staff Response to Comment Letter #8*Response to Comment #8-1:

Staff appreciates the comments and changed the proposed amended rule to allow the pCBtF prohibition to be extended for categories where staff has identified pCBtF being used to meet existing rule limits.

Regarding the suggestion to include a technology assessment, staff included a paragraph in the resolution to direct staff to report back to the Stationary Source Committee by January 1, 2026. That timeline follows the next reporting period for the Quantity and Emission Reports. Staff will update the Stationary Source Committee on the data received and the roofing industry feedback on reformulation efforts.

Response to Comment #8-2:

Staff concurs and updated the proposed definitions for Roof Adhesive Primer, Cut Edge Single-Ply Roof Membrane Sealant, and EPDM/TPO Single Ply Roof Membrane Adhesive in the draft rule language based on the recommendations.

## ATTACHMENT I

### SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

**Final Subsequent Environmental Assessment for:**

**Proposed Amended Rule 1168 – Adhesive and Sealant Applications**

**October 2022**

State Clearinghouse No. 2017081031  
South Coast AQMD No. 20220902ST/ 08162017DT

**Executive Officer**

Wayne Nastri

**Deputy Executive Officer**

**Planning, Rule Development and Implementation**

Sarah Rees, Ph.D.

**Assistant Deputy Executive Officer**

**Planning, Rule Development and Implementation**

Michael Krause

**Assistant Deputy Executive Officer**

**Planning, Rule Development and Implementation**

Ian MacMillan

---

<b>Author:</b>	Sina Taghvae, Ph.D.	Air Quality Specialist
<b>Technical Assistance:</b>	Mojtaba Moghani, Ph.D.	Air Quality Specialist
<b>Reviewed By:</b>	Barbara Radlein Yanrong Zhu Heather Farr Barbara Baird Josephine Lee	Program Supervisor, CEQA Program Supervisor Planning and Rules Manager Chief Deputy Counsel Senior Deputy District Counsel

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
GOVERNING BOARD**

**CHAIR:** BEN J. BENOIT  
Mayor, Wildomar  
Cities of Riverside County

**VICE CHAIR:** VANESSA DELGADO  
Senator (Ret.)  
Senate Rules Committee Appointee

**MEMBERS:**

MICHAEL A. CACCIOTTI  
Mayor, South Pasadena  
Cities of Los Angeles County/Eastern Region

ANDREW DO  
Supervisor, First District  
County of Orange

GIDEON KRACOV  
Governor's Appointee

SHIELA KUEHL  
Supervisor, Third District  
County of Los Angeles

LARRY MCCALLON  
Mayor, Highland  
Cities of San Bernardino County

VERONICA PADILA-CAMPOS  
Speaker of the Assembly Appointee

V. MANUEL PEREZ  
Supervisor, Fourth District  
County of Riverside

NITHYA RAMAN  
Council Member, Fourth District  
Cities of Los Angeles Representative

REX RICHARDSON  
Vice Mayor, City of Long Beach  
Cities of Los Angeles County/Western Region

CARLOS RODRIGUEZ  
Mayor, Yorba Linda  
Cities of Orange County

JANICE RUTHERFORD  
Supervisor, Second District  
County of San Bernardino

**EXECUTIVE OFFICER:**  
WAYNE NASTRI

## PREFACE

This document constitutes the Final Subsequent Environmental Assessment (SEA) for Proposed Amended Rule (PAR) 1168 – Adhesive and Sealant Applications.

The Draft SEA was circulated for a 45-day public review and comment period from September 6, 2022 to October 21, 2022. No comment letters were received during the comment period.

Subsequent to the release of the Draft SEA for public review and comment, minor modifications were made to the proposed project. PAR 1168 was revised to also include delayed VOC limit effective dates for two categories of adhesives and sealants; add some definitions for new categories and remove the definition of Energy Curable Adhesives; add a weight based VOC limit for foam product categories; include a conditional Opteon 1100 exemption; update labeling and reporting requirements; allow delays for pCBtF prohibition for specialty products; remove an archaic exemption, and provide further clarification in the rule language. Therefore, some modifications have been made to the Draft SEA to make it a Final SEA which include updates to reflect the above changes made to PAR 1168 after the public notice of availability of the Draft SEA. The updates to the CEQA analysis include: 1) revising the total delayed VOC emission reductions due to delaying the VOC limit effective date for two categories of adhesives and sealants; and 2) adding further GHG emission and toxicity analysis for the conditional and limited exemption of Opteon 1100 in Two-Component Foam Sealants. To facilitate identification of the changes between the Draft SEA and the Final SEA, modifications to the document are included as underlined text and text removed from the document is indicated by ~~striketrough text~~. To avoid confusion, minor formatting changes are not shown in underline or strikethrough mode.

South Coast AQMD staff has evaluated the modifications made to PAR 1168 after the release of the Draft SEA for public review and comment and concluded that none of the revisions constitute significant new information, because: 1) no new significant environmental impacts would result from the proposed project; 2) there is no substantial increase in the severity of an environmental impact; 3) no other feasible project alternative or mitigation measure was identified that would clearly lessen the environmental impacts of the project and was considerably different from others previously analyzed, and 4) the Draft SEA did not deprive the public from meaningful review and comment. In addition, revisions to PAR 1168 and the analysis in response to verbal or written comments during the rule development process would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the Draft SEA pursuant to CEQA Guidelines Sections 15073.5 and 15088.5. Therefore, the Draft SEA has been revised to include the aforementioned modifications such that it is now the Final SEA.

**TABLE OF CONTENTS**

Page No.

**CHAPTER 1 – EXECUTIVE SUMMARY**

1.0 Introduction.....	1-1
1.1 California Environmental Quality Act.....	1-3
1.2 Previous CEQA Documentation .....	1-5
1.3 Intended Uses of this Document .....	1-6
1.4 Areas of Controversy .....	1-7
1.5 Executive Summary.....	1-11

**CHAPTER 2 – PROJECT DESCRIPTION**

2.1 Project Location .....	2-1
2.2 Project Background .....	2-2
2.3 Project Objectives.....	2-2
2.4 Project Description .....	2-2
2.5 Summary of Affected Adhesvie and Sealant Categories.....	2-9
2.6 Technology Overview .....	2-10

**CHAPTER 3 – EXISTING SETTING**

3.0 Introduction.....	3-1
3.1 Existing Setting .....	3-1
3.2 Air Quality and Greenhouse Gas Emissions.....	3-3
3.2.1 Criteria Air Pollutants.....	3-3
3.2.2 Greenhouse Gas Emissions.....	3-21

**CHAPTER 4 – ENVIRONMENTAL IMPACTS**

4.0 Introduction and Background.....	4-1
4.1 Potential Significant Air Quality and Greenhouse Gas Impacts and Mitigation Measures .....	4-3
4.1.1 Significance Criteria .....	4-3
4.1.2 Cumulative Air Quality Impacts.....	4-12
4.1.3 Greenhouse Gas Impacts and Mitigation Measures .....	4-13
4.2 Significant Environmental Effects Which Cannot Be Avoided.....	4-15
4.3 Potential Environmental Impacts Found Not To Be Significant .....	4-15
4.4 Potential Growth-Inducing Impacts .....	4-33
4.5 Relationship Between Short-Term and Long-Term Environmental Goals .....	4-36



**CHAPTER 5 – ALTERNATIVES**

5.0 Introduction.....	5-1
5.1 Methodology for Developing Project Alternatives .....	5-1
5.2 Description of Alternatives to the Proposed Project .....	5-1
5.3 Alternatives Analysis.....	5-3
5.4 Comparison of Alternatives to the Proposed Project .....	5-6
5.5 Alternatives Rejected as Infeasible .....	5-14
5.6 Lowest Toxic and Environmentally Superior Alternative .....	5-15
5.7 Conclusion.....	5-16

**CHAPTER 6 – REFERENCES**

6.0 References.....	6-1
---------------------	-----

**CHAPTER 7 – ACRONYMS**

7.0 Acronyms.....	7-1
-------------------	-----

**APPENDICES**

Appendix A: Proposed Amended Rule (PAR) 1168 – Adhesive and Sealant Applications

**LIST OF TABLES**

Table 1-1: Areas of Controversy.....	1-7
Table 1-2: Summary of the Proposed Project (PAR 1168) and Alternatives .....	1-16
Table 1-3: Comparison of Adverse Environmental Impacts of the Proposed Project (PAR 1168) and Alternatives .....	1-20
Table 2-1: Comparison of Proposed VOC Limits and Effective Dates to VOC Limits in October 2017 Version of Rule 1168.....	2-4
Table 2-2: QER Reporting Schedule.....	2-5
Table 2-3: Prohibition Effective Dates.....	2-7
Table 2-4: Adhesive and Sealant Categories Affected by PAR 1168.....	2-8
Table 3-1: State and Federal Ambient Air Quality Standards .....	3-4
Table 3-2: South Coast AQMD – 2019 Air Quality Data – CO.....	3-7
Table 3-3: South Coast AQMD – 2019 Air Quality Data – O3.....	3-9
Table 3-4: South Coast AQMD – 2019 Air Quality Data – NO2.....	3-11
Table 3-5: South Coast AQMD – 2019 Air Quality Data – SO2 .....	3-13
Table 3-6: South Coast AQMD – 2019 Air Quality Data – PM10.....	3-15
Table 3-7: South Coast AQMD – 2019 Air Quality Data – PM2.5.....	3-16
Table 3-8: South Coast AQMD – 2019 Air Quality Data – Lead and Sulfates.....	3-18
Table 4-1: South Coast AQMD Air Quality Significance Thresholds.....	4-4
Table 4-2: Proposed Changes to PAR 1168 and Estimated Delayed and Foregone VOC Emission Reductions.....	4-6
Table 4-3: Summary of Survey and online SDSs Search Results for Roofing Products Formulated with pCBtF .....	4-10
Table 4-4: Evaluation of Wildfire Impacts.....	4-25
Table 4-5: Evaluation of Tribal Cultural Resources Impacts .....	4-28
Table 5-1: Summary of Proposed Project (PAR 1168) and Alternatives.....	5-7
Table 5-2: Comparison of Adverse Environmental Impacts of the Proposed Project (PAR 1168) and Alternatives .....	5-11

**LIST OF FIGURES**

Figure 2-1: Southern California Air Basins and South Coast AQMD's Jurisdiction .....	2-1
Figure 3-1: 2019 Statewide GHG Emission Contributions by GHG.....	3-23
Figure 3-2: 2019 Statewide GHG Emission Contributions by Scoping Plan Sector .....	3-24

## **CHAPTER 1**

---

### **EXECUTIVE SUMMARY**

**Introduction**

**California Environmental Quality Act**

**Previous CEQA Documentation**

**Intended Uses of this Document**

**Areas of Controversy**

**Executive Summary**

## 1.0 INTRODUCTION

The California Legislature created the South Coast Air Quality Management District (South Coast AQMD) in 1977<sup>1</sup> as the agency responsible for developing and enforcing air pollution control rules and regulations in the South Coast Air Basin and portions of the Salton Sea Air Basin and Mojave Desert Air Basin. In 1977, amendments to the federal Clean Air Act (CAA) included requirements for submitting State Implementation Plans (SIPs) for nonattainment areas that fail to meet all federal ambient air quality standards [CAA Section 172], and similar requirements exist in state law [Health and Safety Code Section 40462]. The federal CAA was amended in 1990 to specify attainment dates and SIP requirements for ozone, carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), and particulate matter with an aerodynamic diameter of less than 10 microns (PM<sub>10</sub>). In 1997, the United States Environmental Protection Agency (U.S. EPA) promulgated ambient air quality standards for particulate matter with an aerodynamic diameter less than 2.5 microns (PM<sub>2.5</sub>). The U.S. EPA is required to periodically update the national ambient air quality standards (NAAQS).

In addition, the California Clean Air Act (CCAA), adopted in 1988, requires the South Coast AQMD to achieve and maintain state ambient air quality standards for ozone, CO, sulfur dioxide, and NO<sub>2</sub> by the earliest practicable date [Health and Safety Code Section 40910]. The CCAA also requires a three-year plan review, and, if necessary, an update to the SIP. The CCAA requires air districts to achieve and maintain state standards by the earliest practicable date and for extreme non-attainment areas, to include all feasible measures pursuant to Health and Safety Code Sections 40913, 40914, and 40920.5. The term “feasible” is defined in the California Environmental Quality Act (CEQA) Guidelines<sup>2</sup> Section 15364, as a measure “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.”

By statute, the South Coast AQMD is required to adopt an air quality management plan (AQMP) demonstrating compliance with all federal and state ambient air quality standards for the areas under the jurisdiction of the South Coast AQMD.<sup>3</sup> Furthermore, the South Coast AQMD must adopt rules and regulations that carry out the AQMP.<sup>4</sup> The AQMP is a regional blueprint for how the South Coast AQMD will achieve air quality standards and healthful air, and the 2016 AQMP<sup>5</sup> contains multiple goals promoting reductions of criteria air pollutants, greenhouse gases (GHGs), and toxic air contaminants (TACs). The 2016 AQMP states that both oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOC) emissions need to be addressed to reduce the formation of ozone and PM<sub>2.5</sub>. VOC is a precursor to the formation of ozone and PM<sub>2.5</sub>, and VOC emission reductions are necessary to achieve the ozone standard attainment. In particular, the 2016 AQMP includes control measure CTS-01 – Further Emission Reductions from Coatings, Solvents, Adhesives, and Sealants, which identifies Rule 1168 – Adhesive and Sealant Applications, a rule that regulates VOCs, as having the potential to achieve additional VOC emission reductions. In addition, the 2016 AQMP also includes control measure MCS-01 – Application of All Feasible Measures Assessment, which seeks to achieve emission reductions from all pollutants, including VOCs.

---

<sup>1</sup> The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., Ch. 324 (codified at Health and Safety Code Sections 40400-40540).

<sup>2</sup> The CEQA Guidelines are codified at Title 14 California Code of Regulations Section 15000 *et seq.*

<sup>3</sup> Health and Safety Code Section 40460(a).

<sup>4</sup> Health and Safety Code Section 40440(a).

<sup>5</sup> South Coast AQMD, Final 2016 Air Quality Management Plan, March 2017. <https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp>.

Rule 1168 includes 59 categories of adhesives, adhesive primers, sealants, and sealant primers with VOC limits and applies to products used during manufacturing at stationary sources as well as products used by consumers that are not regulated by the California Air Resources Board (CARB) in the Consumer Products Regulation (CPR). Amendments to Rule 1168 were adopted on October 6, 2017 to partially implement CTS-01 and MCS-01. The October 2017 amendments to Rule 1168 were designed to reduce emissions of VOCs, toxic air contaminants, and stratospheric ozone-depleting compounds from adhesives, adhesive primers, sealants, and sealant primers. Some of the key amendments focused on lowering the VOC limits for certain categories and allowing a three-year sell-through and four-year use-through; added new product categories with corresponding VOC content limits; required products marketed for use under varying categories to be subject to the lowest VOC limit; prohibited the use of Rule 102 Group II exempt solvents, except volatile methyl siloxanes; and removed, modified, or added various exemptions.

The October 2017 amendments to Rule 1168 also included a commitment to conduct a technology assessment for top and trim adhesives, roofing products, plastic welding cements, and foam sealants to determine if products for nine adhesive and sealant categories were available that could achieve the VOC limits by January 1, 2023. The technology assessment concluded that some of these product categories either needed more time beyond January 1, 2023 to meet the VOC limits or that achieving the lower VOC limits would not be technically feasible. Thus, staff has developed Proposed Amended Rule 1168 (PAR 1168) to adjust VOC limits and allow additional time for certain products to be reformulated.

In addition, due to potential toxicity concerns associated with tertiary-Butyl Acetate (t-BAC) and parachlorobenzotrifluoride (pCBtF) and the uncertainty of on-site exposure modeling methodologies, the Stationary Source Committee of the South Coast AQMD Governing Board recommended a precautionary approach such that compounds with a known or suspected toxic endpoint will not be exempted from the definition of VOC in Rule 102 or other South Coast AQMD Rules. In 2017, t-BAC was identified as a carcinogen after it had been previously granted a partial exemption from the definition of a VOC in certain uses in several source specific rules, e.g., Rule 1113 – Architectural Coatings and Rule 1151 – Automotive Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations, but not Rule 1168. Further, in 2020, pCBtF was identified as a stronger carcinogen than t-BAC, after it had been previously exempted from the definition of a VOC in Rule 102 for all uses within the South Coast AQMD, including adhesives and sealants that would otherwise be subject to Rule 1168 requirements. Because of toxicity concerns with both t-BAC and pCBtF, PAR 1168 also proposes to prohibit the use of these chemicals in adhesive and sealant products.

PAR 1168 will result in foregone emission reductions; however, it will result in reducing the potential for toxic chemicals to be used in the products.

Therefore, PAR 1168 proposes to: 1) prohibit the use of pCBtF and t-BAC due to toxicity concerns; 2) delay the effective dates of volatile organic compound (VOC) emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; 4) allow Opteon 1100 (cis-1,1,1,4,4,4-hexafluoro-2-butene/HFO-1336mzz-Z) as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an evaluation by the Office of Environmental Health Hazard Assessment (OEHHHA); and 45) ~~remove definitions, and update-and~~, clarify, and streamline rule language.

PAR 1168 is expected to ~~cause result in~~ delayed and permanent foregone VOC emission reductions of ~~0.42~~ ~~0.12~~-ton per day (tpd) and 0.28 tpd, respectively, due to extending the effective dates and maintaining the existing VOC limits for certain categories of Regulated Products, while lowering the potential for toxic chemicals to be used in adhesive and sealant products. The October 2017 amendments to Rule 1168 estimated VOC emission reductions of 1.38 tpd, so even with the 0.28 tpd of permanent foregone emission reductions, the rule amendment exceeded the commitment in the 2016 AQMP.

## 1.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA) requires that all potential adverse environmental impacts of proposed projects be evaluated and that methods to reduce or avoid identified significant adverse environmental impacts of these projects be implemented, if feasible. The purpose of the CEQA process is to inform the South Coast AQMD Governing Board, public agencies, and interested parties of potential adverse environmental impacts that could result from implementing the proposed project and to identify feasible mitigation measures or alternatives, when an impact is significant.

Public Resources Code Section 21080.5 allows public agencies with regulatory programs to prepare a plan or other written documents in lieu of a Negative Declaration or EIR once the Secretary of the Resources agency has certified the regulatory program. The South Coast AQMD's regulatory program was certified on March 1, 1989 [CEQA Guidelines Section 15251(l)]. In addition, the South Coast AQMD adopted Rule 110 – Rule Adoption Procedures to Assure Protection and Enhancement of the Environment, which implements the South Coast AQMD's certified regulatory program. Under the certified regulatory program, the South Coast AQMD typically prepares an Environmental Assessment (EA) to evaluate the environmental impacts for rule projects proposed for adoption or amendment.

PAR 1168 is considered a “project” as defined by CEQA. PAR 1168 proposes to: 1) prohibit the use of parachlorobenzotrifluoride (pCBtF) and tertiary-Butyl Acetate (t-BAc) due to toxicity concerns; 2) delay the effective dates of volatile organic compound (VOC) emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and 45) remove definitions, and update, and clarify, and streamline rule language. Implementation of the proposed project is estimated to ~~cause result in~~ delayed and permanent foregone VOC emission reductions of up to ~~0.42~~ ~~0.12~~- and 0.28 tpd, respectively, due to extending the effective dates and maintaining the existing VOC limits for certain categories of Regulated Products.

The purpose of the October 2017 amendments to Rule 1168 was to reduce emissions of VOCs by 1.38 tpd, as well as reduce toxic air contaminants, and stratospheric ozone-depleting compounds from adhesives, adhesive primers, sealants, and sealant primers. The October 2017 Final Environmental Assessment (EA)<sup>6</sup> for the October 2017 amendments to Rule 1168 was certified by the South Coast AQMD Governing Board on October 6, 2017 (referred to herein as the October 2017 Final EA for Rule 1168) and analyzed the environmental impacts associated with the activities manufacturers were anticipated to undertake to reformulate products and that these

<sup>6</sup> South Coast AQMD, 2017. Final Environmental Assessment (EA) for Proposed Amended Rule (PAR) 1168 – Adhesive and Sealant Applications, SCH No. 2017081031. <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2017/par1168FEA.pdf>

reformulation activities could create secondary adverse environmental impacts. None of the environmental topic areas previously analyzed in the October 2017 Final EA were concluded to have significant and unavoidable impacts, including the topic of air quality and greenhouse gases (GHGs).

When comparing the types of activities and associated environmental impacts with implementing the VOC limits and compliance dates subject to the Rule 1168 amendments that were previously analyzed in the October 2017 Final EA to the currently proposed changes which comprise PAR 1168, the type and extent of the physical changes are expected to be similar and will cause similar secondary adverse environmental impacts for the same environmental topic areas that were identified and analyzed in the October 2017 Final EA for Rule 1168. Thus, the proposed project is expected to have generally the same or similar effects that were previously examined in the October 2017 Final EA for Rule 1168 but that the air quality impacts from PAR 1168 will cause some delayed and permanent VOC emission reductions foregone, which will be more severe than what was discussed in October 2017 Final EA.

Therefore, the proposed project contains new information of substantial importance which was not known and could not have been known at the time the October 2017 Final EA for Rule 1168 was certified [CEQA Guidelines Section 15162(a)(3)]. Moreover, the analysis indicates that the type of CEQA document appropriate for the proposed project is a Subsequent Environmental Assessment (SEA), which contains the environmental analysis required by CEQA Guidelines Section 15187 and tiers off of the October 2017 Final EA for Rule 1168. Thus, this SEA is a subsequent document to the October 2017 Final EA for Rule 1168.

Because this is a subsequent document, the baseline is the project analyzed in the October 2017 Final EA for Rule 1168. The SEA is a substitute CEQA document prepared in lieu of a Subsequent EIR with significant impacts [CEQA Guidelines Section 15162], pursuant to the South Coast AQMD's Certified Regulatory Program [CEQA Guidelines Section 15251(1)]; codified in South Coast AQMD Rule 110. The SEA is also a public disclosure document intended to: 1) provide the lead agency, responsible agencies, decision makers, and the general public with information on the environmental impacts of the proposed project; and 2) be used as a tool by decision makers to facilitate decision making on the proposed project.

Thus, the South Coast AQMD, as lead agency for the proposed project has prepared this SEA with significant impacts. In addition, since significant adverse impacts have been identified, an alternatives analysis is required and has been included in this SEA.

The Draft SEA ~~is being~~ has been released and circulated for a 45-day public review and comment period from September 6, 2022 to October 21, 2021. No comment letters were received during the comment period. Any comments on the analysis presented in this Draft SEA received during the public comment period will be responded to and included in an appendix of the Final SEA.

The October 2017 Final EA for Rule 1168 (State Clearinghouse No. 2017081031) upon which this SEA relies, is incorporated by reference pursuant to CEQA Guidelines Section 15150 and is available from the South Coast AQMD's website at:

**October 2017 Final EA for Rule 1168:**

<http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2017/par1168FEA.pdf>

The above document may also be obtained from the South Coast AQMD's Public Information Center by calling (909) 396-2039 or by email [PICrequests@aqmd.gov](mailto:PICrequests@aqmd.gov), or by contacting Derrick Alatorre - Deputy Executive Officer/Public Advisor, South Coast AQMD, 21865 Copley Drive, Diamond Bar, CA 91765, (909) 396-2432, [PublicAdvisor@aqmd.gov](mailto:PublicAdvisor@aqmd.gov).

South Coast AQMD staff has reviewed the modifications made to PAR 1168 after the release of the Draft SEA for public review and comment and concluded that none of the revisions constitute significant new information, because: 1) no new significant environmental impacts would result from the proposed project; 2) there is no substantial increase in the severity of an environmental impact; 3) no other feasible project alternative or mitigation measure was identified that would clearly lessen the environmental impacts of the project and was considerably different from others previously analyzed, and 4) the Draft SEA did not deprive the public from meaningful review and comment. In addition, revisions to the proposed project and analysis in response to verbal or written comments during the rule development process would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the Draft SEA pursuant to CEQA Guidelines Sections 15073.5 and 15088.5. Therefore, the Draft SEA has been revised to include the aforementioned modifications such that it is now the Final SEA.

Prior to making a decision on the adoption of the proposed project, the South Coast AQMD Governing Board must review and certify the Final SEA, ~~including responses to comments~~, as providing adequate information on the potential adverse environmental impacts that may occur as a result of adopting PAR 1168.

## 1.2 PREVIOUS CEQA DOCUMENTATION

South Coast AQMD rules, as ongoing regulatory programs, have the potential to be revised over time due to a variety of factors (e.g., regulatory decisions by other agencies, new data, lack of progress in advancing the effectiveness of control technologies to comply with requirements in technology forcing rules, new more stringent national ambient air quality standards, etc.).

Rule 1168 was adopted in April 1989 to reduce VOC emissions from adhesive applications. The rule has been amended 14 times with the last amendment in October 2017. PAR 1168 has been developed to delay the effective dates of or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 6, 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; prohibit the use of t-BAC and pCBtF due to toxicity concerns; allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; remove definitions; and update, clarify, and streamline some definitions and other rule language. As allowed by CEQA Guidelines Sections 15152, 15162, and 15385, this SEA tiers off of the October 2017 Final EA for Rule 1168, which is summarized below:

**Final Environmental Assessment for Proposed Amended Rule 1168 – Adhesive and Sealant Applications; October 2017:** Amendments to Rule 1168 were adopted in October 2017 to reduce emissions of VOCs, toxic air contaminants, and stratospheric ozone-depleting compounds from adhesives, adhesive primers, sealants, and sealant primers. The amendments to Rule 1168 clarified the applicability; revised, deleted, and added various definitions; lowered the VOC limits for certain categories and allowed a three-year sell-through and use-through; added new product



categories with corresponding VOC content limits; required products marketed for use under varying categories to be subject to the lowest VOC limit; prohibited the storage of non-compliant products, unless for shipment outside of the South Coast AQMD; added test methods for analyzing VOC content; added labeling requirements; included reporting requirements for manufacturers, private labelers, big box retailers, distribution centers, and facilities that use a 55 gallon per year exemption; prohibited the use of Rule 102 Group II exempt solvents, except volatile methyl siloxanes; included a technology assessment for certain product categories; and removed, modified, or added various exemptions. Approximately 1.38 tpd of VOC emission reductions were expected to be achieved as a result of implementing the October 2017 version of Rule 1168. While the reduction of VOC emissions was expected to create an environmental benefit, the activities that manufacturers were expected to undertake to reformulate compliant products were anticipated to also create secondary adverse environmental impacts. The October 2017 Final EA for Rule 1168 analyzed the potential secondary adverse environmental impacts but none of the environmental topic areas analyzed were identified as having potentially significant adverse impacts. The South Coast AQMD Governing Board certified the Final EA and approved the amendments to Rule 1168 on October 6, 2017. The October 2017 Final EA can be obtained by visiting the South Coast AQMD website at: <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2017/par1168FEA.pdf>.

### 1.3 INTENDED USES OF THIS DOCUMENT

In general, a CEQA document is an informational document that informs a public agency's decision-makers and the public generally of potentially significant adverse environmental effects of a project, identifies possible ways to avoid or minimize the significant effects, and describes reasonable alternatives to the project [CEQA Guidelines Section 15121]. A public agency's decision-makers must consider the information in a CEQA document prior to making a decision on the project. Accordingly, this SEA is intended to: a) provide the South Coast AQMD Governing Board and the public with information on the environmental effects of the proposed project; and b) be used as a tool by the South Coast AQMD Governing Board to facilitate decision-making on the proposed project.

Additionally, CEQA Guidelines Section 15124(d)(1) requires a public agency to identify the following specific types of intended uses of a CEQA document:

1. A list of the agencies that are expected to use the SEA in their decision-making;
2. A list of permits and other approvals required to implement the project; and
3. A list of related environmental review and consultation requirements required by federal, state, or local laws, regulations, or policies.

There are no permits or other approvals required to implement PAR 1168. Moreover, PAR 1168 is not subject to any other related environmental review or consultation requirements.

To the extent that local public agencies, such as cities, county planning commissions, etc., are responsible for making land use and planning decisions related to projects that must comply with the requirements in the proposed project, they could possibly rely on this SEA during their decision-making process. Similarly, other single purpose public agencies approving projects at facilities complying with the proposed project may rely on this SEA.

## 1.4 AREAS OF CONTROVERSY

CEQA Guidelines Section 15123(b)(2) requires a public agency to identify the areas of controversy in the CEQA document, including issues raised by agencies and the public. Over the course of developing PAR 1168, the predominant concerns expressed by representatives of industry and environmental groups, either in public meetings or in written comments, regarding the proposed project are highlighted in Table 1-1.

**Table 1-1**  
**Areas of Controversy**

	<b>Area of Controversy</b>	<b>Topics Raised by the Public</b>	<b>South Coast AQMD Evaluation</b>
1.	The effect of the pCBtF prohibition on roofing products	Achieving the proposed VOC limits would not be possible without using pCBtF for formulations of some adhesives and sealants used in roofing applications	<p>While some roofing products that were previously formulated with pCBtF will no longer allowed to be used if PAR 1168 is adopted, the following factors were considered:</p> <ol style="list-style-type: none"> <li>1) Currently, there are other roofing products commercially available on the market that are not formulated with pCBtF but have been demonstrated to comply with the previous VOC limits in effect prior to the October 6, 2017 amendments to Rule 1168 and these are the same VOC limits which are proposed in PAR 1168. Thus, no substantial interruption in the market supply of compliant roofing adhesives is expected.</li> <li>2) The long-term health benefit of prohibiting pCBtF, a toxic compound with substantial adverse carcinogenic health effects, would outweigh the short-term inconvenience associated with market shift of certain manufacturers pivoting from formulating roofing adhesives with pCBtF to those without pCBtF;</li> <li>3) The proposed <u>January 1, 2027 effective date of the prohibition for Cut Edge Single Ply Roof Membrane Sealants, EPDM/TPO Single Ply Roof Membrane Adhesive, and Roof Adhesive primers, the proposed January 1, 2025 effective date of the prohibition for Single Ply Roof Membrane Adhesive Sealants (Except Cut Edge), Single Ply Roof Membrane Adhesive (Except EPDM/TPO), Roof Sealant Primers, and All other Roof Sealants,</u> and the proposed January 1, 2024 effective date for all other Regulated Products <u>not listed above,</u> <del>and</del> <u>as well as the inclusion of a three-year sell-through and four-year use-through provisions which</u> will provide the manufacturer(s) sufficient time to phase out pCBtF.</li> </ol>

**Table 1-1 (continued)**  
**Areas of Controversy**

	<b>Area of Controversy</b>	<b>Topics Raised by the Public</b>	<b>South Coast AQMD Evaluation</b>
2.	The effect of the pCBtF prohibition on Clear, Paintable, and Immediately Water-Resistant Sealants	pCBtF was utilized to reformulate Clear, Paintable, and Immediately Water-resistant Sealants to work toward meeting the 250 grams per liter (g/L) limit effective January 1, 2023	<ol style="list-style-type: none"> <li>1) PAR 1168 includes a provision which delays implementation of the pCBtF prohibition by <del>one</del> <u>three years</u> for <u>this product category</u> <del>sealants</del>.</li> <li>2) The proposed effective date of the prohibition also includes a <del>two</del><u>three</u>-year sell through and a <del>two</del><u>four</u>-year use-through provision, which will provide the manufacturer(s) sufficient time to phase out pCBtF.</li> <li>3) Other <del>architectural sealants and all other roof sealants with water resistant and/or water proof capabilities</del> <u>Clear Paintable, and Immediately Water-Resistant Sealants</u> are currently commercially available on the market that meet the 250 g/L <del>and 50 g/L</del> VOC limit, <u>some formulated below 50 g/L, respectively and that</u> could replace <del>formulations of this type of</del> sealants containing pCBtF.</li> <li>4) The long-term health benefit of prohibiting pCBtF, a toxic compound with substantial adverse carcinogenic health effects, would outweigh the need to have a sealant that is both clear and paintable since these products are being used by consumers.</li> </ol>

**Table 1-1 (continued)**  
**Areas of Controversy**

	<b>Area of Controversy</b>	<b>Topics Raised by the Public</b>	<b>South Coast AQMD Evaluation</b>
3.	Request to exempt Opteon 1100 from the definition of VOC	The exemption of Opteon 1100 Two-Component Foam Sealant, would help expand the product options and provide relief for supply issues	<p>1) The Office of Environmental Health Hazard Assessment (OEHHA), a specialized department within the California Environmental Protection Agency (CalEPA) with responsibility for evaluating health risks from environmental chemical contaminants, has not evaluated Opteon 1100. However, Opteon 1100 is a hydrofluoro-olefin (HFO) which may have the potential to break down into perfluoroalkyl and polyfluoroalkyl substances (PFAS), commonly referred to as forever chemicals, through atmospheric degradation, and thus could have serious health impacts.</p> <p>2) <del>PAR 1168 Staff is considering the request to include a conditional and limited exemption for Opteon 1100 in PAR 1168 in the definition for Exempt Compound. The exemption would be allow the use of Opteon 1100 limited to use in formulations of High-Pressure Two-Component Foam Sealants and Low-Pressure Two-Component Foam Sealants applied used in an industrial or professional setting. The exemption would also be contingent on the results of an assessment conducted by OEHHA. The exemption would not go into effect unless: 1) OEHHA has sufficient information to establish a Cancer Inhalation Unit Risk Factor and does not adopt a cancer risk factor for Opteon 1100; and 2) OEHHA has sufficient information to establish an acute reference exposure level (REL) and a chronic REL of Opteon 1100 and the acute REL (or interim acute REL) and a chronic REL (or interim chronic REL) for Opteon 1100 are higher than those for the RELs for the Hydrofluoro-Olefin (HFO) it would replace.</del></p>

**Table 1-1 (concluded)**  
**Areas of Controversy**

	<b>Area of Controversy</b>	<b>Topics Raised by the Public</b>	<b>South Coast AQMD Evaluation</b>
4.	<u>Remove the reference of ASTM Test Method D7767-11</u>		<ol style="list-style-type: none"> <li>1) <u>Staff is proposing to delete the definition for Energy Curable Adhesives and Sealants, which was added during the 2017 rule amendment as a mechanism to include ASTM Test Method D7767-11 which is a test method for thin film Ultra Violet/Electron Beam/Light Emitting Diode (UV/EB/LED) materials, also referred to as Energy Curable materials. RadTech, the trade association that represents the UV/EB/LED industry, objects to the removal of this definition.</u></li> <li>2) <u>On August 22, 2022, the U.S. EPA proposed a limited disapproval of Rule 1106 - Marine and Pleasure Craft Coatings and Rule 1107 – Coating of Metal Parts and Products due to the inclusion of ASTM Test Method D7767-11, which is not approved by the U.S. EPA and therefore cannot be used to enforce a SIP-approved rule. The U.S. EPA deemed the provisions that reference ASTM Test Method D7767-11 did not satisfy the requirements of section 110 and part D of the Clean Air Act and thus prevented full approval of the rules.</u></li> <li>3) <u>The removal of the definition of Energy Curable Adhesives and Sealants will remove the reference to this test method to avoid a SIP disapproval.</u></li> <li>4) <u>Manufacturers can rely on formulation data to calculate the VOC content of their products to determine if they comply with rule limits. The South Coast AQMD developed a Test Method Guidance Document for Rule 1168 that states that formulation data is the appropriate tool for manufacturers to verify compliance for thin film UV/EB/LED curable products.</u></li> </ol>

Pursuant to CEQA Guidelines Section 15131(a), “[e]conomic or social effects of a project shall not be treated as significant effects on the environment.” CEQA Guidelines Section 15131(b) states further, “[e]conomic or social effects of a project may be used to determine the significance of physical changes caused by the project.” Physical changes that may be caused by the proposed project have been evaluated in Chapter 4 of this Draft SEA. No direct or indirect physical changes resulting from economic or social effects have been identified as a result of implementing PAR 1168.

## 1.5 EXECUTIVE SUMMARY

CEQA Guidelines Section 15123 requires a CEQA document to include a brief summary of the proposed actions and their consequences. In addition, areas of controversy must also be included in the executive summary (see preceding discussion). This SEA consists of the following chapters: Chapter 1 – Executive Summary; Chapter 2 – Project Description; Chapter 3 – Existing Setting; Chapter 4 – Environmental Impacts; Chapter 5 – Alternatives; Chapter 6 – References; Chapter 7 – Acronyms; and various appendices. The following subsections briefly summarize the contents of Chapters 1 through 5.

### Summary of Chapter 1 – Executive Summary

Chapter 1 includes an introduction of the proposed project and a discussion of the legislative authority that allows the South Coast AQMD to amend and adopt air pollution control rules, identifies general CEQA requirements and the intended uses of this CEQA document, and summarizes the remaining four chapters that comprise this SEA.

### Summary of Chapter 2 – Project Description

Efforts to develop PAR 1168 began after the technology assessment required by the October 2017 amendments to Rule 1168 was conducted and completed for nine adhesive and sealant categories. The purpose of the technology assessment was to determine if the technology progressed to the extent that commercially available adhesive and sealant products were formulated to achieve the future VOC limits by the effective date of January 1, 2023. In addition, amendments to Rule 1168 were necessary to address the Stationary Source Committee's recommendation to take a precautionary approach when considering a new exemption for any compound with a toxic endpoint and to remove the exemption for any compound that has an established toxic endpoint.

PAR 1168 proposes to: 1) prohibit the use of pCBtF and t-BAC due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and 45) remove definitions, and update, and clarify, and streamline rule language. PAR 1168 is expected to cause delayed and permanent foregone VOC emission reductions of 0.42 0.12 tpd and 0.28 tpd, respectively, due to extending the effective dates and maintaining the existing VOC limits for certain categories of Regulated Products. A copy of PAR 1168 can be found in Appendix A of this SEA.

### Summary of Chapter 3 – Existing Setting

Pursuant to CEQA Guidelines Section 15125, Chapter 3 – Existing Setting includes a description of the existing environmental setting of the environmental topic areas that are expected to have potentially significant adverse impacts if the proposed project is implemented.

PAR 1168 has been developed to delay the effective dates of or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 6, 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; prohibit the use of t-BAC and pCBtF due to toxicity concerns; allow limited exemption of Opteon 1100 for manufacturing Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and clarify some

definitions and other rule language. As allowed by CEQA Guidelines Sections 15152, 15162, and 15385, this SEA tiers off of the October 2017 Final EA for Rule 1168.

The existing environmental setting is the physical environmental conditions as they existed at the time the Notice of Preparation (NOP) and Initial Study (IS) was published, or if no NOP/IS is published, at the time the environmental analysis is commenced [CEQA Guidelines Section 15125]. For the October 2017 amendments to Rule 1168, no NOP/IS was prepared but the environmental analysis ~~was~~ commenced on August 16, 2017 when the Notice of Completion (NOC) announcing the availability of the Draft EA was released for public review and comment. The Draft EA for PAR 1168 contained an environmental checklist, the same environmental checklist used when preparing a NOP/IS, plus a detailed analysis of the environmental setting and corresponding environmental effects specifically tailored to implementing the proposed amendments at that time. When comparing the types of activities and associated environmental impacts with implementing the VOC limits and compliance dates subject to the October 2017 version of Rule 1168, which was previously analyzed in the October 2017 Final EA, to the currently proposed changes which comprise PAR 1168, the type and extent of the physical changes are expected to be similar and will cause similar secondary adverse environmental impacts for the same environmental topic areas that were identified and analyzed in the October 2017 Final EA. The analysis of the effects of PAR 1168 indicates that the topic of air quality will be affected due to delayed and permanent VOC emission reductions foregone, which will be more severe than what was previously contemplated in October 2017 Final EA. Based on the preceding discussion, the baseline that was established at the time the NOC was published for the August 2017 Draft EA directly corresponds to the currently proposed project since the affected categories of coatings and adhesives, and the nature of the physical impacts that may occur as a result of implementing PAR 1168 are the same or similar to the previous analysis in the October 2017 Final EA. Thus, the baseline for the analysis in this SEA is the project analyzed in the October 2017 Final EA.

This SEA analyzes the incremental changes that may occur subsequent to the October 2017 Final EA if PAR 1168 is implemented. In addition, the analysis in this SEA independently considered whether the proposed project would result in new significant impacts for any of the other environmental topic areas previously concluded in the October 2017 Final EA to have either no significant impacts or less than significant impacts and only the topic of air quality was identified as having potentially significant adverse impacts. A description and the basis for this conclusion is included in Chapter 4 of this SEA.

As such, Chapter 3 of this ~~Draft-Final~~ SEA contains subchapters devoted to describing the existing setting for the air quality which was the only environmental topic area identified as having potentially significant adverse environmental impacts if PAR 1168 is implemented.

#### **Summary of Chapter 4 – Environmental Impacts**

CEQA Guidelines Section 15126(a) requires a CEQA document to identify and focus on the “significant environmental effects of the proposed project.” Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. In addition, CEQA Guidelines Section 15126(b) requires a CEQA document to identify the significant environmental effects that cannot be avoided if the proposed project is implemented. CEQA Guidelines Section 15126(c) also requires a CEQA document to consider and discuss the significant irreversible environmental changes that would be involved if the proposed project is implemented. Further, CEQA Guidelines Section 15126(e) requires a CEQA document to consider and discuss mitigation measures

proposed to minimize the significant effects. Finally, CEQA Guidelines Section 15130 requires a CEQA document to discuss whether the proposed project has cumulative impacts. Chapter 4 considers and discusses each of these requirements.

PAR 1168 has been developed to delay the effective dates of or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 6, 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; prohibit the use of t-BAC and pCBtF due to toxicity concerns; allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and clarify some definitions and other rule language. As allowed by CEQA Guidelines Sections 15152, 15162, and 15385, this SEA tiers off of the October 2017 Final EA for Rule 1168. As explained in the Summary of Chapter 3, the baseline for the analysis in this SEA is the project analyzed in the October 2017 Final EA.

This SEA is a comprehensive environmental document that programmatically analyzes potential incremental environmental impacts from implementing the proposed project relative to the existing setting established in the October 2017 Final EA for Rule 1168. The analysis examines the activities that manufacturers of adhesives and sealants would be expected to undertake to comply with PAR 1168.

### **Potential Environmental Impacts Found To Be Significant**

This SEA tiers off of the October 2017 Final EA for Rule 1168 which concluded that no environmental topic areas, including the topic of air quality and GHGs, would be significantly adversely affected associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds.

The analysis in this SEA independently considers whether PAR 1168 would result in new significant impacts for any environmental topic areas previously concluded in the October 2017 Final EA for Rule 1168 to have either no significant impacts or less than significant impacts. Among the environmental areas examined for PAR 1168, only the topic of air quality will have new significant impacts due to the potential for delayed and permanent VOC emission reductions foregone, which will be more severe than what was discussed in October 2017 Final EA. A description and the basis for this conclusion is also included in this section.

PAR 1168 has been developed to delay the effective dates of or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 6, 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; prohibit the use of t-BAC and pCBtF due to toxicity concerns; allow limited exemption of Opteon 1100 for manufacturing Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and clarify some definitions and other rule language. Compliance with PAR 1168 is expected to ~~cause~~ result in delayed VOC emission reductions for the categories of Top and Trim Adhesive, ~~and~~ Higher Viscosity CPVC Welding Cement, Clear, Paintable, Immediately Water-Resistant Sealant, and Rubber Vulcanization Adhesive due to extending the effective date to comply with VOC limits that were adopted in the October 6, 2017 version of Rule 1168. In addition, PAR 1168 is likely to



~~cause result in~~ delayed VOC emission reductions from a proposed new subcategory of foam sealants, One-Component Foam Sealant, due to a combination of increasing the VOC limit from 50 g/L to 18 percent by weight and delaying the effective date from January 1, 2023 to July 1, 2023. Permanent foregone VOC emission reductions are also expected if the proposed higher VOC contents for certain categories of Regulated Products, including One-Component Foam Sealant, CPVC Welding Cement for Life Safety Systems, All Other Roof Adhesives, Single Ply Roof Membrane Adhesive (including both subcategories of with and without Ethylene Propylene Diene Terpolymer (EPDM) and Thermoplastic Polyolefin (TPO)), and All Other Roof Sealants, are adopted.

As such, if PAR 1168 is implemented, significant and unavoidable adverse environmental impacts to the air quality during operation are expected to occur.

### **Potential Environmental Impacts Found Not To Be Significant**

CEQA requires the SEA to identify the environmental topic areas that were analyzed and concluded to have no impacts or less than significant impacts if the proposed project is implemented. For the environmental topic areas identified as having no impacts, CEQA Guidelines Section 15128 requires the analysis to contain a statement briefly indicating the reasons that various effects of a project were determined not to have significant impacts and were therefore not discussed in detail.

As explained earlier, the October 2017 Final EA for Rule 1168 concluded that all of the environmental topic areas, including the topic of air quality and GHGs, would have either less than significant impacts or no impacts. This subchapter of the SEA identifies and summarizes these previously analyzed environmental topic areas and assesses whether the conclusions for these environmental topic areas would need to be revised if PAR 1168 is implemented. Also, since the new environmental topic area of wildfires was added to the CEQA Guidelines after the October 2017 Final EA was certified, this section analyzes whether the PAR 1168 would cause any wildfire-associated impacts.

As such, if PAR 1168 is implemented, the conclusions of no impact or less than significant impact for all of the environmental topic areas, except for air quality during operation as analyzed in the previous section of this chapter, will remain unchanged.

### **Other CEQA Topics**

CEQA documents are also required to consider and discuss the potential for growth-inducing impacts [CEQA Guidelines Section 15126(d)] and to explain and make findings about the project's relationship between short-term and long-term environmental goals [CEQA Guidelines Section 15065(a)(2)]. Additional analysis in Chapter 4 confirms that PAR 1168 would not result in irreversible environmental changes or the irretrievable commitment of resources, foster economic or population growth, or the construction of additional housing. Further, implementation of the PAR 1168 is not expected to achieve short-term goals to the disadvantage of long-term environmental goals.

### **Summary Chapter 5 - Alternatives**

Since significant air quality impacts during operation are associated with PAR 1168, CEQA Guidelines Section 15126(e) requires a CEQA document to consider and discuss alternatives to the proposed project. The following alternatives to the proposed project were identified and are summarized in Table 1-2: 1) Alternative A – No Project; 2) Alternative B – More Stringent

Proposed Project; 3) Alternative C – Less Stringent Proposed Project; and 4) Alternative D – Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168.

Pursuant to the requirements in CEQA Guidelines Section 15126.6(b) to mitigate or avoid the significant effects that a project may have on the environment, a comparison of the potentially significant adverse operational air quality impacts from each of the project alternatives for the individual rule components that comprise PAR 1168 is provided in Table 1-3. Aside from operational air quality impacts, no other potentially significant adverse impacts were identified for the proposed project or any of the project alternatives. The proposed project provides the best balance in achieving the project objectives while minimizing the significant adverse environmental impacts to operational air quality. Therefore, the proposed project is preferred over the project alternatives.

**Table 1-2**  
**Summary of the Proposed Project (PAR 1168) and Alternatives**

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
<b>Top and Trim Adhesive</b>	No change to existing 250 g/L limit but extend effective date to 1/1/2028	250 g/L by 1/1/2023	250 g/L by 1/1/2027	250 g/L by 1/1/2029	Same as Proposed Project
<b>One-Component Foam Sealant (new subcategory)</b>	18% VOC by weight, and extend effective date to 7/1/2023	50 g/L by 1/1/2023 (for general category of Foam Sealant in the October 2017 version of Rule 1168)	18% VOC by weight by 1/1/2023	18% VOC by weight by 7/1/2024	50 g/L by 1/1/2030
<b>High-Pressure Two-Component Foam Sealant (new subcategory)</b>	5% VOC by weight by 1/1/2023	50 g/L by 1/1/2023 (for general category of Foam Sealant in the October 2017 version of Rule 1168)	Same as Proposed Project	5% VOC by weight by 1/1/2024	50 g/L by 1/1/2030
<b>Low-Pressure Two-Component Foam Sealant (new subcategory)</b>	5% VOC by weight by 1/1/2023		Same as Proposed Project	5% VOC by weight by 1/1/2024	
<b>Single Ply Roof Membrane Adhesive (including new subcategories of with and without EPDM/TPO)</b>	250 g/L, effective upon adoption	200 g/L by 1/1/2023	Same as Proposed Project	Same as Proposed Project	200 g/L by 1/1/2030
<b>All Other Roof Sealants</b>	300 g/L, effective upon adoption	250 g/L by 1/1/2023	Same as Proposed Project	Same as Proposed Project	250 g/L by 1/1/2030
<b>All Other Roof Adhesives</b>	250 g/L limit, effective upon adoption	200 g/L by 1/1/2023	Same as Proposed Project	Same as Proposed Project	200 g/L by 1/1/2030

**Table 1-2 (continued)**  
**Summary of the Proposed Project (PAR 1168) and Alternatives**

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
<b>CPVC Welding Cement for Life Safety Systems (new subcategory)</b>	490 g/L, effective upon adoption	400 g/L by 1/1/2023 (for general category of CPVC Welding Cement in the October 2017 version of Rule 1168)	Same as Proposed Project	Same as Proposed Project	400 g/L by 1/1/2030
<b>Higher Viscosity CPVC Welding Cement (new subcategory)</b>	No change to existing 400 g/L limit but extend effective date to 7/1/2024	400 g/L by 1/1/2023 (for general category of CPVC Welding Cement in the October 2017 version of Rule 1168)	400 g/L limit by 1/1/2024	400 g/L limit by 7/1/2025	Same as Proposed Project
<b><u>Clear, Paintable, Immediately Water-Resistant Sealant</u></b>	<u>No change to existing 250 g/L limit but extend effective date to 1/1/2026</u>	<u>250 g/L by 1/1/2023</u>	<u>250 g/L by 1/1/2025</u>	<u>250 g/L by 1/1/2027</u>	<u>Same as Proposed Project</u>
<b><u>Rubber Vulcanization Adhesive</u></b>	<u>No change to existing 250 g/L limit but extend effective date to 1/1/2028</u>	<u>250 g/L by 1/1/2023</u>	<u>250 g/L by 1/1/2027</u>	<u>250 g/L by 1/1/2029</u>	<u>Same as Proposed Project</u>

**Table 1-2 (continued)**  
**Summary of the Proposed Project (PAR 1168) and Alternatives**

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
<b>Prohibition of Sales and Use</b>	<p>No use, supply, sell, or offer for sale of <u>Regulated Products that contain more than 0.01% by weight of the following: chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene, or and all Group II exempt compounds solvents except volatile methyl siloxanes (VMS)</u></p> <p>Prohibit the use of <del>t-BAC and pCBtF</del> in manufacturing <u>Regulated Products</u> on and after 1/1/2024 (except for:</p> <ul style="list-style-type: none"> <li>— Single Ply Roof Membrane</li> <li>- Adhesive (except EPDM/TPO), <u>Single Ply Roof Membrane Sealants (Except Cut Edge), All Other Roof Sealants, and Roof Sealant Primer with a manufacturing prohibition effective date on and after of 1/1/2025</u></li> <li>- <u>Clear, Paintable, and Immediately Water Resistant Sealant with a prohibition date of 1/1/2026</u></li> <li>- <u>Roof Adhesive Primer, Cut Edge Single Ply Roof Membrane Sealant, and EPDM/TPO Single Ply Roof Membrane Adhesive with a prohibition effective date of 1/1/2027</u></li> </ul>	<p>No use, supply, sell, or offer for sale of Group II exempt compounds</p> <p>No prohibition on manufacture, supply, use, sell, or offer for sale of t-BAC and pCBtF</p>	Same as Proposed Project	Same as Proposed Project	Same as Proposed Project

**Table 1-2 (concluded)**  
**Summary of the Proposed Project (PAR 1168) and Alternatives**

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
<b>Prohibition of Sales and Use (concluded)</b>	<p><u>Prohibit the use of t-BAC in manufacturing Regulated Products on and after 1/1/2024</u></p> <p><u>Prohibit supply, sell, or offer for sale of Regulated Products containing pCBtF on and after:</u></p> <ul style="list-style-type: none"> <li>- <u>1/1/2028 for Clear, Paintable, and Immediately Water-Resistant Sealant, Single Ply Roof Membrane Adhesive (Except EPDM/TPO), Single Ply Roof Membrane Sealant (Except Cut Edge), EPDM/TPO Single Ply Roof Membrane Adhesive, Cut Edge Single Ply Roof Membrane Sealant, Roof Adhesive Primer, Roof Sealant Primer, and All other Roof Sealant</u></li> <li>- <u>1/1/2027 for all Regulated Products not listed above.</u></li> </ul> <p><u>Prohibit supply, sell, or offer for sale of Regulated Products containing t-BAC and pCBtF three years after manufacturing prohibition effective date on and after 1/1/2027 for all Regulated Products.</u></p> <p><u>Prohibit use of Regulated Products containing t-BAC and pCBtF on and after 1/1/2028 for all Regulated Products four years after manufacturing prohibition effective date</u></p>	<p>No use, supply, sell, or offer for sale of Group II exempt compounds</p> <p>No prohibition on manufacture, supply, use, sell, or offer for sale of t-BAC and pCBtF</p>	Same as Proposed Project	Same as Proposed Project	Same as Proposed Project

\*The No Project alternative means retaining the VOC limits and effective dates as established in the October 2017 version of Rule 1168.

**Table 1-3**  
**Comparison of Adverse Environmental Impacts of the Proposed Project (PAR 1168) and Alternatives**

<b>Air Quality &amp; GHGs Impact Areas</b>	<b>Proposed Project (PAR 1168)</b>	<b>Alternative A: No Project</b>	<b>Alternative B: More Stringent Proposed Project</b>	<b>Alternative C: Less Stringent Proposed Project</b>	<b>Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168</b>
<b>Construction</b>	<b>No Significant Impacts</b> because no physical modifications involving construction required	<b>No Significant Impacts</b> Same as Proposed Project	<b>No Significant Impacts</b> Same as Proposed Project	<b>No Significant Impacts</b> Same as Proposed Project	<b>No Significant Impacts</b> Same as Proposed Project
<b>GHGs</b>	<b>No Significant Impacts</b> because chemicals used for reformulating compliant products do not contain any GHG compounds, <u>except for Two-Component Foam Sealants which use foam blowing agents that contain HFOs, which are GHGs with a low GWP. Under PAR 1168, Opteon 1100 may be used as a replacement (contingent upon OEEHA's assessment for toxicity concerns) but it also uses a foam blowing agent with a low GWP.</u>	<b>No Significant Impacts</b> Same as Proposed Project	<b>No Significant Impacts</b> Same as Proposed Project	<b>No Significant Impacts</b> Same as Proposed Project	<b>No Significant Impacts</b> Same as Proposed Project

**Table 1-3 (continued)**  
**Comparison of Adverse Environmental Impacts of the Proposed Project (PAR 1168) and Alternatives**

Air Quality & GHGs Impact Areas	Proposed Project (PAR 1168)	Alternative A: No Project	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Operation – VOC Emissions	<p><b>Potentially Significant VOC Impacts</b> due to:</p> <ol style="list-style-type: none"> <li>1) Delayed VOC emission reductions of <u>0.42 0.12</u> tpd from:               <ol style="list-style-type: none"> <li>a) Top and Trim Adhesive - 0.1 tpd until 1/1/2028</li> <li>b) One-Component Foam Sealant - 0.01 tpd until 7/1/2023</li> <li>c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 7/1/2024</li> <li>d) <u>Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 tpd until 1/1/2026</u></li> <li>e) <u>Rubber Vulcanization Adhesive - 0.29 tpd until 1/1/2028</u></li> </ol> </li> <li>2) Permanent VOC emission reductions foregone of 0.28 tpd from:               <ol style="list-style-type: none"> <li>a) One-Component Foam Sealant - 0.12 tpd</li> <li>b) CPVC Welding Cement for Life Safety Systems - 0.01 tpd</li> <li>c) All Other Roof Adhesives - 0.03 tpd</li> <li>d) Single Ply Roof Membrane Adhesive <u>(including both subcategories of with and without EPDM/TPO – 0.07 tpd</u></li> <li>e) All Other Roof Sealants - 0.05 tpd</li> </ol> </li> </ol>	<p><b>No Significant VOC Impacts</b> due to 1.38 tpd VOC permanent emission reductions</p>	<p><b>Potentially Significant VOC Impacts</b> due to:</p> <ol style="list-style-type: none"> <li>1) Same delayed VOC emission reductions of <u>0.42 0.12</u> tpd but over a shorter period from:               <ol style="list-style-type: none"> <li>a) Top and Trim Adhesive - 0.1 tpd until 1/1/2027</li> <li>b) One-Component Foam Sealant - 0.01 tpd until 1/1/2023</li> <li>c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 1/1/2024</li> <li>d) <u>Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 tpd until 1/1/2025</u></li> <li>e) <u>Rubber Vulcanization Adhesive - 0.29 tpd until 1/1/2027</u></li> </ol> </li> <li>2) Permanent VOC emission reductions foregone of 0.28 tpd - Same as Proposed Project.</li> </ol>	<p><b>Potentially Significant VOC Impacts</b> due to:</p> <ol style="list-style-type: none"> <li>1) Same delayed VOC emission reductions of <u>0.42 0.12</u> tpd but over a longer period from:               <ol style="list-style-type: none"> <li>a) Top and Trim Adhesive - 0.1 tpd until 1/1/2029</li> <li>b) One-Component Foam Sealant - 0.01 tpd until 7/1/2024</li> <li>c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 7/1/2025</li> <li>d) <u>Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 tpd until 1/1/2027</u></li> <li>e) <u>Rubber Vulcanization Adhesive - 0.29 tpd until 1/1/2029</u></li> </ol> </li> <li>2) Permanent VOC emission reductions foregone of 0.28 tpd - Same as Proposed Project</li> </ol>	<p><b>Potentially Significant VOC Impacts</b> due to:</p> <ol style="list-style-type: none"> <li>1) Greater delayed VOC emission reductions of <u>0.70 0.40</u> tpd over a longer period from:               <ol style="list-style-type: none"> <li>a) Top and Trim Adhesive - 0.1 tpd until 1/1/2028</li> <li>b) <u>One-Component Foam Sealant</u> <del>(One-Component and Two-Component)</del> - 0.13 tpd until 1/1/2030</li> <li>c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 7/1/2024</li> <li>d) CPVC Welding Cement for Life Safety Systems - 0.01 tpd until 1/1/2030</li> <li>e) All Other Roof Adhesives – 0.03 tpd until 1/1/2030</li> <li>f) Single Ply Roof Membrane Adhesive <u>(including both subcategories of with and without EPDM/TPO) – 0.07 tpd until 1/1/2030</u></li> <li>g) All Other Roof Sealants: 0.05 tpd until 1/1/2030</li> <li>h) <u>Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 tpd until 1/1/2026</u></li> <li>i) <u>Rubber Vulcanization Adhesive – 0.29 tpd until 1/1/2028</u></li> </ol> </li> <li>2) No permanent VOC emission reductions foregone</li> </ol>



**Table 1-3 (concluded)**  
**Comparison of Adverse Environmental Impacts of the Proposed Project (PAR 1168) and Alternatives**

Air Quality & GHGs Impact Areas	Proposed Project (PAR 1168)	Alternative A: No Project	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Operation – Toxicity and Odor Nuisance	Less than Significant Toxicity and Odor Nuisance Impacts due to reduced toxicity and odor profile from prohibition of t-BAC and pCBtF.	<p>Potentially Significant Toxicity Impacts from ongoing existing toxicity impacts due to no prohibition on t-BAC and pCBtF despite their carcinogenic and acute health effects.</p> <p>Less than significant odor nuisance impacts.</p>	<p>Less than Significant Toxicity Impacts due to reduced toxicity and odor profile from prohibition of t-BAC and pCBtF - Same as Proposed Project.</p> <p>Less than significant odor nuisance impacts - Same as Proposed Project.</p>	<p>Less than Significant Toxicity Impacts due to reduced toxicity and odor profile from prohibition of t-BAC and pCBtF - Same as Proposed Project.</p> <p>Less than significant odor nuisance impacts - Same as Proposed Project.</p>	Less than Significant Toxicity and Odor Nuisance Impacts due to reduced toxicity and odor profile from prohibition of t-BAC and pCBtF - Same as Proposed Project.

**Summary Chapter 6 - References**

This chapter contains a list of the references, and the organizations and persons consulted for the preparation of this SEA.

**Summary Chapter 7 - Acronyms**

This chapter contains a list of the acronyms that were used throughout the SEA and the corresponding definitions.

**Appendix A**

This appendix contains the latest version of PAR 1168.

## **CHAPTER 2**

---

### **PROJECT DESCRIPTION**

**Project Location**

**Project Background**

**Project Objectives**

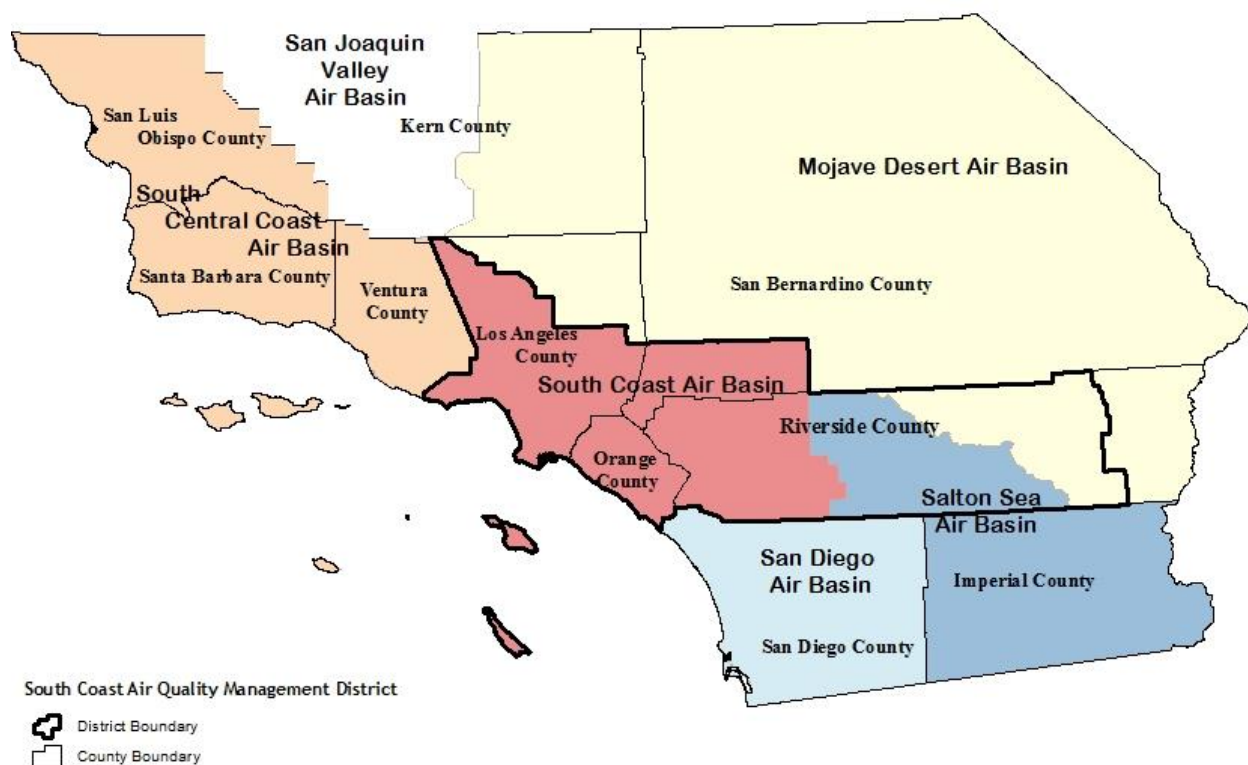
**Project Description**

**Summary of Affected Adhesive and Sealant Categories**

**Technology Overview**

## 2.1 PROJECT LOCATION

The South Coast AQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county South Coast Air Basin (Basin), the Riverside County portion of the Salton Sea Air Basin (SSAB) and the non-Palo Verde, Riverside County portion of the Mojave Desert Air Basin (MDAB). The Basin, a subarea of South Coast AQMD's jurisdiction, is bounded by the Pacific Ocean to the west, the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east and includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. A federal non-attainment area (known as the Coachella Valley Planning Area) is a subregion of Riverside County and the SSAB that is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (see Figure 2-1).



**Figure 2-1**  
**Southern California Air Basins and South Coast AQMD's Jurisdiction**

## 2.2 PROJECT BACKGROUND

Rule 1168 was adopted in April 1989 to control VOC emissions from adhesive applications. The rule has been amended 14 times; the last amendment was in October 2017. The rule applies to products that were used during manufacturing at stationary sources and to products used by consumers that were not regulated by the CARB CPR. Currently there are VOC limits established for 59 categories of adhesives, adhesive primers, sealants, and sealant primers.

Rule 1168 requires a technology assessment to be performed in 2020 and 2022 for nine categories subject to Rule 1168 including Foam Sealants, Plastic Welding Cements, Roofing Products, and Top and Trim categories. In April 2017, the Stationary Source Committee recommended a precautionary approach when considering an exemption for any compound with a toxic endpoint and removing the exempt status for any compound that has an established toxic endpoint. Therefore, the current development of PAR 1168 has two primary goals: 1) assessing the feasibility of potential emission reductions through technology assessments and stakeholder engagement; and 2) evaluating the toxicity of exempt solvents with a focus on t-BAC and pCBtF.

## 2.3 PROJECT OBJECTIVES

The main objectives of the proposed project are to: 1) adjust the VOC limits and effective dates so that they are technologically feasible according to the technology assessment conducted for nine categories of adhesives and sealants; and 2) reduce the potential toxicity of product formulations and their associated health impacts by prohibiting the use of t-BAC and pCBtF.

## 2.4 PROJECT DESCRIPTION

PAR 1168 has been developed to delay the effective dates of or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 6, 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; prohibit the use of t-BAC and pCBtF due to toxicity concerns; allow a limited exemption for Opteon 1100 contingent upon OEHHA's evaluation for toxicity impacts; and clarify some definitions and other rule language.

As such, staff is proposing the following amendments to Rule 1168. Appendix A of this Draft SEA contains a copy of PAR 1168.

### **Purpose – subdivision (a) and Applicability – subdivision (b)**

The purpose and applicability are currently both under subdivision (a). Staff proposes to separate the applicability to a new subdivision for a more streamlined rule structure. In addition, staff proposes to extend the applicability by adding the stationary sources, which has been intended by the rule. The proposed change would provide clarity.

### **Definitions – subdivision (c)**

The primary proposed revision to this subdivision will be the addition of several new definitions. Staff proposes to establish new categories and subcategories and VOC content limits to reflect the results of the technology assessment. Accordingly, the following definitions for those new categories and subcategories will be added:

- CPVC Welding Cement for Life Safety Systems
- Cut Edge Single Ply Roof Membrane Sealant

- EPDM/TPO Single Ply Roof Membrane Adhesive
- High-Pressure Two-Component Foam Sealant
- Higher Viscosity CPVC Welding Cement
- Hot Applied Modified Bitumen/Built Up Roof Adhesive
- Low-Pressure Two-Component Foam Sealant
- One-Component Foam Sealant
- Shingle Laminating Adhesive
- Roof Adhesive Primers
- Roof Sealant Primers

Other revisions are proposed to this subdivision which include removing the definition for Energy Curable Adhesives and Sealants. This definition references ASTM Test Method 7767 to measure volatiles from the category of radiation curable acrylate monomers, oligomers, and blends and thin coatings made from them. On August 22, 2022, U.S. EPA issued a partial SIP disapproval of other South Coast AQMD Rules 1106 and 1107 for ASTM Test Method D7767-11, which is not an U.S. EPA approved test method and cannot be used to enforce a SIP-approved rule. Staff is proposing to remove this definition to avoid a SIP disapproval.

Another revision is proposed to the definition of Exempt Compound which references Rule 102 for VOC exempt compounds. For the purpose of PAR 1168, Opteon 1100 shall only be considered exempt as a VOC for High-Pressure Two-Component Foam Sealants and Low-Pressure Two-Component Foam Sealants when used in an industrial or professional setting by workers trained with procedures and guidelines to reduce potential risk of exposure, if OEHHA has sufficient information to establish a Cancer Inhalation Unit Risk Factor, an acute reference exposure level (REL) and a chronic REL of Opteon 1100 and, upon completion of its assessment: 1) does not adopt a Cancer Inhalation Unit Risk Factor for Opteon 1100; 2) develops an acute reference exposure level (REL) or interim acute REL for Opteon 1100, which is higher than or equal to the acute REL or interim acute REL for trans-1-Chloro-3,3,3-Trifluoropropene (HFO-1233zd); and 3) develops a chronic REL or interim chronic REL for Opteon 1100, which is higher than or equal to the chronic REL or interim chronic REL for trans-1-Chloro-3,3,3-Trifluoropropene (HFO-1233zd).

### **Requirements – subdivision (d)**

This subdivision contains the requirements for VOC limits and effective dates for adhesives and sealants by categories and subcategories, presented in PAR 1168 Table 1 – Regulated Product Categories and VOC Limits. Revisions to this table are proposed so as to reflect the revised VOC limits and effective dates for some existing categories and proposed new subcategories. Another proposed revision to Table 1 is to provide weight-based VOC limits for foam product categories, with a conversion of 0.1 weight percent for one gram per liter (g/L). Those foam product categories include Foam Insulation, One-Component Foam Sealants, High-Pressure Two-Component Foam Sealants, and Low-Pressure Two-Component Foam Sealants.

Additionally, staff is proposing a clarification to paragraph (d)(2) for the most restrictive clause. By the clarification, a product of specialty category with VOC limit is not subject to VOC limit of the default “All Other” category. For example, the category of All Clear, Paintable, and Immediately Water-Resistant Sealant is subject to the 380 g/L limit for this category, and it is not subject to the 300 g/L limit for the All Other Roof Sealants category.

Table 2-1 contains a summary of proposed changes as compared with the current requirements. There will be no revision to other requirements included in this provision, such as sell-through, transfer efficiency, and control devices.

**Table 2-1**  
**Comparison of Proposed VOC Limits and Effective Dates to VOC Limits**  
**in October 2017 Version of Rule 1168**

Category	Current VOC Limit with 1/1/2023 Effective Date	Proposed Subcategory	Proposed VOC Limit	Proposed Effective Date
<b>Top and Trim Adhesive</b>	250 g/L	N/A	250 g/L	1/1/2028
<b>Foam Sealant</b>	50 g/L	One Component	18 % -by weight	7/1/2023
		High-Pressure Two-Component	5 % by weight	1/1/2023
		Low-Pressure Two-Component	5 % -by weight	1/1/2023
<b>PVC Welding Cement</b>	425 g/L	N/A	425 g/L	1/1/2023
<b>CPVC Welding Cement</b>	400 g/L	CPVC Welding Cement	400 g/L	1/1/2023
		CPVC Welding Cement for Life Safety Systems	490 g/L	Upon Adoption
		Higher Viscosity CPVC Welding Cement	400 g/L	7/1/2024
<b>All Other Roof Adhesives</b>	200 g/L	All Other Roof Adhesives	250 g/L	Upon Adoption
		Shingle Laminating Adhesive	30 g/L	1/1/2023
		Hot Applied Modified Bitumen/Built Up Roof Adhesive	30 g/L	1/1/2023
<b>Single Ply Roof Membrane Adhesive</b>	200 g/L	<del>N/A</del> EPDM/TPO Single Ply Roof Membrane Adhesive	250 g/L	Upon Adoption
		Single Ply Roof Membrane Adhesive (Except EPDM/TPO)	<u>250 g/L</u>	<u>Upon Adoption</u>
<b>All Other Roof Sealants</b>	250 g/L	N/A	300 g/L	Upon Adoption
<b>Single Ply Roof Membrane Sealant</b>	250 g/L	<del>N/A</del> Cut Edge Single Ply Roof Membrane Sealant	250 g/L	1/1/2023
		Single Ply Roof Membrane Sealant (Except Cut Edge)	<u>250 g/L</u>	<u>1/1/2023</u>
<b><u>Clear, Paintable, Immediately Water-Resistant Sealant</u></b>	<u>250 g/L</u>	<u>N/A</u>	<u>250 g/L</u>	<u>1/1/2026</u>
<b><u>Rubber Vulcanization Adhesive</u></b>	<u>250 g/L</u>	<u>N/A</u>	<u>250 g/L</u>	<u>1/1/2028</u>
<b><u>All Other Adhesive Primers</u></b>	<u>250 g/L</u>	Roof Adhesive Primers	<u>250 g/L</u> ;	Upon Adoption
		All Other Adhesive Primers	<u>250 g/L</u> ;	Upon Adoption
<b><u>All Other Sealant Primers</u></b>	<u>750 g/L</u>	Roof Sealant Primers	<u>750 g/L</u>	Upon Adoption
		All Other Sealant Primers	<u>750 g/L</u>	Upon Adoption

**Reporting and Recordkeeping Requirements – subdivision (e)**

The October 2017 version of Rule 1168 includes two specific recordkeeping provisions which are addressed in subdivisions (f) and (d), respectively: 1) manufacturers, big box retailers, and distributors must retain records to support the data reported in the QERs; and 2) owners or operators of stationary sources that use adhesives or sealants to manufacture products must maintain records pursuant to Rule 109 – Recordkeeping for Volatile Organic Compound Emissions. Neither subdivision (f) nor subdivision (d) explains that Rule 109 only applies to stationary sources. For streamlining and clarification, PAR 1168 merges the reporting and recordkeeping requirements under subdivision (e) which ~~will~~ specifies the following required information:

- General Quantity and Emission Reporting (QER)
- Aerosol QER
- Private labeler requirements (as related to QER)
- Big box retailer or distribution center QER
- QER reporting timeline
- Facilities Using the 55 Gallon Exemption
- Recordkeeping for QER
- Rule 109 recordkeeping; and
- Confidentiality of Information

Staff is also proposing to add QER reporting requirements ~~in QER~~ for any products containing more than 0.01 weight percent of t-BAC or/and pCBtF. This reporting requirement would apply to manufacturers and private labelers under subparagraphs (e)(1)(G) and (e)(2)(J). This reporting requirement would begin with the next reporting cycle in 2025. Table 2-2 shows the QER reporting schedule adopted in the October 2017 version of Rule 1168:

**Table 2-21**  
**OER Reporting Schedule**

<b><u>Reporting Deadlines</u></b>		<b><u>Reported Years</u></b>
<b><u>Manufacturers &amp; Private Labelers</u></b>	<b><u>Big Box Retailers &amp; Distribution Centers</u></b>	
<u>September 1, 2019</u>	<u>May 1, 2019</u>	<u>2017, 2018</u>
<u>September 1, 2022</u>	<u>May 1, 2022</u>	<u>2020, 2021</u>
<u>September 1, 2025</u>	<u>May 1, 2025</u>	<u>2023, 2024</u>
<u>September 1, 2030</u>	<u>May 1, 2030</u>	<u>2028, 2029</u>
<u>September 1, 2035</u>	<u>May 1, 2035</u>	<u>2033, 2034</u>
<u>September 1, 2040</u>	<u>May 1, 2040</u>	<u>2038, 2039</u>



**Administrative Requirements – subdivision (g)**

~~The October 2017 version of Rule 1168 of this subdivision includes labeling and QER requirements but PAR 1168 proposes to move the QER requirements to subdivision (e). PAR 1168 also proposes to add labeling requirements for Foam Insulation, One Component Foam Sealant, High Pressure Two Component Foam Sealant, and Low Pressure Two Component Foam Sealant that will be required to comply with a weight percent limit which will be required to display the VOC as percent VOC by weight. PAR 1168 also proposes to add labeling requirements for two new CPVC subcategories, CPVC Welding Cement for Life Safety Systems and Higher Viscosity CPVC Welding Cement to subdivision (g) along with the following statement which will be required to be displayed on the container, effective July 1, 2023:~~

This subdivision included labeling and QER requirements; however, PAR 1168 moved the QER requirements to subdivision (e) for consistency with other South Coast AQMD rules. With the reporting requirements moved, this subdivision now only includes labeling requirements; therefore, subparagraphs (g)(1)(A) through (g)(1)(G) have been promoted to paragraphs (g)(1) through (g)(7). Staff also proposes to add labeling requirements for two new CPVC subcategories, CPVC For Life Safety Systems and Higher Viscosity CPVC Welding Cement. The following statement will be required to be displayed on the container, effective July 1, 2023:

- Each container of CPVC For Life Safety Systems shall include the statement “For CPVC Life Safety System Uses Only” prominently displayed.
- Each container of Higher Viscosity CPVC Welding Cement shall include a statement prominently displayed on the label to indicate if the product is formulated for “Medium” or “Heavy” or “Extra Heavy” applications.

Staff also proposes to amend the labeling requirement to address Regulated Products subject to weight percent VOC limits; the following statement has been added:

- Effective January 1, 2026, Foam Insulation, One-Component Foam Sealants, High-Pressure Two-Component Foam Sealants, and Low-Pressure Two-Component Foam Sealants shall display the VOC as percent VOC by weight.

**Prohibition of Sales and Use – subdivision (h)**

The October 2017 version of Rule 1168 prohibits the sale and use of Regulated Products that contain chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene and all Group II exempt solvents except volatile methyl siloxanes (VMS). Small, but non-negligible, quantities of VMS are widely used in silicone-based sealants. The Group II exempt solvent prohibition was included in the October 2017 version of Rule 1168 along with an effective date of January 1, 2019 which has since lapsed. PAR 1168 combines the prohibition into one paragraph and removes the lapsed effective date.

~~This subdivision proposes to prohibit the use of t-BAC and pCBtF, effective January 1, 2025 for Single Ply Roof Membrane Adhesive and prohibit t-BAC and pCBtF January 1, 2024 for all other regulated products, which~~ This proposal is based on staff’s assessment of t-BAC and pCBtF health risk and the Stationary Source Committee’s direction to take a precautionary approach when considering expanding or including an exemption for any compound with a toxic endpoint. -The proposal also includes a sell-through and use-through provision for products manufactured prior to the effective date of the t-BAC and pCBtF prohibition. Sell-through and use-through provisions are already included in Rule 1168 when there is a VOC limit change for a Regulated Product, and the amendment includes the same consideration for the new prohibitions. Based on stakeholder feedback and evaluation of reported data, staff proposed some delays of pCBtF prohibition for

specialty products that rely on pCBtF as well as shorter sell-through and use-through periods to help offset the delays. The prohibition effective dates based on the categories of products are illustrated in Table 2-3, and are included in PAR 1168.

**Table 2-32**  
**Prohibition Effective Dates**

<u>Category</u>	<u>Prohibition Effective Date</u>	<u>Sell-through End Date</u>	<u>Use-through End date</u>
<b><u>pCBtF Prohibition Effective Dates</u></b>			
<b><u>Cut Edge Single Ply Roof Membrane Sealant</u></b>	<u>January 1, 2027</u>	<u>January 1, 2028</u>	<u>January 1, 2028</u>
<b><u>EPDM/TPO Single Ply Roof Membrane Adhesive</u></b>			
<b><u>Roof Adhesive Primer</u></b>			
<b><u>Single Ply Roof Membrane Adhesive (Except EPDM/TPO)</u></b>	<u>January 1, 2025</u>	<u>January 1, 2028</u>	<u>January 1, 2028</u>
<b><u>Single Ply Roof membrane Sealants (Except Cut Edge)</u></b>			
<b><u>All Other Roof Sealants</u></b>			
<b><u>Roof Sealant Primer</u></b>			
<b><u>Clear, Paintable, and Immediately Water-Resistant Sealant</u></b>	<u>January 1, 2026</u>	<u>January 1, 2028</u>	<u>January 1, 2028</u>
<b><u>All Regulated Products not listed above</u></b>	<u>January 1, 2024</u>	<u>January 1, 2027</u>	<u>January 1, 2028</u>
<b><u>t-BAc Prohibition Effective Dates</u></b>			
<b><u>All Regulated Products</u></b>	<u>January 1, 2024</u>	<u>January 1, 2027</u>	<u>January 1, 2028</u>

### **Exemptions – subdivision (j)**

For Regulated Products with a VOC content no more than 20 g/L, the October 2017 version of Rule 1168 provides an exemption from subdivision (c) which includes the VOC emission limits and subdivision (d) which includes the Rule 109 recordkeeping requirements. However, the October 2017 version of Rule 1168 includes some limits as low as 20 g/L, making the reason behind the 20 g/L exemption unclear. This subdivision contains a proposal to revise the exemption to only apply to products with a VOC content no more than 5 g/L and clarify that the recordkeeping exemption is only for stationary sources. In addition, staff is proposing to remove paragraph (j)(9) which allowed for the continued use of methylene chloride, a prohibited compound, in solvent welding formulation until January 1, 2021. The paragraph is being removed since that date has passed and those formulations can no longer use methylene chloride.

## 2.5 SUMMARY OF AFFECTED ADHESIVE AND SEALANT CATEGORIES

The following categories will be impacted by the required technology assessment defined in the October 2017 version of Rule 1168 or by the proposed prohibition of pCBtF: 1) Top and Trim Adhesive; 2) Foam Sealants; 3) All Other Roof Adhesives; 4) Single Ply Roof Membrane Adhesive; 5) All Other Roof Sealants 6) Single Ply Roof Membrane Sealants; 7) PVC Welding Cement; 8) CPVC Welding Cement; ~~and~~ 9) ABS TO PVC Welding Cement; 10) Clear, Paintable, Immediately Water-Resistant Sealant; and 11) Rubber Vulcanization Adhesives. Table 2-42 provides a summary of the affected categories and the total sales of products with the Sales Weighted Average (SWA) VOC content.

**Table 2-42**  
**Adhesive and Sealant Categories Affected by PAR 1168**

Sales Year	2017		2018	
Emission Source	Total Sales	SWA (g/L)	Total Sales	SWA (g/L)
<b>Tope and Trim</b>	75,000	424	60,000	337
<b>Foam Sealant</b>	107,000	154	105,000	148
<b>All Other Roof Adhesives<sup>1,2</sup></b>	80,000	188	80,000	188
<b>Single Ply Roof Membrane Adhesive</b>	230,000	120	270,000	125
<b>All Other Roof Sealants<sup>2</sup></b>	45,000	198	45,000	198
<b>Single Ply Roof Membrane Sealants</b>	13,000	81	13,000	82
<b>PVC Welding Cement</b>	155,000	480	155,000	480
<b>CPVC Welding Cement</b>	6,700	383	8,200	469
<b>ABS To PVC Welding Cement</b>	1,800	377	2,000	390
<b><u>Clear, Paintable, Immediately Water-Resistant Sealant</u></b>	<u>8,700</u>	<u>420</u>	<u>6,800</u>	<u>322</u>
<b><u>Rubber Vulcanization Adhesives</u></b>	<u>Protected Data</u>	<u>653</u>	<u>Protected Data</u>	<u>710</u>
<b><u>Total Sales in Table</u></b>	<u>733,500</u>		<u>747,400</u>	
<b>Total PAR 1168</b>	<b><u>14,000,000</u> <del>14,090,169</del></b>		<b><u>16,000,000</u> <del>16,122,432</del></b>	

<sup>1</sup> Non-asphaltic All Other Roof Adhesives

<sup>2</sup> Same data reported for 2017 and 2018

## **2.6 TECHNOLOGY OVERVIEW**

Compliance with PAR 1168 is expected to be met with manufacturers reformulating Regulated Products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The manufacturers will have flexibility to use any compliant alternative reformulation in order for their product to meet the VOC limits in PAR 1168. Physical modifications to or new installations of manufacturing equipment, including the installation of control equipment, would not be expected to be needed in order to reformulate products. For certain categories, there are existing products that meet the proposed lower VOC content limits, so reformulation is practicable. Finally, end-users can comply with the rule using alternative options such as the 55 gallon per year exemption; control devices, such as emission collection systems; or an Alternative Emission Control Plan.

## **CHAPTER 3**

---

### **EXISTING SETTING**

#### **Introduction**

#### **Existing Setting**

#### **Air Quality and Greenhouse Gas Emissions**

##### **Criteria Air Pollutants**

##### **Greenhouse Gas Emissions**

### 3.0 INTRODUCTION

To determine the significance of the impacts associated with a proposed project, it is necessary to evaluate the proposed project's impacts against the backdrop of the environment as it exists at the time the environmental analysis is commenced. CEQA Guidelines Section 15360 defines environment as “the physical conditions that exist within the area which will be affected by a proposed project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance.” [See also Public Resources Code Section 21060.5]. Furthermore, a CEQA document must include a description of the physical environment in the vicinity of the proposed project, as it exists at the time the environmental analysis is commenced, from both a local and regional perspective. [CEQA Guidelines Section 15125]. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to provide an understanding of the significant effects of the proposed project and its alternatives.

The existing setting is the physical environmental conditions as they existed at the time the NOP was published, or if no NOP is published, at the time the environmental analysis is commenced. [CEQA Guidelines Section 15125].

### 3.1 EXISTING SETTING

The proposed project is comprised of PAR 1168, which has been developed to delay VOC limit effective dates or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the proposed effective dates or limits in the October 2017 version of Rule 1168 are not feasible; create further subcategories of Regulated Products to better characterize and refine VOC limits; prohibit the use of pCBtF and t-BAC due to toxicity concerns; allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and clarify some definitions and rule language.

As allowed by CEQA Guidelines Sections 15152, 15162, and 15385, the proposed project is designed to amend and tier off of the previous CEQA assessment conducted in the October 2017 Final EA which was certified by the South Coast AQMD Governing Board on October 6, 2017.

The October 2017 amendments to Rule 1168 were adopted with the goal of reducing emissions of VOCs, toxic air contaminants, and stratospheric ozone-depleting compounds from adhesives, adhesive primers, sealants, and sealant primers. The October 2017 version of Rule 1168 clarified the applicability; revised, deleted, and added various definitions; lowered the VOC limits for certain categories and allowed a three-year sell-through and use-through; added new product categories with corresponding VOC content limits; required products marketed for use under varying categories to be subject to the lowest VOC limit; prohibited the storage of non-compliant products, unless for shipment outside of the South Coast AQMD; added test methods for analyzing VOC content; added labeling requirements; included reporting requirements for manufacturers, private labelers, big box retailers, distribution centers, and facilities that use a 55 gallon per year exemption; prohibited the use of Rule 102 Group II exempt solvents, except volatile methyl siloxanes; included a technology assessment for certain product categories; and removed, modified, or added various exemptions. The October 2017 version of Rule 1168 estimated VOC emission reductions of approximately 1.38 tpd.

While the estimated reduction of VOC emissions from the October 2017 amendments to Rule 1168 were expected to create an environmental benefit, the October 2017 Final EA, which is the certified regulatory program equivalent to a Negative Declaration under CEQA, analyzed the environmental impacts associated with the activities manufacturers were anticipated to undertake to reformulate products and that these reformulation activities could create secondary adverse environmental impacts. However, none of the environmental topic areas previously analyzed in the October 2017 Final EA were concluded to have significant and unavoidable impacts, including the topic of air quality and greenhouse gases (GHGs).

CEQA Guidelines Section 15125 defines the existing setting as the physical environmental conditions as they existed at the time the Notice of Preparation (NOP) was published, or if no NOP is published, at the time the environmental analysis is commenced. For the October 2017 amendments to Rule 1168, no NOP was prepared but the environmental analysis ~~was~~ commenced on August 16, 2017 when the Notice of Completion (NOC) announcing the availability of the Draft EA was released for public review and comment. The Draft EA for PAR 1168 contained a detailed analysis of the environmental setting and corresponding environmental effects specifically tailored to implementing the proposed amendments at that time.

When comparing the types of activities and associated environmental impacts with implementing the VOC limits and compliance dates subject to the October 2017 version of Rule 1168 as previously analyzed in the October 2017 Final EA to the currently proposed changes which comprise PAR 1168, the type and extent of the physical changes are expected to be similar and will cause similar secondary adverse environmental impacts for the same environmental topic areas that were identified and analyzed in the October 2017 Final EA.

Thus, the proposed project is expected to have generally the same or similar effects that were previously examined in the October 2017 Final EA but ~~that~~ the air quality impacts from PAR 1168 will ~~cause—result in~~ some delayed VOC emission reductions and permanent VOC emission reductions foregone, which will be more severe than what was discussed in October 2017 Final EA. The analysis of these impacts is presented in Chapter 4.

Based on the preceding discussion, the baseline that was established at the time the NOC was published for the August 2017 Draft EA directly corresponds to the currently proposed project since the affected categories of coatings and adhesives, and the nature of the physical impacts that may occur as a result of implementing PAR 1168 are the same as or similar to the previous analysis in October 2017 Final EA.

For this reason, the baseline is the project analyzed in the October 2017 Final EA. As such, this SEA analyzes the incremental changes that may occur subsequent to the project analyzed in the October 2017 Final EA if PAR 1168 is implemented.

In addition, the analysis in this SEA independently considered whether the proposed project would result in new significant impacts for any of the environmental topic areas previously concluded in the October 2017 Final EA to have either no significant impacts or less than significant impacts and only the topic of air quality was identified as having potentially significant adverse impacts. A description and the basis for this conclusion is included in Chapter 4 of this SEA.

The baseline for the analysis in this SEA is the project analyzed in the October 2017 Final EA, which concluded that no environmental topic area would have potentially significant adverse

environmental impacts. As analyzed in Chapter 4, PAR 1168 is anticipated to have significant adverse air quality impacts. As such, the following subchapter is devoted to describing the regional existing setting for the air quality which was the only environmental topic area identified as having potentially significant adverse environmental impacts if PAR 1168 is implemented.

## **3.2 AIR QUALITY AND GREENHOUSE GAS EMISSIONS**

Ambient air quality standards have been adopted at the state and federal levels for criteria air pollutants. In addition, both the state and federal government regulate the release of toxic air contaminants and GHG emissions. Projects within South Coast AQMD's jurisdiction are subject to the rules and regulations imposed by the South Coast AQMD as well as regulations adopted by CARB and U.S. EPA. Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized in this section.

### **3.2.1 CRITERIA AIR POLLUTANTS**

South Coast AQMD has the responsibility to ensure that state and federal ambient air quality standards (AAQS or standards) are achieved and maintained in its geographical jurisdiction. Health-based air quality standards have been established by California and the federal government for the following criteria air pollutants: ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), particulate matter (PM, which includes PM<sub>10</sub> and PM<sub>2.5</sub>), sulfur dioxide (SO<sub>2</sub>), and lead (Pb). These standards were established to protect sensitive receptors with a margin of safety from adverse health impacts due to exposure to air pollution. The California standards are sometimes more stringent than the federal standards, and in the case of PM<sub>10</sub> and SO<sub>2</sub>, far more stringent. However, for ozone, the current 8-hour California Ambient Air Quality Standard (CAAQS) and the 2015 8-hour National Ambient Air Quality Standard (NAAQS) are at an equivalent level and for PM<sub>2.5</sub>, the current annual CAAQS and the 2012 annual NAAQS are also at an equivalent level. As a result, the South Coast AQMD relies on the same measures to meet both federal and state ozone and PM<sub>2.5</sub> standards. California has also established standards for sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride. The state and federal standards for each of these pollutants and their effects on health are summarized in Table 3-1.

South Coast AQMD monitors levels of various criteria pollutants at 38 monitoring stations. The 2020 air quality data (the latest data available) from South Coast AQMDs monitoring stations are presented in Tables 3-2 through 3-8 for the individual criteria air pollutants monitored by South Coast AQMD.



**Table 3-1**  
**State and Federal Ambient Air Quality Standards**

Pollutant	Averaging Time	State Standard <sup>a</sup>	Federal Primary Standard <sup>b</sup>	Most Relevant Effects
<b>Ozone (O<sub>3</sub>)</b>	1-hour	0.09 ppm (180 µg/m <sup>3</sup> )	0.12 ppm	(a) Short-term exposures: 1) Pulmonary function decrements and localized lung edema in humans and animals; and 2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; and (d) Property damage.
	8-hour	0.070 ppm (137 µg/m <sup>3</sup> )	0.070 ppm (137 µg/m <sup>3</sup> )	
<b>Suspended Particulate Matter (PM<sub>10</sub>)</b>	24-hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; and (b) Excess seasonal declines in pulmonary function, especially in children.
	Annual Arithmetic Mean	20 µg/m <sup>3</sup>	No Federal Standard	
<b>Suspended Particulate Matter (PM<sub>2.5</sub>)</b>	24-hour	No State Standard	35 µg/m <sup>3</sup>	(a) Increased hospital admissions and emergency room visits for heart and lung disease; (b) Increased respiratory symptoms and disease; and (c) Decreased lung functions and premature death.
	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>	
<b>Carbon Monoxide (CO)</b>	1-Hour	20 ppm (23 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses.
	8-Hour	9 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )	

**Table 3-1 (concluded)**  
**State and Federal Ambient Air Quality Standards**

Pollutant	Averaging Time	State Standard <sup>a</sup>	Federal Primary Standard <sup>b</sup>	Most Relevant Effects
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>	1-Hour	0.18 ppm (339 µg/m <sup>3</sup> )	0.100 ppm (188 µg/m <sup>3</sup> )	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration.
	Annual Arithmetic Mean	0.030 ppm (57 µg/m <sup>3</sup> )	0.053 ppm (100 µg/m <sup>3</sup> )	
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>	1-Hour	0.25 ppm (655 µg/m <sup>3</sup> )	75 ppb (196 µg/m <sup>3</sup> )	Broncho-constriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
	24-Hour	0.04 ppm (105 µg/m <sup>3</sup> )	No Federal Standard	
<b>Sulfates</b>	24-Hour	25 µg/m <sup>3</sup>	No Federal Standard	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage.
<b>Hydrogen Sulfide (H<sub>2</sub>S)</b>	1-Hour	0.03 ppm (42 µg/m <sup>3</sup> )	No Federal Standard	Odor annoyance.
<b>Lead (Pb)</b>	30-Day Average	1.5 µg/m <sup>3</sup>	No Federal Standard	(a) Increased body burden; and (b) Impairment of blood formation and nerve conduction.
	Calendar Quarter	No State Standard	1.5 µg/m <sup>3</sup>	
	Rolling 3-Month Average	No State Standard	0.15 µg/m <sup>3</sup>	
<b>Visibility Reducing Particles</b>	8-Hour	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more due to particles when relative humidity is less than 70 percent.	No Federal Standard	The statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. This is a visibility-based standard not a health-based standard. Nephelometry and AISI Tape Sampler; instrumental measurement on days when relative humidity is less than 70 percent.
<b>Vinyl Chloride</b>	24-Hour	0.01 ppm (26 µg/m <sup>3</sup> )	No Federal Standard	Highly toxic and a known carcinogen that causes a rare cancer of the liver.
ppb = parts per billion parts of air, by volume ppm = parts per million parts of air, by volume µg/m <sup>3</sup> = micrograms per cubic meter mg/m <sup>3</sup> = milligrams per cubic meter				

<sup>a</sup> The California ambient air quality standards for O<sub>3</sub>, CO, SO<sub>2</sub> (1-hour and 24-hour), NO<sub>2</sub>, PM10, and PM2.5 are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

<sup>b</sup> The national ambient air quality standards, other than O<sub>3</sub> and those based on annual averages are not to be exceeded more than once a year. The O<sub>3</sub> standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standards is equal to or less than one.

## Carbon Monoxide

CO is a primary pollutant, meaning that it is directly emitted into the air, not formed in the atmosphere by chemical reaction of precursors, as is the case with ozone and other secondary pollutants. Ambient concentrations of CO in the Basin exhibit large spatial and temporal variations due to variations in the rate at which CO is emitted and in the meteorological conditions that govern transport and dilution. Unlike ozone, CO tends to reach high concentrations in the fall and winter months. The highest concentrations frequently occur on weekdays at times consistent with rush hour traffic and late night during the coolest, most stable portion of the day.

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise and electrocardiograph changes indicative of worsening oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs but exerts its effect on tissues by interfering with oxygen transport by competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include patients with diseases involving heart and blood vessels, fetuses, and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes. Reductions in birth weight and impaired neurobehavioral development have been observed in animals chronically exposed to CO resulting in COHb levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels. These include preterm births and heart abnormalities.<sup>7,8,9</sup>

On August 12, 2011, U.S. EPA issued a decision to retain the existing NAAQS for CO, determining that those standards provided the required level of public health protection. However, U.S. EPA added a monitoring requirement for near-road CO monitors in urban areas with population of one million or more, utilizing stations that would be implemented to meet the 2010 NO<sub>2</sub> near-road monitoring requirements. The two new CO monitors are at the I-5 near-road site, located in Orange County near Anaheim, and the I-10 near-road site, located near Etiwanda Avenue in San Bernardino County near Ontario, Rancho Cucamonga, and Fontana.

As summarized in Table 3.2-2, CO concentrations were measured at 23 locations in the South Coast Air Basin and neighboring Salton Sea Air Basin in 2020 but did not exceed the state or federal standards in 2020. The highest 1-hour average CO concentration recorded was 4.5 parts per million (ppm) at the South Central Los Angeles County station, less than the federal and state 1-hour CO standards of 35 ppm and 20 ppm, respectively. The highest 8-hour average CO concentration recorded was 3.1 ppm at the South Central Los Angeles County station, less than the federal and state 8-hour CO standards of 9.0 ppm. All areas within the South Coast AQMD's jurisdiction are in attainment for both the federal and state 1-hour and 8-hour CO standards.

---

<sup>7</sup> U.S. Environmental Protection Agency. 2020. Criteria Air Pollutants. <https://www.epa.gov/criteria-air-pollutants>, accessed on June 10, 2022.

<sup>8</sup> South Coast AQMD. 2015. Health Effects of Air Pollution. <http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf>, accessed on June 10, 2022.

<sup>9</sup> South Coast AQMD. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. <https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document>, accessed on June 10, 2022.

**Table 3-2**  
**South Coast AQMD – 2020 Air Quality Data – CO<sup>10</sup>**

<b>CARBON MONOXIDE (CO)<sup>a</sup></b>				
<b>Source Receptor Area No.</b>	<b>Location of Air Monitoring Station</b>	<b>No. Days of Data</b>	<b>Max. Conc. in ppm 1-hour</b>	<b>Max. Conc. in ppm, 8-hour</b>
<b>LOS ANGELES COUNTY</b>				
1	Central Los Angeles	359	1.9	1.5
2	Northwest Coastal Los Angeles County	365	2.0	1.2
3	Southwest Coastal Los Angeles County	364	1.6	1.3
6	West San Fernando Valley	363	2.0	1.7
8	West San Gabriel Valley	361	2.6	2.2
9	East San Gabriel Valley 1	349	2.4	2.0
9	East San Gabriel Valley 2	310	2.3	1.9
10	Pomona/Walnut Valley	363	1.5	1.1
11	South San Gabriel Valley	362	3.1	1.7
12	South Central Los Angeles County	364	4.5	3.1
13	Santa Clarita Valley	363	1.2	0.8
<b>ORANGE COUNTY</b>				
16	North Orange County	347	2.1	1.2
17	Central Orange County	361	2.3	1.7
17	I-5 Near Road <sup>##</sup>	359	2.4	2.0
19	Saddleback Valley	366	1.7	0.8
<b>RIVERSIDE COUNTY</b>				
23	Metropolitan Riverside County 1	361	1.9	1.4
23	Metropolitan Riverside County 3	359	1.8	1.5
25	Elsinore Valley	358	0.9	0.7
30	Coachella Valley 1 <sup>**</sup>	365	0.8	0.5
<b>SAN BERNARDINO COUNTY</b>				
32	Northwest San Bernardino Valley	364	1.5	1.1
33	I-10 Near Road <sup>##</sup>	363	1.5	1.2
34	Central San Bernardino Valley 1	358	1.7	1.2
34	Central San Bernardino Valley 2	360	1.9	1.4
<b>DISTRICT MAXIMUM<sup>(b)</sup></b>			<b>4.5</b>	<b>3.1</b>
<b>SOUTH COAST AIR BASIN<sup>(c)</sup></b>			<b>4.5</b>	<b>3.1</b>
ppm = parts per million of air, by volume <span style="float: right;">**Salton Sea Air Basin</span> <sup>##</sup> Four near-road sites measuring one or more of the pollutants PM <sub>2.5</sub> , CO, and/or NO <sub>2</sub> are operating near the following freeways: I-5, I-10, CA-60, and I-710. <sup>a</sup> The federal 8-hour standard (8-hour average CO > 9 ppm) and state 8-hour standard (8-hour average CO > 9.0 ppm) were not exceeded. The federal and state 1-hour standards (35 ppm and 20 ppm) were not exceeded either. <sup>b</sup> District Maximum is the maximum value calculated at any station in the South Coast AQMD jurisdiction. <sup>c</sup> Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.				

<sup>10</sup> South Coast AQMD, 2021. "2020 Air Quality - South Coast Air Quality Management District – CO," Historical Air Quality Data for Year 2020 at locations where CO was monitored; [http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card\\_final.pdf](http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf), accessed on June 10, 2022.

## Ozone

Ozone (O<sub>3</sub>), a colorless gas with a sharp odor, is a highly reactive form of oxygen. High ozone concentrations exist naturally in the stratosphere. Some mixing of stratospheric ozone downward through the troposphere to the earth's surface does occur; however, the extent of ozone transport is limited. At the earth's surface in sites remote from urban areas ozone concentrations are normally very low (e.g., from 0.03 ppm to 0.05 ppm).

Ozone is highly reactive with organic materials, causing damage to living cells and ambient ozone concentrations in the Basin are frequently sufficient to cause health effects. Ozone enters the human body primarily through the respiratory tract and causes respiratory irritation and discomfort, makes breathing more difficult during exercise, and reduces the respiratory system's ability to remove inhaled particles and fight infection. Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for ozone effects. Short-term exposures (lasting for a few hours) to ozone at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in high ozone communities. Elevated ozone levels are also associated with increased school absences. Ozone exposure under exercising conditions is known to increase the severity of the previously mentioned observed responses. Animal studies suggest that exposures to a combination of pollutants which include ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.<sup>11,12,13</sup>

As summarized in Table 3.2-3, O<sub>3</sub> concentrations were measured at 29 locations in the South Coast Air Basin and the Coachella Valley portion of the Salton Sea Air Basin in 2020. Maximum ozone concentrations for all areas monitored were below the stage 1 episode level (0.20 ppm) and below the health advisory level (0.15 ppm). All counties in the Basin, as well as the Coachella Valley, exceeded the level of the 2015 federal 8-hour O<sub>3</sub> standard (0.070 ppm), the state 1-hour O<sub>3</sub> standard (0.09 ppm), and the state 8-hour O<sub>3</sub> standard (0.070 ppm) in 2020. All but one monitoring station (Southwest Coast LA County) exceeded the former 2008 federal 8-hour O<sub>3</sub> standard (0.075 ppm).

Maximum 1-hour average and 4<sup>th</sup> highest 8-hour average ozone concentrations were 0.185 ppm and 0.125 ppm, respectively (at the Central LA station and East San Bernardino Valley station, respectively), which are greater than the federal 1-hour and 8-hour ozone NAAQS of 0.12 ppm and 0.070 ppm, respectively. The federal 8-hour standard is met at an air quality monitor when the 3-year average of the annual fourth-highest daily maximum 8-hour average is less than 0.070 ppm. The maximum 1-hour concentration also exceeded the state 1-hour ozone standard of 0.09 ppm. All areas within South Coast AQMD's jurisdiction are in nonattainment for both the federal and state 1-hour and 8-hour ozone standards.

---

<sup>11</sup> U.S. Environmental Protection Agency. 2020. Criteria Air Pollutants <https://www.epa.gov/criteria-air-pollutants>, accessed on June 10, 2022.

<sup>12</sup> South Coast AQMD. 2015. Health Effects of Air Pollution. <http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf>, accessed on June 10, 2022.

<sup>13</sup> South Coast AQMD. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. <https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document>, accessed on June 10, 2022.

**Table 3-3**  
**South Coast AQMD – 2020 Air Quality Data – O<sub>3</sub><sup>14</sup>**

OZONE (O <sub>3</sub> ) <sup>(a)</sup>										
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. in ppm 1-hr	Max. Conc. in ppm 8-hr	4th High Conc. ppm 8-hr	No. Days Standard Exceeded				
						Federal (ppm)			State (ppm)	
						Old > 0.124 1-hr	Current > 0.070 8-hr*	2008 > 0.075 8-hr	Current > 0.09 1-hr	Current > 0.070 8-hr
LOS ANGELES COUNTY										
1	Central LA	332	0.185	0.118	0.093	1	22	16	14	22
2	Northwest Coastal LA County	357	0.134	0.092	0.078	1	8	5	6	8
3	Southwest Coastal LA County	350	0.117	0.074	0.066	0	2	0	1	2
4	South Coastal LA County 4	332	0.105	0.083	0.071	0	4	2	4	4
6	West San Fernando Valley	345	0.142	0.115	0.097	0	49	23	14	49
7	East San Fernando Valley	359	0.133	0.108	0.102	5	49	33	31	49
8	West San Gabriel Valley	354	0.163	0.115	0.108	9	60	44	41	60
9	East San Gabriel Valley 1	347	0.168	0.125	0.105	11	61	43	53	61
9	East San Gabriel Valley 2	348	0.173	0.138	0.124	17	97	71	76	97
10	Pomona/Walnut Valley	353	0.180	0.124	0.106	10	84	53	51	84
11	South San Gabriel Valley	356	0.169	0.114	0.089	3	23	15	20	23
12	South Central LA County	354	0.152	0.115	0.072	1	4	3	3	4
13	Santa Clarita Valley	348	0.148	0.122	0.106	10	73	56	44	73
ORANGE COUNTY										
16	North Orange County	340	0.171	0.133	0.088	3	23	19	15	23
17	Central Orange County	356	0.142	0.097	0.079	2	15	4	6	15
19	Saddleback Valley	364	0.171	0.122	0.090	1	32	25	20	32
RIVERSIDE COUNTY										
23	Metropolitan Riverside County 1	348	0.143	0.115	0.102	6	81	59	46	81
23	Metropolitan Riverside County 3	350	0.140	0.117	0.103	7	89	62	51	89
24	Perris Valley	358	0.125	0.106	0.097	1	74	48	34	74
25	Elsinore Valley	355	0.130	0.100	0.093	1	52	30	18	52
26	Temecula Valley	364	0.108	0.091	0.084	0	37	20	5	37
29	San Gorgonio Pass	358	0.150	0.115	0.104	3	68	48	29	68
30	Coachella Valley 1**	360	0.119	0.094	0.089	0	49	28	9	49
30	Coachella Valley 2**	358	0.097	0.084	0.081	0	42	17	2	42
SAN BERNARDINO COUNTY										
32	Northwest San Bernardino Valley	360	0.158/	0.123	0.116	15	114	87	82	114
34	Central San Bernardino Valley 1	348	0.151	0.111	0.105	8	89	65	56	89
34	Central San Bernardino Valley 2	359	0.162	0.128	0.122	15	128	110	89	128
35	East San Bernardino Valley	361	0.173	0.136	0.125	16	141	127	104	141
37	Central San Bernardino Mountains	364	0.159	0.139	0.117	7	118	97	69	118
DISTRICT MAXIMUM <sup>(b)</sup>			0.185	0.139	0.125	17	141	127	104	141
SOUTH COAST AIR BASIN <sup>(c)</sup>			0.185	0.139	0.125	27	157	142	132	157
ppm = parts per million of air, by volume										
**Salton Sea Air Basin										
<sup>a</sup> The current (2015) O <sub>3</sub> federal standard was revised effective December 28, 2015.										
<sup>b</sup> District Maximum is the maximum value calculated at any station in the South Coast AQMD jurisdiction.										
<sup>c</sup> Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.										

<sup>14</sup> South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where O<sub>3</sub> was monitored; [http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card\\_final.pdf](http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf), accessed on June 10, 2022.

## Nitrogen Dioxide

NO<sub>2</sub> is a reddish-brown gas with a bleach-like odor. Nitric oxide (NO) is a colorless gas, formed from the nitrogen (N<sub>2</sub>) and oxygen (O<sub>2</sub>) in air under conditions of high temperature and pressure which are generally present during combustion of fuels; NO reacts rapidly with the oxygen in air to form NO<sub>2</sub>. NO<sub>2</sub> is responsible for the brownish tinge of polluted air. The two gases, NO and NO<sub>2</sub>, are referred to collectively as NO<sub>x</sub>. In the presence of sunlight, NO<sub>2</sub> reacts to form nitric oxide and an oxygen atom. The oxygen atom can react further to form O<sub>3</sub>, via a complex series of chemical reactions involving hydrocarbons. Nitrogen dioxide may also react to form nitric acid (HNO<sub>3</sub>) which reacts further to form nitrates, components of PM<sub>2.5</sub> and PM<sub>10</sub>.

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO<sub>2</sub> at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO<sub>2</sub> in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma and/or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these subgroups. More recent studies have found associations between NO<sub>2</sub> exposures and cardiopulmonary mortality, decreased lung function, respiratory symptoms, and emergency room asthma visits. In animals, exposure to levels of NO<sub>2</sub> considerably higher than ambient concentrations result in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of ozone and NO<sub>2</sub>.<sup>15,16,17</sup>

With the revised NO<sub>2</sub> federal standard in 2010, near-road NO<sub>2</sub> measurements were required to be phased in for larger cities. The four near-road monitoring stations are: 1) I-5 near-road, located in Orange County near Anaheim; 2) I-710 near-road, located at Long Beach Blvd. in Los Angeles County near Compton and Long Beach; 3) State Route 60 (SR-60 or CA-60) near-road, located west of Vineyard Avenue near the San Bernardino/Riverside County border near Ontario, Mira Loma, and Upland; and 4) I-10 near-road, located near Etiwanda Avenue in San Bernardino County near Ontario, Rancho Cucamonga, and Fontana.

As summarized in Table 3.2-4, NO<sub>2</sub> concentrations were measured at 27 locations in the South Coast Air Basin and neighboring Salton Sea Air Basin in 2020 with one station (CA-60 Near Road) exceeding the federal 1-hour standard in 2020. There have been exceedances of the peak 1-hour standard at the I-710 near-road station in 2017, and the CA-60 near-road in 2020; however, the 98<sup>th</sup> percentile value has not exceeded the standard.<sup>18</sup> The highest annual average NO<sub>2</sub> concentration recorded was 29.1 ppb (at the CA-60 Near Road station), which is less than the federal and state annual NO<sub>2</sub> standards of 53 ppb and 30 ppb, respectively. All areas within South Coast AQMD's jurisdiction are in attainment for both the federal and state 1-hour and annual NO<sub>2</sub> standards.

<sup>15</sup> U.S. Environmental Protection Agency. 2020. Criteria Air Pollutants, <https://www.epa.gov/criteria-air-pollutants>, accessed on June 10, 2022.

<sup>16</sup> South Coast AQMD. 2015. Health Effects of Air Pollution. <http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf>, accessed on June 10, 2022.

<sup>17</sup> South Coast AQMD. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. <https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document>

<sup>18</sup> South Coast AQMD, 2022. 2022 Draft Air Quality Management Plan, p. 2-49. <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/05-ch2.pdf>.

**Table 3-4**  
**South Coast AQMD – 2020 Air Quality Data – NO<sub>2</sub><sup>19</sup>**

<b>NITROGEN DIOXIDE (NO<sub>2</sub>)<sup>a</sup></b>					
<b>Source Receptor Area No.</b>	<b>Location of Air Monitoring Station</b>	<b>No. Days of Data</b>	<b>Max. Conc. in ppb 1-hour</b>	<b>98<sup>th</sup> Percentile Conc. in ppb 1-hour</b>	<b>Annual Average AAM Conc. ppb</b>
<b>LOS ANGELES COUNTY</b>					
1	Central LA	364	61.8	54.7	16.9
2	Northwest Coastal LA County	360	76.6	43.9	10.6
3	Southwest Coastal LA County	364	59.7	50.9	9.5
4	South Coastal LA County 4	357	75.3	56.3	12.8
4	I-710 Near Road <sup>##</sup>	355	90.3	79.1	22.3
6	West San Fernando Valley	365	57.2	50.1	12.1
7	East San Fernando Valley	357	60.4	52.4	14.5
8	West San Gabriel Valley	354	61.2	49.7	13.6
9	East San Gabriel Valley 1	347	64.8	54.1	13.6
9	East San Gabriel Valley 2	366	50.4	41.9	8.5
10	Pomona/Walnut Valley	355	67.9	59.8	18.3
11	South San Gabriel Valley	365	69.2	573.8	17.8
12	South Central LA County	362	72.3	60.5	14.5
13	Santa Clarita Valley	361	46.3	35.9	9.4
<b>ORANGE COUNTY</b>					
16	North Orange County	347	57.2	50.1	12.7
17	Central Orange County	364	70.9	52.1	13.3
17	I-5 Near Road <sup>##</sup>	365	69.9	52.6	18.8
<b>RIVERSIDE COUNTY</b>					
23	Metropolitan Riverside County 1	359	66.4	54.1	13.6
23	Metropolitan Riverside County 3	352	58.1	49.9	12.3
25	Elsinore Valley	345	43.6	37.9	7.4
29	San Geronio Pass	363	51.1	47.1	8.5
30	Coachella Valley 1 <sup>**</sup>	365	47.4	34.3	6.6
<b>SAN BERNARDINO COUNTY</b>					
32	Northwest San Bernardino Valley	364	55.4	44.8	13.9
33	I-10 Near Road <sup>##</sup>	345	94.2	75.1	28.7
33	CA-60 Near Road <sup>##</sup>	346	101.6	78.0	29.1
34	Central San Bernardino Valley 1	360	66.4	57.9	18.7
34	Central San Bernardino Valley 2	35	54.0	45.6	14.9
<b>DISTRICT MAXIMUM<sup>(b)</sup></b>			<b>101.6</b>	<b>86.3</b>	<b>29.1</b>
<b>SOUTH COAST AIR BASIN<sup>(c)</sup></b>			<b>101.6</b>	<b>86.3</b>	<b>29.1</b>
ppb = parts per billion AAM = Annual Arithmetic Mean -- Pollutant not monitored ## Four near-road sites measuring one or more of the pollutants PM2.5, CO, and/or NO2 are operating near the following freeways: I-5, I-10, CA-60, and I-710. a The NO2 federal 1-hour standard is 100 ppb and the annual standard is annual arithmetic mean NO2 > 0.0534 ppm (53.4 ppb). The state 1-hour and annual standards are 0.18 ppm (180 ppb) and 0.030 ppm (30 ppb). b District Maximum is the maximum value calculated at any station in the South Coast AQMD jurisdiction. c Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.					
			*Incomplete data **Salton Sea Air Basin		

<sup>19</sup> South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where NO<sub>2</sub> was monitored; [http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card\\_final.pdf](http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf), accessed on June 10, 2022.



## Sulfur Dioxide

SO<sub>2</sub> is a colorless gas with a sharp odor. It reacts in the air to form sulfuric acid (H<sub>2</sub>SO<sub>4</sub>), which contributes to acid precipitation, and sulfates, which are components of PM<sub>10</sub> and PM<sub>2.5</sub>. Most of the SO<sub>2</sub> emitted into the atmosphere is produced by burning sulfur-containing fuels.

Exposure of a few minutes to low levels of SO<sub>2</sub> can result in airway constriction in some asthmatics. All asthmatics are sensitive to the effects of SO<sub>2</sub>. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, is observed after acute higher exposure to SO<sub>2</sub>. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO<sub>2</sub>. Animal studies suggest that despite SO<sub>2</sub> being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO<sub>2</sub> levels. In these studies, efforts to separate the effects of SO<sub>2</sub> from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.<sup>20,21,22</sup>

As summarized in Table 3.2-5, SO<sub>2</sub> concentrations were measured at five locations in 2020. No exceedances of 1-hour federal or state standards of 75 ppb and 250 ppb respectively, for SO<sub>2</sub> occurred in 2020 at any of the five locations monitored the Basin. The maximum 1-hour SO<sub>2</sub> concentration was 6.0 ppb (recorded at the Southwest Coast LA County station). The 99<sup>th</sup> percentile of 1-hour SO<sub>2</sub> concentration was 9.4 ppb (recorded at the South Coastal Los Angeles County 3 station). Though SO<sub>2</sub> concentrations remain well below the standards, SO<sub>2</sub> is a precursor to sulfate, which is a component of fine particulate matter, PM<sub>10</sub>, and PM<sub>2.5</sub>. Historical measurements showed concentrations to be well below standards and monitoring has been discontinued at other stations. All areas within South Coast AQMD's jurisdiction are in attainment for both the federal and state 1-hour SO<sub>2</sub> standards.

---

<sup>20</sup> U.S. Environmental Protection Agency. 2020. Criteria Air Pollutants, <https://www.epa.gov/criteria-air-pollutants>, accessed on June 10, 2022.

<sup>21</sup> South Coast AQMD. 2015. Health Effects of Air Pollution. <http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf>, accessed on June 10, 2022.

<sup>22</sup> South Coast AQMD. 2005. May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. <https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document>, accessed on June 10, 2022.

**Table 3-5**  
**South Coast AQMD – 2020 Air Quality Data – SO<sub>2</sub><sup>23</sup>**

SULFUR DIOXIDE (SO <sub>2</sub> ) <sup>a</sup>				
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Maximum Conc. ppb, 1-hour	99 <sup>th</sup> Percentile Conc. ppb, 1-hour
<b>LOS ANGELES COUNTY</b>				
1	Central LA	333	3.8	3.3
3	Southwest Coastal LA County	361	6.0	3.3
4	South Coastal LA County 3	--	--	9.4
<b>RIVERSIDE COUNTY</b>				
23	Metropolitan Riverside County 1	356	2.2	1.7
34	Central San Bernardino Valley 1	363	2.5	1.7
<b>DISTRICT MAXIMUM<sup>(b)</sup></b>			<b>6.0</b>	<b>3.3</b>
<b>SOUTH COAST AIR BASIN<sup>(c)</sup></b>			<b>6.0</b>	<b>3.3</b>
ppb = parts per billion    --    = Pollutant not monitored				
<p><sup>a</sup> The SO<sub>2</sub> federal 1-hour standard is 75 ppb. The state 1-hour and 24-hour standards are 0.25 ppm (250 ppb) and 0.04 ppm (40 ppb), respectively.</p> <p><sup>b</sup> District Maximum is the maximum value calculated at any station in the South Coast AQMD jurisdiction.</p> <p><sup>c</sup> Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.</p>				

### Particulate Matter (PM10 and PM2.5)

Of great concern to public health are the particles small enough to be inhaled into the deepest parts of the lung. Respirable particles (particulate matter less than about 10 micrometers in diameter (PM<sub>10</sub>)) can accumulate in the respiratory system and aggravate health problems such as asthma, bronchitis, and other lung diseases. Children, the elderly, exercising adults, and those suffering from asthma are especially vulnerable to adverse health effects of particulate matter.

A consistent correlation between elevated ambient fine particulate matter (PM<sub>2.5</sub>) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks, and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. Studies have reported an association between long-term exposure to air pollution dominated by PM<sub>2.5</sub> and increased mortality, reduction in lifespan, and an increased mortality from lung cancer. Daily fluctuations in PM<sub>2.5</sub> concentrations have also been related to hospital admissions for acute respiratory conditions, to school and kindergarten absences, to a decrease in respiratory function in normal children, and to increased medication use in children and adults with asthma. Studies have also shown lung function growth in children is reduced with long-term exposure to particulate matter. In addition to children, the elderly and people with preexisting respiratory and/or cardiovascular disease appear to be more susceptible to the effects of PM<sub>10</sub> and PM<sub>2.5</sub>.<sup>24,25,26</sup>

As summarized in Table 3.2-6, PM10 concentrations were measured at 23 locations in 2020. While the Coachella Valley Portion of the Salton Sea Air Basin is in nonattainment, the South Coast Air

<sup>23</sup> South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where SO<sub>2</sub> was monitored; [http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card\\_final.pdf](http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf), accessed on June 10, 2022.

<sup>24</sup> U.S. Environmental Protection Agency. 2020. Criteria Air Pollutants, <https://www.epa.gov/criteria-air-pollutants>, accessed on June 10, 2022.

<sup>25</sup> South Coast AQMD. 2015. Health Effects of Air Pollution. <http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf>, accessed on June 10, 2022.

<sup>26</sup> South Coast AQMD. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. <https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document>, accessed on June 10, 2022.

Basin has remained in attainment for the federal 24-hour PM<sub>10</sub> standard (150 µg/m<sup>3</sup>) since 2006, and it was not exceeded in 2020. The maximum 24-hour PM<sub>10</sub> concentration of 259 µg/m<sup>3</sup> was recorded at the Coachella Valley 3 station, but this high reading was attributed to high winds and is excluded in accordance with the U.S. EPA Exceptional Event Rule. Also, due to rounding considerations, the federal standard is technically 155 µg/m<sup>3</sup>. The state 24-hour PM<sub>10</sub> (50 µg/m<sup>3</sup>) standard was exceeded at several of the monitoring stations. All areas within South Coast AQMD's jurisdiction are in nonattainment for the state 24-hour PM<sub>10</sub> standard, which was exceeded at 19 of the monitoring stations in 2020.

The maximum annual average PM<sub>10</sub> concentration of 52.2 µg/m<sup>3</sup> was recorded at the Metropolitan Riverside County 3 station. The federal annual PM<sub>10</sub> standard has been revoked. The state annual PM<sub>10</sub> standard (20 µg/m<sup>3</sup>) was exceeded in most stations in each county in the Basin and in the Coachella Valley. All areas within South Coast AQMD's jurisdiction are in nonattainment for the state annual PM<sub>10</sub> standard, which was exceeded at most stations in each county in the South Coast Air Basin and in the Coachella Valley in 2020.

On December 14, 2012, U.S. EPA strengthened the annual NAAQS for PM<sub>2.5</sub> to 12 µg/m<sup>3</sup> and, as part of the revisions, a requirement was added to monitor near the most heavily trafficked roadways in large urban areas. Particle pollution is expected to be higher along these roadways because of direct emissions from cars and heavy-duty diesel trucks and buses. South Coast AQMD installed the two required PM<sub>2.5</sub> monitors at locations selected based upon the heavy-duty diesel traffic, which are: 1) I-710, located at Long Beach Blvd. in Los Angeles County near Compton and Long Beach; and 2) SR-60 near-road, located west of Vineyard Avenue near the San Bernardino/Riverside County border near Ontario, Mira Loma, and Upland.

As summarized in Table 3.2-7, PM<sub>2.5</sub> concentrations were measured at 19 locations in 2020. While the Coachella Valley Portion of the Salton Sea Air Basin is in attainment, the South Coast Air Basin is in nonattainment for federal and state PM<sub>2.5</sub> standards. The maximum 98<sup>th</sup> percentile 24-hour PM<sub>2.5</sub> concentration of 34.7 µg/m<sup>3</sup> was recorded at the Metropolitan Riverside County station, less than the federal 24-hour PM<sub>2.5</sub> standard of 35 µg/m<sup>3</sup>. There is no state 24-hour standard for PM<sub>2.5</sub>. The maximum annual average PM<sub>2.5</sub> concentration of 14.36 µg/m<sup>3</sup> was recorded at the CA-60 Near Road station, greater than the federal and state annual PM<sub>2.5</sub> standard of 12 µg/m<sup>3</sup>.

**Table 3-6**  
**South Coast AQMD – 2020 Air Quality Data – PM10<sup>27</sup>**

SUSPENDED PARTICULATE MATTER PM10 <sup>a+</sup>						
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. µg/m <sup>3</sup> , 24-hour	No. (%) Samples Exceeding Standard		Annual Average AAM Conc. <sup>b</sup> µg/m <sup>3</sup>
				Federal > 150 µg/m <sup>3</sup> , 24-hour	State > 50 µg/m <sup>3</sup> , 24-hour	
LOS ANGELES COUNTY						
1	Central LA	337	77	0	24 (7%)	23.0
3	Southwest Coastal LA County	37	43	0	0	22.3
4	South Coastal LA County 2	42	59	0	2 (5%)	24.9
4	South Coastal LA County 3	12	54	0	2 (17%)	27.8
9	East San Gabriel Valley 1	43	95	0	8 (19%)	37.7
9	East San Gabriel Valley 2	333	105	0	9 (3%)	25.2
13	Santa Clarita Valley	36	48	0	0	22.5
ORANGE COUNTY						
17	Central Orange County	329	120	0	13 (4%)	23.9
19	Saddleback Valley	42	53	0	1 (2%)	16.8
RIVERSIDE COUNTY						
22	Corona/Norco Area	44	100	0	10 (23%)	39.1
23	Metropolitan Riverside County 1	320	104	0	110 (34%)	30.0
23	Metropolitan Riverside County 3	304	124	0	154 (51%)	52.2
24	Perris Valley	37	77	0	6 (16%)	35.9
25	Elsinore Valley	334	84	0	7 (2%)	22.0
29	San Gorgonio Pass	42	46	0	0	19.2
30	Coachella Valley 1**	251	48	0	0	20.4
30	Coachella Valley 2**	317	77	0	8 (3%)	29.1
30	Coachella Valley 3**	320	259	1 (0%)	69 (22%)	38.0
SAN BERNARDINO COUNTY						
32	Northwest San Bernardino Valley	305	63	0	12 (4%)	30.5
34	Central San Bernardino Valley 1	40	61	0	6 (15%)	35.8
34	Central San Bernardino Valley 2	320	80	0	81 (25%)	38.7
35	East San Bernardino Valley	40	57	0	1 (3%)	23.4
37	Central San Bernardino Mountains	40	51	0	1 (3%)	18.1
DISTRICT MAXIMUM <sup>(c)</sup>			259	1	154	52.2
SOUTH COAST AIR BASIN <sup>(d)</sup>			124	0	173	52.2
µg/m <sup>3</sup> = micrograms per cubic meter of air + High PM10 (≥ 155 µg/m <sup>3</sup> ) data recorded in Coachella Valley (due to high winds) and the Basin (due to Independence Day fireworks) are excluded in accordance with the U.S. EPA AAM = Annual Arithmetic Mean Exceptional Event Rule.						
**Salton Sea Air Basin						
<sup>a</sup> PM10 statistics listed above are based on combined Federal Reference Method (FRM) and Federal Equivalent Method (FEM) data. Filter-based measurements for PM10 from March 28, 2020 to June 2, 2020 are not available due to COVID-19 Pandemic.						
<sup>b</sup> State annual average (AAM) PM10 standard is > 20 µg/m <sup>3</sup> . Federal annual PM10 standard (AAM > 50 µg/m <sup>3</sup> ) was revoked in 2006.						
<sup>c</sup> District Maximum is the maximum value calculated at any station in the South Coast AQMD jurisdiction.						
<sup>d</sup> Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.						

<sup>27</sup> South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where PM10 was monitored; [http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card\\_final.pdf](http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf), accessed on June 10, 2022.

**Table 3-7**  
**South Coast AQMD – 2020 Air Quality Data – PM<sub>2.5</sub><sup>28</sup>**

SUSPENDED PARTICULATE MATTER PM2.5 <sup>a</sup>						
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. µg/m <sup>3</sup> , 24-hour	98 <sup>th</sup> Percentile Conc. in µg/m <sup>3</sup> 24-hr	No. (%) Samples Exceeding Federal Std > 35 µg/m <sup>3</sup> , 24-hour	Annual Average AAM Conc. <sup>b</sup> µg/m <sup>3</sup>
<b>LOS ANGELES COUNTY</b>						
1	Central LA	353	47.30	28.00	2 (1%)	12.31
4	South Coastal LA County 1	117	28.10	26.10	0	11.26
4	South Coastal LA County 2	357	39.00	28.00	1 (0%)	11.38
4	I-710 Near Road <sup>##</sup>	356	44.00	31.50	2 (1%)	12.93
6	West San Fernando Valley	116	27.60	26.40	0	10.13
8	West San Gabriel Valley	117	34.90	31.20	0	11.06
9	East San Gabriel Valley 1	116	33.00	25.80	0	11.13
11	South San Gabriel Valley	116	35.40	30.50	0	13.22
12	South Central LA County	352	43.20	34.10	7 (2%)	13.57
<b>ORANGE COUNTY</b>						
17	Central Orange County	355	41.40	27.10	1 (0%)	11.27
19	Saddleback Valley	120	35.00	32.70	0	8.81
<b>RIVERSIDE COUNTY</b>						
23	Metropolitan Riverside County 1	357	41.00	29.60	4 (1%)	12.63
23	Metropolitan Riverside County 3	358	38.70	34.70	5 (1%)	14.03
30	Coachella Valley 1 <sup>**</sup>	122	23.90	16.90	0	6.42
30	Coachella Valley 2 <sup>**</sup>	121	25.60	20.20	0	8.41
<b>SAN BERNARDINO COUNTY</b>						
33	CA-60 Near Road <sup>##</sup>	356	53.10	3.70	4 (1%)	14.36
34	Central San Bernardino Valley 1	117	46.10	27.40	1 (1%)	11.95
34	Central San Bernardino Valley 2	115	25.70	24.70	0	11.66
38	East San Bernardino Mountains	58	24.30	20.40	0	7.62
<b>DISTRICT MAXIMUM<sup>(c)</sup></b>			<b>53.1</b>	<b>34.1</b>	<b>7</b>	<b>14.36</b>
<b>SOUTH COAST AIR BASIN<sup>(d)</sup></b>			<b>53.1</b>	<b>34.1</b>	<b>13</b>	<b>14.36</b>
µg/m <sup>3</sup> = micrograms per cubic meter of air			AAM = Annual Arithmetic Mean			
**Salton Sea Air Basin						
<sup>a</sup> PM2.5 statistics listed above are for the FRM data only with the exception of Central Orange County, I-710 Near Road, Metropolitan Riverside County 1 and 3, CA-60 Near Road, and South Coastal LA Count 2 where FEM PM2.5 measurements are used to supplement missing FRM measurements because they pass the screening criteria for the South Coast AQMD Continuous Monitor Comparability Assessment and Request for Waiver dated July 1, 2021. <sup>b</sup> Federal and State standards are annual average (AAM) > 12.0 µg/m <sup>3</sup> . <sup>c</sup> District Maximum is the maximum value calculated at any station in the South Coast AQMD jurisdiction. <sup>d</sup> Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.						

## Lead

Under the federal Clean Air Act, lead is classified as a “criteria pollutant.” Lead causes observed adverse health effects at ambient concentrations. Lead is also deemed a carcinogenic toxic air contaminant (TAC) by the Office of Environmental Health Hazard Assessment (OEHHA). Lead in the atmosphere is a mixture of several lead compounds. Leaded gasoline and lead smelters have been the main sources of lead emitted into the air. Due to the phasing out of leaded gasoline, there was a dramatic reduction in atmospheric lead in the Basin over the past three decades. In fact, there were no violations of the lead standards at South Coast AQMD’s regular air monitoring stations from 1982 to 2020, primarily due to the removal of lead from gasoline.

<sup>28</sup> South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where PM2.5 was monitored; [http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card\\_final.pdf](http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf), accessed on June 10, 2022.

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death. It appears that there are no direct effects of lead on the respiratory system. Lead can be stored in the bone from early-age environmental exposure, and elevated blood lead levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland), and osteoporosis (breakdown of bone tissue). Fetuses and breast-fed babies can be exposed to higher levels of lead because of previous environmental lead exposure of their mothers.<sup>29, 30 31</sup>

As summarized in Table 3.2-8, South Coast AQMD monitored lead concentrations at eight monitoring stations in 2020. The South Coast Air Basin (Los Angeles County area) is currently in nonattainment for lead. This nonattainment designation was due to the operations of specific stationary sources of lead emissions. The Mojave Desert Air Basin and Salton Sea Air Basin are both in attainment for lead. The South Coast AQMD has petitioned U.S. EPA for a redesignation to attainment for the federal lead standard for the Los Angeles County nonattainment area. Stringent South Coast AQMD rules governing lead-producing sources will help to ensure that there are no future violations of the federal standard. At the time of this report, South Coast AQMD has not yet received a response from U.S. EPA regarding the petition. The current lead concentrations in Los Angeles County are below the federal 3-month rolling average standard of  $0.15 \mu\text{g}/\text{m}^3$ . Further, the state 30-day standard of  $1.5 \mu\text{g}/\text{m}^3$  was not exceeded in any areas under the jurisdiction of the South Coast AQMD in 2020.

---

<sup>29</sup> U.S. Environmental Protection Agency. 2020. Criteria Air Pollutants, <https://www.epa.gov/criteria-air-pollutants>, accessed on June 10, 2022.

<sup>30</sup> South Coast AQMD. 2015. Health Effects of Air Pollution. <http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf>, accessed on June 10, 2022.

<sup>31</sup> South Coast AQMD. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. <https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document>, accessed on June 10, 2022.

**Table 3-8**  
**South Coast AQMD – 2020 Air Quality Data – Lead and Sulfates<sup>32</sup>**

		LEAD <sup>a++</sup>		SULFATES <sup>b</sup>	
Source Receptor Area No.	Location of Air Monitoring Station	Max. Monthly Average Conc. <sup>m</sup> µg/m <sup>3</sup>	Max. 3-Month Rolling Average <sup>m</sup> µg/m <sup>3</sup>	No. Days of Data	Max. Conc. µg/m <sup>3</sup> , 24-hour
LOS ANGELES COUNTY					
1	Central LA	0.013	0.011	45	3.3
3	Southwest Coastal LA County	0.008	0.005	--	--
4	South Coastal LA County 2	0.008	0.006	--	--
4	South Coastal LA County 3	--	--	14	2.3
9	East San Gabriel Valley 1	0.010	0.007	45	3.1
11	South San Gabriel Valley	0.012	0.011	--	--
12	South Central LA County	0.010	0.009	--	--
ORANGE COUNTY					
17	Central Orange County	--	--	44	3.3
RIVERSIDE COUNTY					
23	Metropolitan Riverside County 1	0.016	0.010	84	5.2
30	Coachella Valley 2**	--	--	89	2.7
SAN BERNARDINO COUNTY					
34	Central San Bernardino Valley 1	--	--	44	3.0
34	Central San Bernardino Valley 2	0.010	0.09	--	--
DISTRICT MAXIMUM <sup>(c)</sup>		0.016	0.011	5.2	
SOUTH COAST AIR BASIN <sup>(d)</sup>		0.016	0.011	5.2	
µg/m <sup>3</sup> = micrograms per cubic meter of air		++ Higher lead concentrations were recorded at near-source monitoring			
-- Pollutant not monitored		sites immediately downwind of stationary lead sources. Maximum			
** Salton Sea Air Basin		monthly and 3-month rolling averages recorded were 0.96 µ/m <sup>3</sup> and 0.059			
		µ/m <sup>3</sup> .			
<sup>a</sup> Federal lead standard is 3-months rolling average > 0.15 µg/m <sup>3</sup> ; state standard is monthly average ≥ 1.5 µg/m <sup>3</sup> . Lead standards were not exceeded.					
<sup>b</sup> State sulfate standard is 24-hour ≥ 25 µg/m <sup>3</sup> . There is no federal standard for sulfate.					
<sup>c</sup> District Maximum is the maximum value calculated at any station in the South Coast AQMD jurisdiction.					
<sup>d</sup> Concentrations are the maximum value observed at any station in the South Coast Air Basin. Number of daily exceedances are the total number of days that the indicated concentration is exceeded at any station in the South Coast Air Basin.					

## Sulfates

Sulfates are chemical compounds which contain the sulfate ion and are part of the mixture of solid materials which make up PM<sub>10</sub>. Most of the sulfates in the atmosphere are produced by oxidation of SO<sub>2</sub>. Oxidation of sulfur dioxide yields sulfur trioxide (SO<sub>3</sub>), which reacts with water to form sulfuric acid, which then contributes to acid deposition. The reaction of sulfuric acid with basic substances such as ammonia yields sulfates, a component of PM<sub>10</sub> and PM<sub>2.5</sub>.

Most of the health effects associated with fine particles and SO<sub>2</sub> at ambient levels are also associated with sulfates. Thus, both mortality and morbidity effects have been observed with an increase in ambient sulfate concentrations. However, efforts to separate the effects of sulfates from the effects of other pollutants have generally not been successful.<sup>33,34,35</sup>

<sup>32</sup> South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where lead and sulfates were monitored; [http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card\\_final.pdf](http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf).

<sup>33</sup> U.S. Environmental Protection Agency. 2020. Criteria Air Pollutants, . <https://www.epa.gov/criteria-air-pollutants>, accessed on June 10, 2022.

<sup>34</sup> South Coast AQMD. 2015. Health Effects of Air Pollution. <http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf>, accessed on June 10, 2022.

<sup>35</sup> South Coast AQMD. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. <https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document>, accessed on June 10, 2022.

As summarized in Table 3.2-8, South Coast AQMD monitored sulfate at seven monitoring stations in 2020. The state 24-hour sulfate standard of 25 µg/m<sup>3</sup> was not exceeded in the South Coast Air Basin, which is in attainment for sulfate. The Mojave Desert Air Basin and Salton Sea Air Basin are also in attainment for sulfate. There are no federal sulfate standards.

### **Vinyl Chloride**

Vinyl chloride is a colorless, flammable gas at ambient temperature and pressure. It is also highly toxic and is classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as A1 (confirmed carcinogen in humans) and by the International Agency for Research on Cancer (IARC) as 1 (known to be a human carcinogen).<sup>36</sup> At room temperature, vinyl chloride is a gas with a sickly-sweet odor that is easily condensed. However, it is stored as a liquid. Due to the hazardous nature of vinyl chloride to human health there are no end products that use vinyl chloride in its monomer form. Vinyl chloride is a chemical intermediate, not a final product. It is an important industrial chemical chiefly used to produce polymer polyvinyl chloride (PVC). The process involves vinyl chloride liquid fed to polymerization reactors where it is converted from a monomer to a polymer PVC. The final product of the polymerization process is PVC in either a flake or pellet form. Billions of pounds of PVC are sold on the global market each year. From its flake or pellet form, PVC is sold to companies that heat and mold the PVC into end products such as PVC pipe and bottles.

In the past, vinyl chloride emissions have been associated primarily with sources such as landfills. Risks from exposure to vinyl chloride are considered to be localized impacts rather than regional impacts. Because landfills in the South Coast AQMD are subject to Rule 1150.1 – Control of Gaseous Emissions from Municipal Solid Waste Landfills, which contain stringent requirements for landfill gas collection and control, potential vinyl chloride emissions are expected to be below the level of detection. Therefore, South Coast AQMD does not monitor for vinyl chloride at its monitoring stations.

### **Volatile Organic Compounds**

There are no state or NAAQS for VOCs because they are not classified as criteria pollutants. VOCs are regulated, however, because VOCs are a precursor to the formation of ozone in the atmosphere. VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher PM<sub>10</sub> and lower visibility levels.

Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOCs because of interference with oxygen uptake. In general, ambient VOC concentrations in the atmosphere are suspected to cause coughing, sneezing, headaches, weakness, laryngitis, and bronchitis, even at low concentrations. Some hydrocarbon components classified as VOC emissions are thought or known to be hazardous. Benzene, for example, one hydrocarbon component of VOC emissions, is known to be a human carcinogen.

### **Non-Criteria Pollutants**

Although South Coast AQMD's primary mandate is attaining the state and NAAQS for criteria pollutants within the Basin, South Coast AQMD also has a general responsibility pursuant to Health and Safety Code Section 41700 to control emissions of air contaminants and prevent

---

<sup>36</sup> International Agency for Research on Cancer. Vinyl Chloride Exposure Data, <https://monographs.iarc.who.int/wp-content/uploads/2018/06/mono100F-31.pdf>, accessed on June 10, 2022.



endangerment to public health. Additionally, state law requires South Coast AQMD to implement ATCMs adopted by CARB and to implement the Air Toxics “Hot Spots” Act. As a result, South Coast AQMD has regulated pollutants other than criteria pollutants such as TACs, GHGs, and stratospheric ozone depleting compounds. South Coast AQMD has developed several rules which are designed to control non-criteria pollutants from both new and existing sources. These rules originated through state directives, CAA requirements, or the South Coast AQMD rulemaking process.

In addition to promulgating non-criteria pollutant rules, South Coast AQMD has been evaluating control measures in the 2016 AQMP as well as existing rules to determine whether they would affect, either positively or negatively, emissions of non-criteria pollutants. For example, rules which target the VOC components of coating materials and that allow for the replacement of the VOC components with a non-photochemically reactive chlorinated substance would reduce the impacts resulting from ozone formation but could increase emissions of toxic compounds or other substances that may have adverse impacts on human health.

**Carcinogenic Health Risks from TACs:** One of the primary health risks of concern due to exposure to TACs is the risk of contracting cancer. The carcinogenic potential of TACs is a public health concern because it is currently believed by many scientists that there is no ‘safe’ level of exposure to carcinogens. Any exposure to a carcinogen poses some risk of causing cancer. It is currently estimated that about one in four deaths in the United States is attributable to cancer. The proportion of cancer deaths attributable to air pollution has not been estimated using epidemiological methods.

**Non-cancer Health Risks from TACs:** Unlike carcinogens, for most non-carcinogens it is believed that there is a threshold level of exposure to the compound below which it will not pose a health risk. CalEPA’s OEHHA develops Reference Exposure Levels (RELs) for TACs as health-conservative estimates of the levels of exposure at or below which health effects are not expected. The non-cancer health risk due to exposure to a TAC is assessed by comparing the estimated level of exposure to the REL. The comparison is expressed as the ratio of the estimated exposure level to the REL, called the hazard index (HI).

**Multiple Air Toxics Exposure Study (MATES):** In 1986, South Coast AQMD conducted the first MATES report to determine the risks associated with major airborne carcinogens in the South Coast Air Basin. The most current version (MATES V<sup>37</sup>) consists of a monitoring program, an updated emissions inventory of TACs, and a modeling effort to characterize risk across the South Coast Air Basin. The study focuses on the carcinogenic risk from exposure to air toxics but does not estimate mortality or other health effects from criteria pollutant exposures which are conducted as part of the 2016 AQMP. Two key updates were implemented in MATES V. First, cancer risk estimations now take into account multiple exposure pathways. Previous MATES studies quantified the cancer risks based on the inhalation pathway only; a cumulative cancer risk accounting for inhalation and non-inhalation pathways is approximately eight percent higher than the inhalation-only calculation for the MATES V data. Second, along with cancer risk estimates, MATES V includes information on the chronic non-cancer health impacts from inhalation and non-inhalation pathways for the first time. The cumulative chronic hazard index accounting for the inhalation and non-inhalation pathways is approximately twice the inhalation-only calculation for the MATES V data.

---

<sup>37</sup> South Coast AQMD, MATES V, Multiple Air Toxics Exposure Study in the South Coast AQMD, Final Report, August 2021. <http://www.aqmd.gov/docs/default-source/planning/mates-v/mates-v-final-report.pdf>, accessed on June 10, 2022.

### 3.2.2 GREENHOUSE GAS EMISSIONS

Greenhouse gases (GHGs) trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The latter, anthropogenic sources of GHGs, is the focus of impacts under CEQA. Traditionally, GHGs and other global warming pollutants are perceived as solely global in their impacts, and that increasing emissions anywhere in the world contributes to climate change anywhere in the world. A study conducted on the health impacts of CO<sub>2</sub> ‘domes’ that form over urban areas showed that they cause increases in local temperatures and local criteria pollutants, which have adverse health effects.<sup>38</sup>

#### 3.2.2.1 Climate Change

Global climate change is a change in the average weather of the Earth, which can be measured by wind patterns, storms, precipitation, and temperature. Historical records have shown that temperature changes have occurred in the past, such as during previous ice ages. Data indicates that the current temperature record differs from previous climate changes in rate and magnitude.

Gases that trap heat in the atmosphere are often called greenhouse gases (GHGs), comparable to a greenhouse, which captures and traps radiant energy. GHGs are emitted by natural processes and human activities. The accumulation of greenhouse gases in the atmosphere regulates the earth’s temperature. Global warming is the observed increase in average temperature of the earth’s surface and atmosphere. The primary cause of global warming is an increase of GHGs in the atmosphere. The six major GHGs are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons (HFCs), and perfluorocarbon (PFCs). The GHGs absorb longwave radiant energy emitted by the Earth, which warms the atmosphere. The GHGs also emit longwave radiation both upward to space and back down toward the surface of the Earth. The downward part of this longwave radiation emitted by the atmosphere is known as the "greenhouse effect." Emissions from human activities such as fossil fuel combustion for electricity production and vehicles have elevated the concentration of these gases in the atmosphere.

- **Carbon dioxide (CO<sub>2</sub>)** is an odorless, colorless greenhouse gas. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (human caused) sources of CO<sub>2</sub> include burning coal, oil, gasoline, natural gas, and wood.
- **Methane (CH<sub>4</sub>)** is a flammable gas and is the main component of natural gas.
- **Nitrous Oxide (N<sub>2</sub>O)**, also known as laughing gas, is a colorless greenhouse gas. Some industrial processes such as fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions also contribute to the atmospheric load of N<sub>2</sub>O.
- **Sulfur hexafluoride (SF<sub>6</sub>)** is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF<sub>6</sub> is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.
- **Hydrofluorocarbons (HFCs)** are synthetic man-made chemicals composed of hydrogen, fluorine, and carbon that are used as a substitute for chlorofluorocarbons (whose production

<sup>38</sup> Jacobsen, Mark Z. “Enhancement of Local Air Pollution by Urban CO<sub>2</sub> Domes,” Environmental Science and Technology, as described in Stanford University press release on March 16, 2010 available at: <http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html>, accessed on June 10, 2022.

was stopped as required by the Montreal Protocol) for use in automobile air conditioners and refrigerants.

- **Perfluorocarbons (PFCs)** are synthetic man-made chemicals composed of fluorine and carbon that are used as a substitute for chlorofluorocarbons in producing aluminum and manufacturing semiconductors

Scientific consensus, as reflected in recent reports issued by the United Nations Intergovernmental Panel on Climate Change, is that the majority of the observed warming over the last 50 years can be attributable to increased concentration of GHGs in the atmosphere due to human activities. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants. In the past, gradual changes in temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but in a human's lifetime. Industrial activities, particularly increased consumption of fossil fuels (gasoline, diesel, coal, etc.), have heavily contributed to the increase in atmospheric levels of GHGs. The United Nations Intergovernmental Panel on Climate Change constructed several emission trajectories of greenhouse gases needed to stabilize global temperatures and climate change impacts. It concluded that a stabilization of greenhouse gases at 400 to 450 ppm carbon dioxide-equivalent (CO<sub>2</sub>eq) concentration is required to keep global mean warming below two degrees Celsius, which has been identified as necessary to avoid dangerous impacts from climate change.<sup>39</sup>

The potential health effects from global climate change may arise from temperature increases, climate-sensitive diseases, extreme events, air quality impacts, and sea level rise. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems (e.g., heat rash and heat stroke). In addition, climate sensitive diseases may increase, such as those spread by mosquitoes and other insects. Those diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding, hurricanes, and wildfires can displace people and agriculture, which would have negative consequences. Drought in some areas may increase, which would decrease water and food availability. Global warming may also contribute to air quality problems from increased frequency of smog and particulate air pollution.<sup>40</sup>

The impacts of climate change will also affect projects in various ways. Effects of climate change are rising sea levels and changes in snowpack.<sup>41</sup> The extent of climate change impacts at specific locations remains unclear.

Federal, state, and local agencies are working towards more precisely quantifying impacts in various regions. As an example, the California Department of Water Resources is expected to formalize a list of foreseeable water quality issues associated with various degrees of climate change. Once state government agencies make these lists available, they could be used to more precisely determine to what extent a project creates global climate change impacts.

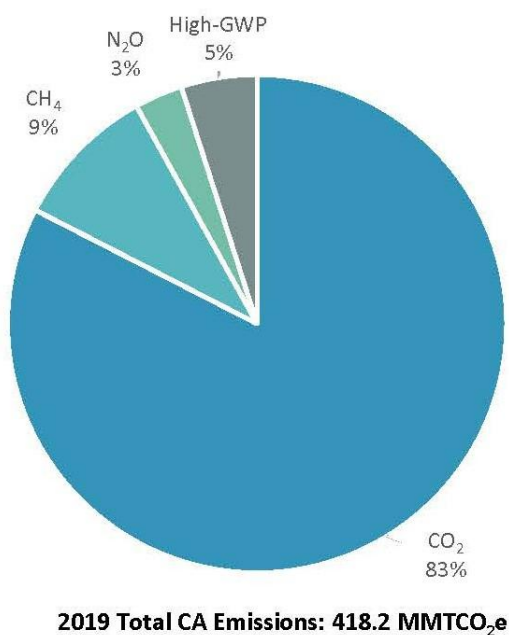
<sup>39</sup> Intergovernmental Panel on Climate Change (IPCC). 2014. *Fifth Assessment Report: Climate Change 2014*. New York: Cambridge University Press, [https://issuu.com/unipcc/docs/syr\\_ar5\\_final\\_full\\_wcover](https://issuu.com/unipcc/docs/syr_ar5_final_full_wcover), accessed on June 10, 2022.

<sup>40</sup> Center for Disease Control. 2016. Climate Change Decreases the Quality of the Air We Breathe. [https://www.cdc.gov/climateandhealth/pubs/AIR-QUALITY-Final\\_508.pdf](https://www.cdc.gov/climateandhealth/pubs/AIR-QUALITY-Final_508.pdf), accessed on June 10, 2022.

<sup>41</sup> Office of Environmental Health Hazards Assessment, 2018. Indicators of Climate Change in California. <https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf>, accessed on June 10, 2022.

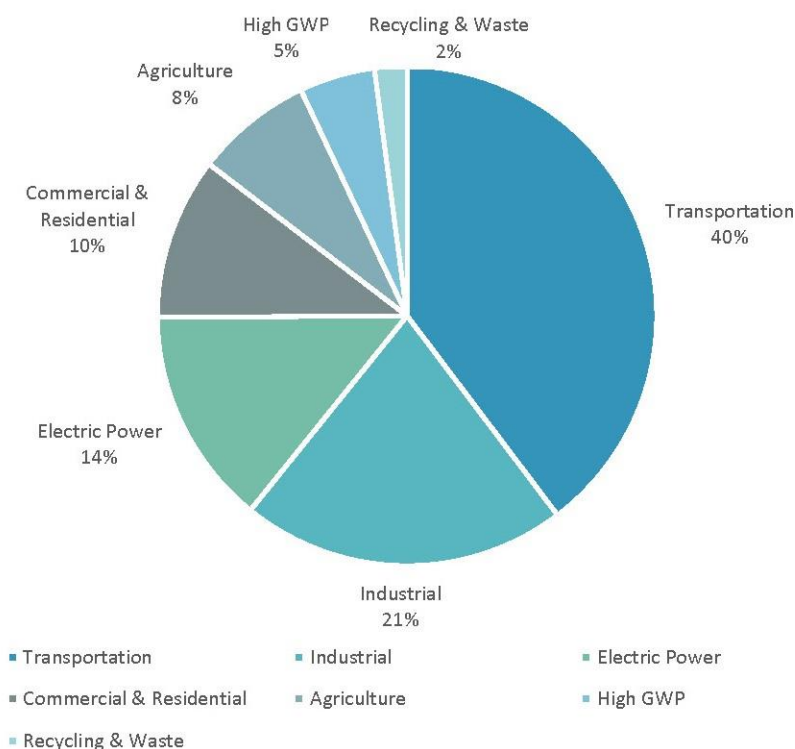
### 3.2.2.1.1 Statewide Inventory

GHG emissions in the state have been inventoried by CARB. As shown in Figure 3-1, CO<sub>2</sub> accounts for 83 percent of the total 418.2 million metric tons (MT) of CO<sub>2</sub>eq emissions in the state in 2019. Figure 3-2 illustrates that transportation (primarily on-road travel) is the single largest source of CO<sub>2</sub> emissions in the state. Upstream transportation emissions from the refinery and oil and gas sectors are categorized as CO<sub>2</sub> emissions from industrial sources and constitute about 50 percent of the industrial source emissions. When these emissions sources are attributed to the transportation sector, the emissions from the transportation sector amount to approximately half of statewide GHG emissions. In addition to transportation, electricity production, and industrial and residential sources also are important contributors to CO<sub>2</sub> emissions. Figures 3-1 and 3-2 show state GHG emission contributions by GHG and sector based on the 2019 Greenhouse Gas Emission Inventory. The emissions presented in Figure 3-2 are depicted by Scoping Plan sector, which includes separate categories for high-global warming potential (GWP) and recycling/waste emissions that are otherwise typically included within other economic sectors.



**Figure 3-1**  
**2019 Statewide GHG Emission Contributions by GHG<sup>42</sup>**

<sup>42</sup> CARB, 2022. Draft 2022 Scoping Plan Update, Figure 1-7, page 33, <https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf>, accessed on June 10, 2022.



**Figure 3-2**  
**2019 Statewide GHG Emission Contributions by Scoping Plan Sector<sup>43</sup>**

The GHG emission inventory encompasses emission sources within the state’s border, as well as imported electricity consumed in the state. Statewide GHG emissions calculations use many data sources, including data from other state and federal agencies. However, the primary source of data comes from reports submitted to CARB through the CARB Regulation for the Mandatory Reporting of GHG Emissions, which requires facilities and entities with more than 10,000 metric tons of CO<sub>2</sub>eq to report emissions directly to CARB. Reported emissions greater than 25,000 metric tons are required to be verified by a CARB-accredited third-part verification body.

### 3.2.2.2 Regulatory Setting

#### 3.2.2.2.1 Federal

**Greenhouse Gas Endangerment Findings:** On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding greenhouse gases pursuant to the federal Clean Air Act (CAA) Section 202(a). The Endangerment Finding stated that CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, and SF<sub>6</sub> taken in combination endanger both the public health and the public welfare of current and future generations. The *Cause or Contribute Finding* stated that the combined emissions from motor vehicles and motor vehicle engines contribute to the greenhouse gas air pollution that endangers public health and welfare. These findings were a prerequisite for implementing GHG standards for vehicles. The U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) finalized emission standards for light-duty vehicles in May 2010 and for heavy-duty vehicles in August of 2011. Subsequently, the U.S. EPA rolled back the light duty GHG standards, a decision which is currently under litigation. In August 2021, the U.S. EPA proposed replacement GHG standards for light-duty vehicles and announced plans to reduce GHG emissions from heavy-

<sup>43</sup> CARB, 2022. Draft 2022 Scoping Plan Update, Figure 1-8, page 34, <https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf>, accessed on June 10, 2022.

duty trucks through a series of major rulemakings over the next three years with the first to be finalized in 2022.<sup>44</sup> On March 7, 2022, the U.S. EPA proposed the first step in the U.S. EPA’s “Clean Trucks Plan” that would revise existing GHG standards for model year 2027 and beyond trucks in subsectors where electrification is advancing at a more rapid pace. The sectors include school buses, transit buses, commercial delivery trucks, and short-haul tractors.

**Renewable Fuel Standard:** The Renewable Fuel Standard (RFS) program was established under the Energy Policy Act (EPA) of 2005 and required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the Energy Independence and Security Act (EISA) of 2007, the RFS program was expanded to include diesel, required that the volume of renewable fuel blended into transportation fuel be increased from nine billion gallons in 2008 to 36 billion gallons by 2022, established new categories of renewable fuel, and required U.S. EPA to apply lifecycle GHG performance threshold standards so that each category of renewable fuel emits fewer greenhouse gases than the petroleum fuel it replaces. In a separate measure, the U.S. EPA will be setting new GHG emission standards for heavy-duty vehicles as soon as model year 2030, which will more comprehensively address the long-term trend towards zero emission vehicles across the heavy-duty sector.<sup>45</sup>

**GHG Tailoring Rule:** On May 13, 2010, U.S. EPA finalized the GHG Tailoring Rule to phase in the applicability of the Prevention of Significant Deterioration (PSD) and Title V operating permit programs for GHGs. The GHG Tailoring Rule was tailored to include the largest GHG emitters, while excluding smaller sources (restaurants, commercial facilities and small farms). The first phase (from January 2, 2011 to June 30, 2011) addressed the largest sources that contributed 65 percent of the stationary GHG sources. Title V GHG requirements were triggered only when affected facility owners/operators were applying, renewing or revising their permits for non-GHG pollutants. PSD GHG requirements were applicable only if sources were undergoing permitting actions for other non-GHG pollutants and the permitted action would increase GHG emission by 75,000 metric tons of CO<sub>2</sub> equivalent emissions (CO<sub>2</sub>eq) per year or more. The Tailoring Rule originally included a second phase for sources that were not otherwise major sources but had the potential to emit 100,000 metric tons of CO<sub>2</sub>eq per year. In 2014, the U.S. Supreme Court held that U.S. EPA was limited to phase 1.

**GHG Reporting Program:** U.S. EPA issued the Mandatory Reporting of Greenhouse Gases Rule (40 CFR Part 98) under the 2008 Consolidated Appropriations Act. The Mandatory Reporting of Greenhouse Gases Rule requires reporting of GHG data from large sources and suppliers under the Greenhouse Gas Reporting Program. Suppliers of certain products that would result in GHG emissions if released, combusted or oxidized; direct emitting source categories; and facilities that inject CO<sub>2</sub> underground for geologic sequestration or any purpose other than geologic sequestration are included. Facilities that emit 25,000 metric tons or more per year of GHGs as CO<sub>2</sub>eq are required to submit annual reports to U.S. EPA.

**Ozone-Depleting Substances:** Under the CAA Title VI, the U.S. EPA is assigned responsibility for implementing programs that protect the stratospheric ozone layer. 40 CFR Part 82 contains U.S. EPA’s regulations specific to protecting the ozone layer. These U.S. EPA regulations phase

<sup>44</sup> U.S. EPA, 2021. EPA to Overhaul Pollution Standards for Passenger Vehicles and Heavy-Duty Trucks, Paving Way for Zero-Emission Future, News Release, August 5, 2021. <https://www.epa.gov/newsreleases/epa-overhaul-pollution-standards-passenger-vehicles-and-heavy-duty-trucks-paving-way>, accessed on June 10, 2022.

<sup>45</sup> U.S. EPA, 2022. EPA Proposes Stronger Standards for Heavy-Duty Vehicles to Promote Clean Air, Protect Communities, and Support Transition to Zero-Emissions Future, News Release, March 7, 2022. <https://www.epa.gov/newsreleases/epa-proposes-stronger-standards-heavy-duty-vehicles-promote-clean-air-protect>, accessed on June 10, 2022.

out the production and import of ozone-depleting substances (ODSs) consistent with the Montreal Protocol.<sup>46</sup> ODSs are typically used as refrigerants or as foam-blowing agents. ODS are regulated as Class I or Class II controlled substances. Class I substances have a higher ozone-depleting potential and have been completely phased out in the United States, except for exemptions allowed under the Montreal Protocol. Class II substances are HCFCs, which are transitional substitutes for many Class I substances and are being phased out.

#### 3.2.2.2.2 State

### **Statewide GHG Reduction Targets**

**Executive Order S-3-05:** In June 2005, Governor Schwarzenegger signed Executive Order S-3-05, which established emission reduction targets. The goals would reduce GHG emissions to 2000 levels by 2010, then to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

**Assembly Bill (AB) 32 – Global Warming Solutions Act:** On September 27, 2006, AB 32, the California Global Warming Solutions Act of 2006, was signed by Governor Schwarzenegger. AB 32 expanded on Executive Order S-3-05. The California legislature stated that “global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California.” AB 32 represented the first enforceable statewide program in the U.S. to cap all GHG emissions from major industries that includes penalties for non-compliance. While acknowledging that national and international actions will be necessary to fully address the issue of global warming, AB 32 laid out a program to inventory and reduce GHG emissions in California and from power generation facilities located outside the state that serve California residents and businesses.

Consistent with the requirement to develop an emission reduction plan, CARB prepared a Scoping Plan indicating how GHG emission reductions will be achieved through regulations, market mechanisms, and other actions. The 2008 Scoping Plan called for reducing GHG emissions to 1990 levels by 2020. This means cutting approximately 30 percent from business-as-usual (BAU) emission levels projected for 2020, or about 15 percent from 2005 to 2008 levels.<sup>47</sup> However, as of January 1, 2020, SB 32 became the guiding GHG regulation.

**Senate Bill (SB) 32 and AB 197:** In September 2016, Governor Brown signed Senate Bill 32 and Assembly Bill 197, making the Executive Order goal of reducing GHG emissions to 40 percent below 1990 levels by 2030 into a statewide, mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direct emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources. CARB prepared a 2017 Climate Change Scoping Plan Update, which outlines potential regulations and programs, including strategies consistent with AB 197 requirements, to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 million MTCO<sub>2</sub>eq for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.<sup>48</sup> On May 10, 2022, CARB released the Draft 2022 Scoping Plan Update for public

<sup>46</sup> The Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol) is an international treaty designed to phase out halogenated hydrocarbons such as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), which are considered ODSs. The Montreal Protocol was first signed on September 16, 1987 and has been revised seven times. The U.S. ratified the original Montreal Protocol and each of its revisions.

<sup>47</sup> California Air Resources Board. 2008, December. Climate Change Scoping Plan, A Framework for Change.

<sup>48</sup> CARB, 2017, California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target, [https://www.arb.ca.gov/cc/scopingplan/2030sp\\_pp\\_final.pdf](https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf), accessed on June 10, 2022.

review and assessed progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045.

The major elements of the Draft 2022 Scoping Plan Update include: 1) “the aggressive reduction of fossil fuels wherever they are currently used in California, building on and accelerating carbon reduction programs that have been in place here for a decade and a half; and 2) re-envisioning of our forests, shrublands/chaparral, croplands, wetlands, and other lands (referred to as Natural and Working Lands) to ensure that they play as robust a role as possible in incorporating and storing more carbon in the trees, plants, soil, and wetlands that cover 90 percent of the state’s 105 million acres. Specifically, the Draft 2022 Scoping Plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 or earlier.
- Focuses on strategies for reducing California’s dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California’s most impacted communities as a driving principle throughout the document.
- Incorporates the contribution of natural and working lands to the state’s GHG emissions, as well as its role in achieving carbon neutrality.
- Relies on the most up to date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration as well a direct air capture.
- Evaluates multiple options for achieving our GHG and carbon neutrality targets, as well as the public health benefits and economic impacts associated with each.<sup>49</sup>

California’s climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero emission and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conserve agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten criteria air pollutants and TACs emissions limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the stringency of the standards for the various strategies covered under the Mobile Source Strategy, which include increasing ZE buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).

---

<sup>49</sup> CARB 2022, Draft 2022 Scoping Plan Update, May 10, 2022, Executive Summary, <https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf>, accessed on August 5, 2022.



- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency and utilizes near-zero emission technology and deployment of ZE trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Continued implementation of SB 375.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.<sup>50</sup>

In addition to the statewide strategies listed above, the 2017 Climate Change Scoping Plan also identified local governments as essential partners in achieving the state's long-term GHG reduction goals and recommended local actions to reduce GHG emissions—for example, statewide targets of no more than six MTCO<sub>2</sub>eq or less per capita by 2030 and two MTCO<sub>2</sub>eq or less per capita by 2050. CARB recommends that local governments evaluate and adopt robust and quantitative locally appropriate goals that align with the statewide per capita targets and sustainable development objectives and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the state's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population) consistent with the Scoping Plan and the state's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from VMT, and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.<sup>51</sup>

The Scoping Plan scenario is set against what is called the business-as-usual (BAU) yardstick—that is, what would the GHG emissions look like if the state did nothing at all beyond the existing policies that are required and already in place to achieve the 2020 limit. It includes the existing renewables requirements, advanced clean cars, the LCFS, and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. The known commitments are expected to result in emissions that are 60 million MTCO<sub>2</sub>eq above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

<sup>50</sup> CARB, 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target, [https://www.arb.ca.gov/cc/scopingplan/2030sp\\_pp\\_final.pdf](https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf), accessed on June 10, 2022.

<sup>51</sup> CARB, 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target, [https://www.arb.ca.gov/cc/scopingplan/2030sp\\_pp\\_final.pdf](https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf), accessed on June 10, 2022.

## **Mobile Sources**

**AB 1493 Vehicular Emissions:** Prior to the U.S. EPA and NHTSA joint rulemaking, Governor Schwarzenegger signed Assembly Bill AB 1493 (2002). AB 1493 requires that CARB develop and adopt, by January 1, 2005, regulations that achieve “the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the state.” CARB originally approved regulations to reduce GHGs from passenger vehicles in September 2004, with the regulations to take effect in 2009 (see amendments to CCR Title 13 Sections 1900 and 1961 (13 CCR 1900, 1961), and the adoption of CCR Title 13 Section 1961.1 (13 CCR 1961.1)). California’s first request to the U.S. EPA to implement GHG standards for passenger vehicles was made in December 2005 and subsequently denied by the U.S. EPA in March 2008. The U.S. EPA then granted California the authority to implement GHG emission reduction standards for new passenger cars, pickup trucks, and sport utility vehicles on June 30, 2009. On April 1, 2010, CARB filed amended regulations for passenger vehicles as part of California’s commitment toward the national program to reduce new passenger vehicle GHGs from 2012 through 2016. In 2012, CARB approved the Low-Emission Vehicle (LEV) III regulations which include increasingly stringent emission standards for both criteria pollutants and greenhouse gases for new passenger vehicles of manufacture years 2017 through 2025.<sup>52</sup>

**Low Carbon Fuel Standard (LCFS):** In the 2008 Scoping Plan, CARB identified the LCFS as one of the nine discrete early action GHG reduction measures. The LCFS is designed to decrease the carbon intensity of California’s transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits. CARB approved the LCFS regulation in 2009 and began implementation on January 1, 2011 and has been amended several times since adoption. In 2018, CARB approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California’s 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector. The LCFS is designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. The LCFS standards are expressed in terms of the ‘carbon intensity’ of gasoline and diesel fuel and their respective substitutes. The program is based on the principle that each fuel has ‘lifecycle’ greenhouse gas emissions that include CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and other GHG contributors. This lifecycle assessment examines the GHG emissions associated with the production, transportation, and use of a given fuel. The lifecycle assessment includes direct emissions associated with producing, transporting, and using the fuels, as well as significant indirect effects on GHG emissions, such as changes in land use for some biofuels. The carbon intensity scores assessed for each fuel are compared to a declining carbon intensity benchmark for each year. Low carbon fuels below the benchmark generate credits, while fuels above the carbon intensity benchmark generate deficits. Providers of transportation fuels must demonstrate that the mix of fuels they supply for use in California meets the LCFS carbon intensity standards, or benchmarks, for each annual compliance period. A deficit generator meets its compliance obligation by ensuring that the quantity of credits it earns or otherwise acquires from another party is equal to, or greater than, the deficits it has incurred.

<sup>52</sup> CARB, Low-Emission Vehicle Greenhouse Gas Program, <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/lev-program/low-emission-vehicle-greenhouse-gas>, accessed on June 10, 2022.

**EO S-1-07:** Governor Schwarzenegger signed Executive Order S-1-07 in 2007 which established the transportation sector as the main source of GHG emissions in California. Executive Order S-1-07 proclaims that the transportation sector accounts for over 40 percent of statewide GHG emissions. Executive Order S-1-07 also establishes a goal to reduce the carbon intensity of transportation fuels sold in California by a minimum of 10 percent by 2020. Executive Order S-1-07 established the LCFS and directed the Secretary for Environmental Protection to coordinate the actions of the CEC, CARB, the University of California, and other agencies to develop and propose protocols for measuring the 'life-cycle carbon intensity' of transportation fuels. The analysis supporting development of the protocols was included in the State Alternative Fuels Plan adopted by CEC on December 24, 2007 and was submitted to CARB for consideration as an 'early action' item under AB 32. CARB adopted the LCFS on April 23, 2009.

**EO B-16-2012:** Executive Order B-16-2012 establishes long-term targets of reaching 1.5 million zero emission vehicles on California's roadways by 2025 and sets zero emission vehicle purchasing requirements for state government fleets. Executive Order B-16-2012 also sets a target for 2050 to achieve a reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels. In February 2013, an interagency working group developed the "Zero-Emission Vehicle Action Plan," which identified specific strategies and actions that state agencies needed to take to meet the milestones of this Executive Order. The Zero-Emission Vehicle Action Plan states: *"Zero-Emission Vehicles are crucial to achieving the state's 2050 greenhouse gas goal of 80 percent emission reductions below 1990 levels, as well as meeting federal air quality standards. Achieving 1.5 million Zero-Emission Vehicles by 2025 is essential to advance the market and put the state on a path to meet these requirements."*

**EO N-79-20:** On September 23, 2020, Governor Newsom signed Executive Order N-79-20 which included the following goals to have: 1) 100 percent of in-state sales of new passenger cars and trucks transition to zero emission vehicles by 2035; 2) 100 percent of drayage trucks transition to zero emission vehicles by 2035; 3) 100 percent of medium- and heavy-duty vehicles transition to zero emission vehicles by 2045 for all operations in California, where feasible; and 4) 100 percent of off-road vehicles and equipment to transition to zero emission vehicles and equipment by 2035, where feasible.

**SB 44:** The California Legislature passed SB 44, acknowledging the ongoing need to evaluate opportunities for mobile source emissions reductions and requires CARB to update the 2016 Mobile Source Strategy by January 1, 2021, and every five years thereafter. Specifically, SB 44 requires CARB to update the 2016 Mobile Source Strategy to include a comprehensive strategy for the deployment of medium- and heavy-duty vehicles for meeting air quality standards and reducing GHG emissions. It also directs CARB to set reasonable and achievable goals for reducing emissions by 2030 and 2050 from medium- and heavy-duty vehicles that are consistent with the California's overall goals and maximizes the reduction of criteria air pollutants.

**SB 375:** SB 375, signed into law in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. As part of the alignment, SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS) which prescribes land use allocation in that MPO's Regional Transportation Plan (RTP). CARB, in consultation with MPOs, is required to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions

technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned GHG emission reduction targets. If MPOs do not meet the GHG reduction targets, transportation projects located in the MPO boundaries would not be eligible for funding programmed after January 1, 2012.

CARB appointed the Regional Targets Advisory Committee (RTAC), as required under SB 375, on January 23, 2009. The RTAC's charge was to advise CARB on the factors to be considered and methodologies to be used for establishing regional targets. The RTAC provided its recommendation to CARB on September 29, 2009. CARB was required to adopt final targets by September 30, 2010.<sup>53</sup>

CARB is required to update the targets for the MPOs every eight years. CARB adopted revised SB 375 targets for the MPOs in March 2018.<sup>54,55</sup> The updated targets became effective on October 1, 2018. The targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update (for SB 32), while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005; this excludes reductions anticipated from implementation of state technology and fuels strategies, and any potential future state strategies, such as statewide road user pricing. The targets also call for greater per-capita GHG emission reductions from SB 375 than what were previously in place, which for 2035 translate into targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCS to achieve the SB 375 targets. For the next round of SCS updates, CARB's updated targets for the SCAG region are an eight percent per capita GHG reduction in 2020 from 2005 levels (unchanged from the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 13 percent).<sup>56</sup> CARB adopted the updated targets and methodology on March 22, 2018. All SCSs adopted after October 1, 2018, are subject to these revised targets.

**SCAG's Regional Transportation Plan / Sustainable Communities Strategy:** SB 375 requires each MPO to prepare a sustainable communities strategy in its regional transportation plan. SCAG released the draft 2020-2045 RTP/SCS (Connect SoCal) on November 7, 2019. On September 3, 2020, SCAG's Regional Council unanimously voted to approve and fully adopt the Connect SoCal Plan.<sup>57</sup> In general, the SCS outlines a development pattern for the region that, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

Connect SoCal focuses on the continued efforts of the previous RTP/SCSs to integrate transportation and land uses strategies in development of the SCAG region through horizon year 2045. Connect SoCal forecasts that the SCAG region will meet its GHG per capita reduction

---

<sup>53</sup> California Air Resources Board 2010, August. Staff Report Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375.

<sup>54</sup> California Air Resources Board, 2018, SB 375 Regional Greenhouse Gas Emissions Reduction Targets [https://ww2.arb.ca.gov/sites/default/files/2020-06/SB375\\_Final\\_Targets\\_2018.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-06/SB375_Final_Targets_2018.pdf), accessed on June 10, 2022.

<sup>55</sup> California Air Resources Board, 2018, Updated Final Staff Report: Proposed Update to the SB 375 Greenhouse Gas Emissions Reduction Targets, [https://ww2.arb.ca.gov/sites/default/files/2020-06/SB375\\_Updated\\_Final\\_Target\\_Staff\\_Report\\_2018.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-06/SB375_Updated_Final_Target_Staff_Report_2018.pdf), accessed on June 10, 2022.

<sup>56</sup> California Air Resources Board, 2018, February. Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. [https://www.arb.ca.gov/cc/sb375/sb375\\_target\\_update\\_final\\_staff\\_report\\_feb2018.pdf](https://www.arb.ca.gov/cc/sb375/sb375_target_update_final_staff_report_feb2018.pdf), accessed on June 10, 2022.

<sup>57</sup> Southern California Association of Governments (SCAG). 2020, September. Adopted Final Connect SoCal. <https://scag.ca.gov/read-plan-adopted-final-plan>, accessed on June 10, 2022.

targets of eight percent by 2020 and 19 percent by 2035. Additionally, Connect SoCal also forecasts that implementation of the plan will reduce VMT per capita in year 2045 by 4.1 percent compared to baseline conditions for that year. Connect SoCal includes a 'Core Vision' that centers on maintaining and better managing the transportation network for moving people and goods while expanding mobility choices by locating housing, jobs, and transit closer together, and increasing investments in transit and complete streets.

### **Adaptation**

**EO S-13-08:** Governor Schwarzenegger signed Executive Order S-13-08 on November 14, 2008 which directed California to develop methods for adapting to climate change through preparation of a statewide plan. Executive Order S-13-08 directed OPR, in cooperation with the Resources Agency, to provide land use planning guidance related to sea level rise and other climate change impacts by May 30, 2009. Executive Order S-13-08 also directed the Resources Agency to develop a state Climate Adaptation Strategy by June 30, 2009 and to convene an independent panel to complete the first California Sea Level Rise Assessment Report. The assessment report was required to be completed by December 1, 2010 and required to meet the following four criteria:

1. Project the relative sea level rise specific to California by considering issues such as coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge, and land subsidence rates;
2. Identify the range of uncertainty in selected sea level rise projections;
3. Synthesize existing information on projected sea level rise impacts to state infrastructure (e.g., roads, public facilities, beaches), natural areas, and coastal and marine ecosystems; and
4. Discuss future research needs relating to sea level rise in California.

### **Energy**

**SB 1078, SB 107 and EO S-14-08:** SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date from 2017 to 2010. In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Portfolio Standard from 20 percent by 2010 to 33 percent renewable power by 2020.

**SB X-1-2:** SB X1-2 was signed by Governor Brown in April 2011. SB X1-2 created a new Renewables Portfolio Standard (RPS), which pre-empted CARB's 33 percent Renewable Electricity Standard. The new RPS applies to all electricity retailers in the state including publicly owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators. These entities must adopt the new RPS goals of 20 percent of retail sales from renewables by the end of 2013, 25 percent by the end of 2016, and the 33 percent requirement by the end of 2020.

**SB 1368:** SB 1368 is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 required the CPUC to establish a GHG emission performance standard for baseload generation from investor-owned utilities (IOUs) by February 1, 2007. The California Energy Commission (CEC) was also required to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the greenhouse gas

emission rate from a baseload combined-cycle natural gas fired power plant. The legislation further required that all electricity provided to California, including imported electricity, must be generated from power plants that meet the standards set by the Public Utilities Commission (PUC) and CEC.

**SB 350:** Senate Bill 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS with 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

**SB 100:** On September 10, 2018, Governor Brown signed SB 100. Under SB 100, the RPS for public-owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. Additionally, SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill establishes an overall state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

**EO B-55-18:** Executive Order B-55-18, signed September 10, 2018, sets a goal “to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter.” Executive Order B-55-18 directed CARB to work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO<sub>2</sub>eq from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

**AB 2127:** This bill requires the California Energy Commission (CEC), working with CARB and the California Public Utilities Commission (CPUC), to prepare and biennially update a statewide assessment of the electric vehicle charging infrastructure needed to support the levels of electric vehicle adoption required for the state to meet its goals of putting at least five million zero emission vehicles on California roads by 2030 and of reducing emissions of greenhouse gases to 40 percent below 1990 levels by 2030. The bill requires the CEC to regularly seek data and input from stakeholders relating to electric vehicle charging infrastructure.<sup>58</sup>

**California Building Code – Building Energy Efficiency Standards:** Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The CEC updates building energy efficiency standards in Title 24 (Parts 6 and 11) every three years to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and went into effect on January 1, 2020. The 2019 standards move toward cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multifamily

<sup>58</sup> California Legislative Information, September 14, 2018, AB-2127 Electric Vehicle Charging Infrastructure: Assessment, [https://leginfo.ca.gov/faces/billTextClient.xhtml?bill\\_id=20170180AB2127](https://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=20170180AB2127), accessed on June 10, 2022.

buildings of three stories and less. The 2019 standards focus on four key areas: 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements.<sup>59</sup>

In addition, the CEC adopted the 2022 Building Energy Efficiency Standards adopted on August 11, 2021 but they do not go into effect until January 1, 2023. The 2022 Energy Code encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more. Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code.

**California Building Code – CALGreen:** On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR Part 11, known as 'CALGreen') was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.<sup>60</sup> The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011 and were last updated in 2019. The 2019 CALGreen standards became effective January 1, 2020. Section 5.408 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

### **Short-Lived Climate Pollutants**

**SB 1383:** On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and methane. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 required CARB, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030, as specified. On March 14, 2017, CARB adopted the "Final Proposed Short-Lived Climate Pollutant Reduction Strategy," which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s despite the tripling of diesel fuel use. In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

### **Ozone Depleting Substances (ODSs)**

**Refrigerant Management Program:** As part of implementing AB 32, CARB also adopted a Refrigerant Management Program in 2009. The Refrigerant Management Program is designed to

---

<sup>59</sup> California Energy Commission (CEC). 2018. News Release: Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. <https://www.energy.ca.gov/news/2018-05/energy-commission-adopts-standards-requiring-solar-systems-new-homes-first>, accessed on June 10, 2022.

<sup>60</sup> The green building standards became mandatory in the 2010 edition of the code.

reduce GHG emissions from stationary sources through refrigerant leak detection and monitoring, leak repair, system retirement and retrofitting, reporting and recordkeeping, and proper refrigerant cylinder use, sale, and disposal.

**HFC Emission Reduction Measures for Mobile Air Conditioning – Regulation for Small Containers of Automotive Refrigerant:** The Regulation for Small Containers of Automotive Refrigerant applies to the sale, use, and disposal of small containers of automotive refrigerant with a GWP greater than 150. Emission reductions are achieved through implementation of four requirements: 1) use of a self-sealing valve on the container; 2) improved labeling instructions; 3) a deposit and recycling program for small containers; and 4) an education program that emphasizes best practices for vehicle recharging. This regulation went into effect on January 1, 2010 with a one-year sell-through period for containers manufactured before January 1, 2010. The target recycle rate is initially set at 90 percent and rose to 95 percent beginning January 1, 2012.

### 3.2.2.2.3 South Coast AQMD

The South Coast AQMD adopted a "Policy on Global Warming and Stratospheric Ozone Depletion" on April 6, 1990. The policy commits the South Coast AQMD to consider global impacts in rulemaking and in drafting revisions to the AQMP. In March 1992, the South Coast AQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include support of the adoption of a California GHG emission reduction goal.

**Basin GHG Policy and Inventory:** The South Coast AQMD has established a policy, adopted by the South Coast AQMD Governing Board at its September 5, 2008 meeting, to actively seek opportunities to reduce emissions of criteria, toxic, and climate change pollutants. The policy includes the intent to assist businesses and local governments implementing climate change measures, decrease the agency's carbon footprint, and provide climate change information to the public.

#### 3.2.2.2.3.1 Ozone Depleting Substances (ODSs)

**Policy on Global Warming and Stratospheric Ozone Depletion:** The South Coast AQMD adopted a "Policy on Global Warming and Stratospheric Ozone Depletion" on April 6, 1990. The policy targeted a transition away from CFCs as an industrial refrigerant and propellant in aerosol cans. In March 1992, the South Coast AQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include the following directives for ODSs:

- Phase out the use and corresponding emissions of CFCs, methyl chloroform (1,1,1-trichloroethane or TCA), carbon tetrachloride, and halons by December 1995.
- Phase out the large quantity use and corresponding emissions of HCFCs by the year 2000.
- Develop recycling regulations for HCFCs.
- Develop an emissions inventory and control strategy for methyl bromide.



## **CHAPTER 4**

---

### **ENVIRONMENTAL IMPACTS**

**Introduction and Background**

**Potential Significant Air Quality and Greenhouse Gas Impacts and Mitigation Measures**

**Significant Environmental Effects Which Cannot be Avoided**

**Potential Environmental Impacts Found Not to be Significant**

**Potential Growth-Inducing Impacts**

**Relationship Between Short-Term and Long-Term Environmental Goals**

## 4.0 INTRODUCTION AND BACKGROUND

The CEQA Guidelines require environmental documents to identify significant environmental effects that may result from a proposed project. [CEQA Guidelines Section 15126.2(a)]. Direct and indirect significant effects of a project on the environment should be identified and described, with consideration given to both short- and long-term impacts. The discussion of environmental impacts may include, but is not limited to, the following: resources involved; physical changes; alterations of ecological systems; health and safety problems caused by physical changes; and other aspects of the resource base, including water, scenic quality, and public services. If significant adverse environmental impacts are identified, the CEQA Guidelines require a discussion of measures that could either avoid or substantially reduce any adverse environmental impacts to the greatest extent feasible. [CEQA Guidelines Section 15126.4].

The categories of environmental impacts to be studied in a CEQA document are established by CEQA (Public Resources Code Section 21000 et seq.), and the CEQA Guidelines, as codified in Title 14 California Code of Regulations Section 15000 et seq. Under the CEQA Guidelines, there are approximately 18 environmental categories in which potential adverse impacts from a project are evaluated. The South Coast AQMD, as lead agency, has taken into consideration the Appendix G environmental checklist form, but has tailored the 21 environmental topic areas to emphasize air quality assessment primarily by combining the “air quality” and “greenhouse gas emissions” areas into one section, combining the “cultural resources” and “tribal cultural resources” areas into one section, separating the “hazards and hazardous materials” factor into two sections: “hazards and hazardous materials” and “solid and hazardous waste,” and folding the “utilities/service systems” area into other environmental areas such as “energy,” “hydrology and water quality” and “solid and hazardous waste.” For each environmental topic area, per CEQA Guidelines Section 15064.7(a), “a threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant.” The South Coast AQMD has developed unique thresholds of significance for the determination of significance in accordance with CEQA Guidelines Section 15064.7(b).

### Proposed Project and Focus of Environmental Effects and Analysis

As explained in Chapter 2, PAR 1168 has been developed to delay the effective dates of or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 6, 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; ~~and prohibit the use of t-BAC and pCBtF due to toxicity concerns; and allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation.~~ All of these key components of PAR 1168 may involve physical modifications which could cause adverse air quality impacts. However, other changes are proposed for PAR 1168 which are administrative in nature, such as the proposal to remove definitions, and update, and clarify, and streamline rule language associated with recordkeeping and reporting requirements. As such, these administrative components of PAR 1168 are not expected to require physical modifications that would create any secondary adverse environmental impacts for air quality or any other environmental topic area. Thus, the analysis in this SEA focuses on only the portion of PAR 1168

that would be expected to require physical modifications and the corresponding environmental effects.

The October 2017 Final EA previously analyzed the environmental impacts associated with establishing more stringent VOC limits for several product categories with an effective date of January 1, 2023. Therefore, affected categories of Regulated Products, and the nature of the physical impacts that may occur as a result of implementing PAR 1168 are expected to be the same or similar and will cause similar secondary adverse environmental impacts for the same environmental topic areas that were identified and analyzed in the October 2017 Final EA for Rule 1168. The key difference between the October 2017 version of Rule 1168 and PAR 1168 is that PAR 1168 will be relaxing some of the VOC limits and extending the corresponding effective date due to the lack of available technology on the market.

The purpose of the October 2017 amendments to Rule 1168, the project upon which the currently proposed project, PAR 1168, is based, was to reduce emissions of VOCs by 1.38 tpd, as well as reduce toxic air contaminants, and stratospheric ozone-depleting compounds from adhesives, adhesive primers, sealants, and sealant primers. The October 2017 Final EA for Rule 1168 analyzed the environmental impacts associated with the activities manufacturers were anticipated to undertake to reformulate products and that these reformulation activities could create secondary adverse environmental impacts. None of the environmental topic areas previously analyzed in the October 2017 Final EA for Rule 1168 were concluded to have significant and unavoidable impacts, including the topic of air quality and greenhouse gases (GHGs).

However, while PAR 1168 is expected to have generally the same or similar effects that were previously examined in the October 2017 Final EA for Rule 1168, PAR 1168 will cause-result in some delayed and permanent VOC emission reductions foregone, which were not previously contemplated that will make the previously analyzed air quality impacts more severe than what was discussed in October 2017 Final EA for Rule 1168. Thus, PAR 1168 contains new information of substantial importance relative to the topic of air quality which was not known and could not have been known at the time the October 2017 Final EA for Rule 1168 was certified. [CEQA Guidelines Section 15162(a)(3)].

The purpose of this SEA, and this chapter in particular, is to compare the types of activities and associated environmental impacts with implementing the VOC limits and effective dates subject to the Rule 1168 amendments that were previously analyzed in the October 2017 Final EA for Rule 1168 to the currently proposed changes which comprise PAR 1168. The CEQA Guidelines indicate that the degree of specificity required in a CEQA document depends on the type of project being proposed. [CEQA Guidelines Section 15146]. However, the detail of the environmental analysis for certain types of projects cannot be as great as for others. For this SEA, the baseline is the project analyzed in the October 2017 Final EA for Rule 1168 and the SEA tiers off of that previously conducted analysis. Lastly, because PAR 1168 proposes to amend an existing rule, this SEA is required to contain the environmental analysis required by CEQA Guidelines Section 15187 which specifically pertains to the environmental review of rules and regulations.

Because PAR 1168 contains changes that would only adversely impact the topic of air quality, this SEA analyzes the potentially significant impacts specific to air quality. The analysis of the

potentially significant air quality impacts in this chapter incorporates a “worst-case” approach. This approach entails the premise that whenever the analysis requires that assumptions be made, those assumptions that result in the greatest adverse impacts are typically chosen. This method ensures that all potential effects of PAR 1168 are documented for the decision-makers and the public.

In addition, this chapter independently considers whether the proposed project would result in new significant impacts for any of the other environmental topic areas previously concluded in the October 2017 Final EA for Rule 1168 to have either no significant impacts or less than significant impacts; however, none were identified. See Section 4.3 of this chapter for a description and the basis for this conclusion.

#### **4.1 POTENTIAL SIGNIFICANT AIR QUALITY AND GREENHOUSE GAS IMPACTS AND MITIGATION MEASURES**

This chapter independently considers the currently proposed project (PAR 1168) and analyzes the incremental changes, if any, relative to the baseline established in the October 2017 Final EA for Rule 1168. The October 2017 Final EA for Rule 1168 previously analyzed environmental impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA analyzed the environmental topic of air quality and GHGs and concluded that less than significant adverse impacts to air quality and GHG emissions would occur.

Thus, this section evaluates the potential air quality and GHG emission impacts for PAR 1168 and compares the previous air quality and GHG emission impacts analysis conducted in the October 2017 Final EA for Rule 1168.

##### **4.1.1 Significance Criteria**

To determine whether air quality and GHG impacts from adopting and implementing the proposed project are significant, impacts will be evaluated and compared to the significance criteria on the following page. The significance thresholds for criteria pollutant emissions: the mass daily thresholds, were developed in 1993, and a full discussion can be found in the South Coast AQMD CEQA Handbook. Significance thresholds for toxic air contaminants and odor are based on requirements under Rules 1401 and 212, and 402 respectively. In December 2008, the Governing Board approved an interim GHG significance threshold for projects where the South Coast AQMD is the lead agency. There has been ongoing development of the significance thresholds, and detailed discussion is available on the South Coast AQMD website.<sup>89</sup> A discussion regarding feasible mitigation measures is also included in this section. Significance determinations for construction impacts are based on the maximum or peak daily emissions during the construction period, which provides a “worst-case” analysis of the construction emissions. Similarly, significance determinations for operational emissions are based on the maximum or peak daily emissions during the operational phase.

The proposed project will have significant adverse air quality impacts if any one of the thresholds in Table 4-1 are equaled or exceeded.

---

<sup>89</sup> South Coast AQMD, 1993. <http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook>.

**Table 4-1**  
**South Coast AQMD Air Quality Significance Thresholds**

Mass Daily Thresholds <sup>a</sup>		
Pollutant	Construction <sup>b</sup>	Operation <sup>c</sup>
NO <sub>x</sub>	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM <sub>10</sub>	150 lbs/day	150 lbs/day
PM <sub>2.5</sub>	55 lbs/day	55 lbs/day
SO <sub>x</sub>	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs), Odor, and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to South Coast AQMD Rule 402	
GHG	10,000 MT/yr CO <sub>2</sub> eq for industrial facilities	
Ambient Air Quality Standards for Criteria Pollutants <sup>d</sup>		
NO <sub>2</sub>  1-hour average annual arithmetic mean	South Coast AQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM <sub>10</sub>  24-hour average annual average	10.4 µg/m <sup>3</sup> (construction) <sup>e</sup> & 2.5 µg/m <sup>3</sup> (operation) 1.0 µg/m <sup>3</sup>	
PM <sub>2.5</sub>  24-hour average	10.4 µg/m <sup>3</sup> (construction) <sup>e</sup> & 2.5 µg/m <sup>3</sup> (operation)	
SO <sub>2</sub>  1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99 <sup>th</sup> percentile) 0.04 ppm (state)	
Sulfate  24-hour average	25 µg/m <sup>3</sup> (state)	
CO  1-hour average 8-hour average	South Coast AQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead  30-day Average Rolling 3-month average	1.5 µg/m <sup>3</sup> (state) 0.15 µg/m <sup>3</sup> (federal)	

<sup>a</sup> Source: South Coast AQMD CEQA Handbook (South Coast AQMD, 1993)

<sup>b</sup> Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).

<sup>c</sup> For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.

<sup>d</sup> Ambient air quality thresholds for criteria pollutants based on South Coast AQMD Rule 1303, Table A-2 unless otherwise stated.

<sup>e</sup> Ambient air quality threshold based on South Coast AQMD Rule 403.

KEY: lbs/day = pounds per day    ppm = parts per million     $\mu\text{g}/\text{m}^3$  = microgram per cubic meter     $\geq$  = greater than or equal to  
 MT/yr CO<sub>2</sub>eq = metric tons per year of CO<sub>2</sub> equivalents     $>$  = greater than

Revision: April 2019

### ***Project-Specific Air Quality Impacts During Construction***

PAR 1168 proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and 45) remove definitions, and update and, clarify, and streamline rule language. However, PAR 1168 does not require construction of new buildings, or relocation of existing manufacturing facilities or equipment. Instead, for certain categories of adhesives and sealants that currently contain pCBtF and/or t-BAc, PAR 1168 will prohibit products containing these compounds from being manufactured, supplied, sold and used within South Coast AQMD's jurisdiction. Thus, replacement products will need to be formulated with other compounds in order to comply with the applicable VOC limit by the prescribed effective date. The manufacture of products reformulated to comply with the VOC limits in PAR 1168 is expected to use the same or similar equipment currently utilized to manufacture products formulated to comply with the VOC limits contained in the October 2017 version of Rule 1168. Therefore, compliance with PAR 1168 is not expected to require physical changes or modifications that would involve construction activities. As a result, no construction air quality impacts are expected from PAR 1168. **Based upon these considerations, no significant adverse air quality impacts relating to construction are expected from implementing the proposed project.**

### ***Project-Specific Air Quality Impacts During Operation***

#### ***~~Criteria~~ Air Pollutants***

The purpose of Rule 1168 is to minimize VOC emissions, a precursor to the criteria air pollutant ozone, from area sources, specifically adhesives and sealants, by establishing VOC limits and effective dates for the various product categories. PAR 1168 has been developed to delay the effective dates of and/or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 6, 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; ~~and~~ prohibit the use of t-BAc and pCBtF due to toxicity concerns; allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation; and update, clarify, and streamline rule language.

Table 4-2 presents a summary of all the proposed changes in PAR 1168 to the various categories and subcategories of adhesives and sealants which include revised VOC content limits, and revised effective dates. Table 4-2 also presents the corresponding delayed and permanent foregone VOC emission reductions due to the implementation of these proposed changes relative to the October 2017 version of Rule 1168. It should be noted that the delayed VOC emission reductions and permanent VOC emission reductions foregone are estimated using the scaled sales volume data collected from the Quantity and Emission Report (QER) 2017 and 2018, the proposed VOC limits, and the current VOC limits from the October 2017 version of Rule 1168 for different categories of Regulated Products. The manufacturer and private labelers submitted the first QERs for the 2017 and 2018 period on September 1, 2019.

Table 4-2

## Proposed Changes to PAR 1168 and Estimated Delayed and Foregone VOC Emission Reductions

Adhesive and Sealant Category	VOC Limit (g/L) Prior to 2017	VOC Limit (g/L) Amended in 2017	VOC emission reductions (tpd) after 2017	Proposed Subcategory in PAR 1168	PAR 1168 VOC Limit	Proposed Effective Date	Delayed VOC Emission Reductions Foregone (tpd)	Permanent VOC Emission Reductions Foregone (tpd)
Top and Trim Adhesive	540	250	0.2	N/A	250 g/L	1/1/2028	0.1 for 60 months	--
Foam Sealant	250	50	0.23	One-Component	18% VOC by weight	7/1/2023	0.01 for 6 months	0.12
				High-Pressure Two-Component	5% VOC by weight	1/1/2023	--	--
				Low-Pressure Two-Component	5% VOC by weight	1/1/2023	--	--
PVC Welding Cement	510	425	0.18	N/A	425 g/L	1/1/2023	--	--
CPVC Welding Cement	490	400	0.01	CPVC Welding Cement	400 g/L	1/1/2023	--	--
				CPVC Welding Cement for Life Safety Systems	490 g/L	N/A	--	0.01
				Higher Viscosity CPVC Welding Cement	400 g/L	7/1/2024	0.01 for 18 months	--
All Other Roof Adhesives	250	200	0.04	All Other Roof Adhesives	250 g/L	Upon Adoption	--	0.03
				Shingle Laminating Adhesive	30 g/L	1/1/2023	--	--
				Hot Applied Modified Bitumen/Built Up Roof Adhesive	30 g/L	1/1/2023	--	--
Single Ply Roof Membrane Adhesive	250	200	0.05	EPDM/TPO Single Ply Roof Membrane Adhesive	250 g/L	Upon Adoption	--	0.07
				N/A				
				Single Ply Roof Membrane Adhesive (Except EPDM/TPO)				
All Other Roof Sealants	300	250	0.14	N/A	300 g/L	Upon Adoption	--	0.05
<u>Clear, Paintable, Immediately Water-Resistant Sealant</u>	<u>380</u>	<u>250</u>	<u>0.02</u>	<u>N/A</u>	<u>250 g/L</u>	<u>1/1/2026</u>	<u>0.007</u>	<u>--</u>

**Table 4-2 (concluded)**  
**Proposed Changes to PAR 1168 and Estimated Delayed and Foregone VOC Emission Reductions**

Adhesive and Sealant Category	VOC Limit (g/L) Prior to 2017	VOC Limit (g/L) Amended in 2017	VOC emission reductions (tpd) after 2017	Proposed Subcategory in PAR 1168	PAR 1168 VOC Limit	Proposed Effective Date	Delayed VOC Emission Reductions Foregone (tpd)	Permanent VOC Emission Reductions Foregone (tpd)
<u>Rubber Vulcanization Adhesive</u>	<u>850</u>	<u>250</u>	<u>0.06</u>	<u>N/A</u>	<u>250 g/L</u>	<u>1/1/2028</u>	<u>0.29</u>	--
Single Ply Roof Membrane Sealant	450	250	0.003	<u>Cut Edge Single Ply Roof Membrane Sealant</u> <del>N/A</del>	250 g/L	1/1/2023	--	--
				<u>Single Ply Roof Membrane Sealant (Except Cut Edge)</u>				
						TOTAL	<del>0.12</del> 0.42	0.28



**Conclusion —Criteria-Air Pollutants:** As shown in Table 4-2, both the delayed ~~0.42~~ 0.12-tpd (equivalent to ~~240-840~~ pounds per day) of VOC emission reductions from extending the final effective dates of the VOC limits and the permanent VOC emission reductions foregone of 0.28 tpd (equivalent to 560 pounds per day) from reverting to the higher VOC limit in place prior to the October 2017 amendments to Rule 1168 for certain categories of Regulated Products would exceed the South Coast AQMD's daily VOC operational significance threshold of 55 pounds per day. **Thus, the peak daily VOC operational impacts associated with both the delayed and permanent foregone VOC emission reductions from implementing PAR 1168 are significant. PAR 1168 is expected to generate significant adverse air quality impacts during operation.**

It is important to note that because the focus of PAR 1168 is the VOC content of adhesive and sealants, emissions of other criteria pollutants that are typically associated with combustion activities (e.g., NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>) are not affected by PAR 1168. **Thus, PAR 1168 will have no significant air quality impacts associated with NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions.**

**Project-Specific Mitigation:** If significant adverse environmental impacts are identified, the CEQA document shall describe feasible measures that could minimize the significant adverse impacts of the proposed project. [CEQA Guidelines Section 15126.4]. Therefore, feasible mitigation measures for reducing VOC impacts are required. However, the reason PAR 1168 is proposing to revise the VOC content limits and/or effective dates for certain categories of adhesives and sealants is because there are currently no other products available that can feasibly attain the current VOC limits by the effective dates adopted in the October 2017 version of Rule 1168. **Based upon these technological limitations, there are no feasible mitigation measures that would eliminate or reduce the significant adverse operational air quality impacts for VOC emissions to less than significant levels.**

**Since no significant operational air quality impacts relating to NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions were identified, no mitigation measures are necessary or required for these pollutants.**

**Remaining Criteria-Air Pollutant Impacts:** While operational air quality impacts for VOC emissions are expected significant, no feasible mitigation measures have been identified that would eliminate or reduce the significant adverse operational air quality impacts for VOC emissions to less than significant levels. **Therefore, operational air quality impacts for VOC emissions are significant and unavoidable.**

### *Toxic Air Contaminants*

The purpose of Rule 1168 is to minimize VOC emissions, a precursor to the criteria air pollutant ozone, from area sources, specifically adhesives and sealants, by establishing VOC limits and effective dates for the various product categories. PAR 1168 has been developed to delay the effective dates of and/or increase VOC limits for certain categories of adhesives, sealants, adhesive primers and sealant primers where the technology assessment demonstrated the effective dates or VOC limits in the October 2017 version of Rule 1168 are not feasible; create new subcategories of Regulated Products to better characterize and refine VOC emission limits; ~~and prohibit the use of t-BAC and pCBtF due to toxicity concerns; and allow Opteon 1100 as a VOC exempt compound~~

for Two-Component Foam Sealants used in an industrial or professional setting contingent upon an OEHHA evaluation.

Relative to toxic air contaminants, some manufacturers of adhesives and sealants currently use compounds in their product formulations that are VOCs but that also may be considered a toxic air contaminant (e.g., benzene, toluene, ethylbenzene and xylene). For any formulations that contain any toxic compounds that are also classified as a VOC, the VOC limits in Rule 1168 serve to limit the overall toxicity of product formulations. However, other toxics, such as t-BAC and pCBtF, which are currently exempt from the definition of what qualifies as a VOC as set forth in Rule 102, if relied upon to reformulate products capable of meeting particular VOC limits could result in a formulation with a low VOC content but a high toxicity. This is especially true if t-BAC or pCBtF are relied upon as a non-VOC substitute because these compounds are both carcinogenic with very high cancer potency factors. The cancer potency factors for t-BAC and pCBtF are 0.0047 and 0.03 (mg/kg-day)<sup>-1</sup>, respectively which are higher or within the same order of the cancer potency factor for some Group II compounds such as dimethyl carbonate (0.0035) and perchloroethylene (0.021). It should be noted that Group II compounds are those that are already restricted or will be restricted in the future because they are either toxic, potentially toxic, upper atmospheric ozone depleters, or cause other environmental impacts. Therefore, these results confirm the carcinogenic effects of t-BAC and pCBtF.

While the purpose of Rule 1168 is to minimize VOC emissions from adhesive and sealant products, because of toxicity concerns associated with t-BAC and pCBtF, PAR 1168 proposes to prohibit the use of t-BAC and pCBtF so as to also minimize consumer exposure to air toxics during the application of adhesives and sealants.

In February 2022, staff surveyed adhesive and sealant manufacturers and suppliers regarding product formulations made with pCBtF and t-BAC so as to assess the extent of pCBtF and t-BAC currently used in these products. The results of the survey indicated that pCBtF was primarily used in roofing products but that pCBtF-formulated products did not dominate the market. In addition, staff conducted an online search of Safety Data Sheets (SDSs) for all non-asphalt roofing sealant and adhesives to get another perspective as to whether pCBtF and t-BAC is commonly used in roofing products. Table 4-3 presents a comparison of the total number of roofing products commercially available and the portion of which have been formulated with pCBtF according to the survey and online search of SDSs. It should be noted that both survey and online search of SDSs indicated negligible use of t-BAC in adhesives and sealants and therefore, data relative to t-BAC is not included in Table 4-3.

**Table 4-3**  
**Summary of Survey and online SDSs Search Results for Roofing Products Formulated with pCBtF**

Category of Roofing Products	Number of Products Reported in Survey	Number of Products Formulated With pCBtF from Survey (Percentage)	Number of Products Formulated With pCBtF from Online Search of SDSs (percentage)
Single Ply Roof Membrane Adhesive	64	6 (9.4)	11 (17)
Single Ply Roof Membrane Sealants	37	1 (2.7)	1 (2.7)
All Other Roof Sealants	58	2 (3.4)	2 (3.4)
All Other Roof Adhesives	54	0 (0)	0 (0)
<b>TOTAL</b>	<b>213</b>	<b>9 (4.2 %)</b>	<b>14 (6.6 %)</b>

Overall, the analysis and the data in Table 4-3 confirms that widespread reformulation of roofing products will not be necessary if PAR 1168 is implemented because there is a wide variety of other products commercially available and currently in-use that do not contain pCBtF and t-BAC. Based on these considerations, implementation of PAR 1168 is expected to reduce overall toxic profile of roofing products when compared to the October 2017 version of Rule 1168. Moreover, the prohibition of pCBtF and t-BAC due to their toxicity concerns will result in an air quality benefit.

Lastly, PAR 1168 only allows Opteon 1100 as a VOC-exempt compound for High-Pressure Two-Component Foam Sealants and Low-Pressure Two-Component Foam Sealants when used in an industrial or professional setting by workers trained with procedures and guidelines to reduce potential risk of exposure, if OEHHHA has sufficient information to establish a Cancer Inhalation Unit Risk Factor, an acute reference exposure level (REL) and a chronic REL of Opteon 1100 and, upon completion of its assessment: 1) does not adopt a Cancer Inhalation Unit Risk Factor for Opteon 1100; 2) develops an acute reference exposure level (REL) or interim acute REL for Opteon 1100, which is higher than or equal to the acute REL or interim acute REL for trans-1-Chloro-3,3,3-Trifluoropropene (HFO-1233zd) as a currently used HFO in Two-Component Foam Sealants; and 3) develops a chronic REL or interim chronic REL for Opteon 1100, which is higher than or equal to the chronic REL or interim chronic REL for trans-1-Chloro-3,3,3-Trifluoropropene (HFO-1233zd). Therefore, potential future replacement of currently used HFOs in Two-Component Foam Sealants (e.g., HFO-1233zd) with Opteon 1100 is not expected to increase overall toxic profile of these products.

**Conclusion – Toxic Air Contaminants:** Due to prohibiting t-BAC and pCBtF, two toxic air contaminants with high cancer potency factors, the overall amount of toxic air contaminants used in adhesives and sealants (mainly roofing products) will be reduced. **Therefore, less than significant impacts from toxic air contaminants during operation are expected.**

**Project-Specific Mitigation:** Since no significant operational air quality impacts relating to emissions of toxic air contaminants were identified, **no mitigation measures are necessary or required.**

**Remaining Toxic Air Contaminant Impacts:** Operational air quality impacts for toxic air contaminants are expected to be less than significant such that no mitigation measures are necessary or required. **Therefore, operational air quality impacts for toxic air contaminants remain less than significant.**

### *Odor Impacts*

The CEQA significance threshold for odor is whether the project creates an odor nuisance pursuant to South Coast AQMD Rule 402. Odor problems depend on individual circumstances. For example, individuals can differ quite markedly from the populated average in their sensitivity to odor due to any variety of innate, chronic or acute physiological conditions. This includes olfactory adaptation or smell fatigue (i.e., continuing exposure to an odor usually results in a gradual diminution or even disappearance of the smell sensation).

As explained in the previous section which analyzed potential air quality impacts from toxic air contaminants, PAR 1168 is not expected to cause a widespread reformulation of adhesives and sealants due to prohibiting pCBtF and t-BAC because a substantial number of other products are commercially available and in-use that are not formulated with pCBtF and t-BAC. In addition, even if manufacturers elect to reformulate certain adhesive and sealant products, it is unknown what chemicals would be used in lieu of the current formulations available. As such it would be speculative to say whether there would be any new odor impacts from reformulated products, if any, relative to the existing odor profile of the current products on the market. Furthermore, reverting to the pre-2017 VOC limits for some categories of adhesives and sealants essentially means that manufacturers, suppliers and distributors would revert back to having products that were commercially available on the market at that time and continue to be available and in use elsewhere outside of South Coast AQMD's jurisdiction. Therefore, no change or less than significant changes in odor profiles of adhesives and sealants in response to PAR 1168 are expected such that PAR 1168 will not be expected to create objectionable odors affecting a substantial number of people. Local governments also typically have ordinances that are intended to protect the public from adverse odors. South Coast AQMD Rule 402 – Nuisance, also protects the public from adverse odor impacts. In manufacturing, ventilation systems connected to air pollution control equipment as well as employees being required to wear personal protective equipment are two common ways to protect on-site and off-site receptors from odors. However, compliance with PAR 1168 is not expected to require physical changes or modifications that would involve construction activities.

**Conclusion – Odors:** Since PAR 1168 is not expected to involve construction activities, no impacts to odors during construction will occur. **During operation, less than significant odor impacts are expected from PAR 1168.**

**Project-Specific Mitigation:** Since no significant odor impacts were identified for construction and less than significant odor impacts were identified for operation, **no mitigation measures are necessary or required.**

**Remaining Odor Impacts:** With no odor impacts identified during construction and less than significant odor impacts identified during operation such that no mitigation measures are necessary or required, **air quality impacts relative to odors remain less than significant.**

#### **4.1.2 Cumulative Air Quality Impacts**

Pursuant to CEQA Guidelines Section 15130(a), the SEA shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable. In general, the preceding analysis concluded that air quality impacts from operation activities would be significant from implementing the proposed project because the South Coast AQMD's significance thresholds for operation will be exceeded for VOC emissions. In addition, there are no feasible mitigation measures that would eliminate or reduce the significant adverse operational air quality impacts for VOC emissions to less than significant levels. Thus, the air quality impacts due to operations are cumulatively considerable pursuant to CEQA Guidelines Section 15064(h)(1) and therefore, generate significant adverse cumulative air quality impacts.

The analysis also indicates that the proposed project will not involve any construction activities and emissions. Moreover, there will be less than significant increases to health risk and odor impacts. Pursuant to CEQA Guidelines Section 15130(a)(2), when the combined cumulative impact associated with the project's incremental effect is not significant, the SEA must indicate why the cumulative impact is not significant. Because construction emissions, odor impacts, and health risks do not exceed the air quality significance thresholds, which also serve as the cumulative significance thresholds, they are not considered to be cumulatively considerable [CEQA Guidelines Section 15064 (h)(1)].

This identical standard is appropriate because the South Coast AQMD air quality significance thresholds for criteria pollutants were set by evaluating the effect an individual project may have on the ability of the South Coast Air Basin to attain the NAAQS established by the U.S. EPA, and are therefore, cumulative in nature. Specifically, the South Coast AQMD Governing Board adopted 1993 CEQA Air Quality Handbook, which identified that the thresholds for criteria pollutants are based on the emissions levels in the Clean Air Act for a major source in an area designated as extreme non-attainment for ozone. [1993 CEQA Handbook, Chapter 6]. So, for example, a major source of VOCs, a precursor for ozone, is defined as a source that has a potential to emit at least 10 tons per year of VOCs [Clean Air Act section 182(e)]. The South Coast AQMD converted the 10 tons per year in terms of pounds per day, which resulted in a significance threshold of 55 pounds per day for operational emissions. The 1993 CEQA Handbook also explains that this approach is appropriate because the regulatory framework to establish the state and federal ambient air quality standards, and the method to achieve attainment of those standards, are intended to be protective of public health.

**Conclusion – Cumulative Air Quality Impacts:** The operational air quality impacts relative to VOCs are cumulatively considerable because: 1) the peak daily VOC operational impacts associated with both the delayed and permanent foregone VOC emission reductions exceed the South Coast AQMD's significance threshold for VOC during operation; and 2) there are no feasible mitigation measures that would eliminate or reduce the significant adverse operational air quality impacts for VOC emissions to less than significant levels.

**Cumulative Mitigation:** No feasible mitigation measures are available that would eliminate or reduce the cumulatively considerable operational air quality impacts for VOC emissions to less than significant levels.

**Remaining Cumulative Air Quality Impacts:** While operational air quality impacts for VOC emissions are cumulatively significant, no feasible mitigation measures have been identified that would eliminate or reduce the significant adverse operational air quality impacts for VOC emissions to less than significant levels. **Therefore, the cumulative operational air quality impacts for VOC emissions remain significant and unavoidable.**

#### 4.1.3 Greenhouse Gas Impacts and Mitigation Measures

Significant changes in global climate patterns have recently been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to accumulation of GHG emissions in the atmosphere. GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The emission of GHGs through the combustion of fossil fuels (i.e., fuels containing carbon) in conjunction with other human activities, appears to be closely associated with global warming. State law defines GHG to include the following: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>) (Health and Safety Code Section 38505(g)). The most common GHG that results from human activity is CO<sub>2</sub>, followed by CH<sub>4</sub> and N<sub>2</sub>O.

Traditionally, GHGs and other global warming pollutants are perceived as solely global in their impacts and that increasing emissions anywhere in the world contributes to climate change anywhere in the world. A study conducted on the health impacts of CO<sub>2</sub> “domes” that form over urban areas cause increases in local temperatures and local criteria pollutants, which have adverse health effects.<sup>62</sup>

The analysis of GHGs is a different analysis than the analysis of criteria pollutants for the following reasons. For criteria pollutants, the significance thresholds are based on daily emissions because attainment or non-attainment is primarily based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects on human health (e.g., one-hour and eight-hour standards). Since the half-life of CO<sub>2</sub> is approximately 100 years, for example, the effects of GHGs occur over a longer term which means they affect the global climate over a relatively long time-frame. As a result, the South Coast AQMD's current position is to evaluate the effects of GHGs over a longer timeframe than a single day (i.e., annual emissions). GHG emissions are typically considered to be cumulative impacts because they contribute to global climate effects.

The South Coast AQMD convened a “Greenhouse Gas CEQA Significance Threshold Working Group” to consider a variety of benchmarks and potential significance thresholds to evaluate GHG impacts. On December 5, 2008, the South Coast AQMD adopted an interim CEQA GHG Significance Threshold for projects where South Coast AQMD is the lead agency (South Coast AQMD, 2008). This interim threshold is set at 10,000 metric tons of CO<sub>2</sub> equivalent emissions (MT/yr of CO<sub>2</sub>eq). The South Coast AQMD prepared a “Draft Guidance Document – Interim CEQA GHG Significance Thresholds” that outlined the approved tiered approach to determine GHG significance of projects (South Coast AQMD, 2008, pg. 3-10). The first two tiers involve: 1) exempting the project because of potential reductions of GHG emissions allowed under CEQA;

<sup>62</sup> Jacobsen, Mark Z. “Enhancement of Local Air Pollution by Urban CO<sub>2</sub> Domes,” Environmental Science and Technology, as describe in Stanford University press release on March 16, 2010 available at: <http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html>.

and 2) demonstrating that the project's GHG emissions are consistent with a local general plan. Tier 3 proposes a limit of 10,000 MT/yr CO<sub>2</sub>eq as the incremental increase representing a significance threshold for projects where South Coast AQMD is the lead agency (South Coast AQMD, 2008, pp. 3-11). Tier 4 (performance standards) is yet to be developed. Tier 5 allows offsets that would reduce the GHG impacts to below the Tier 3 brightline threshold. Projects with incremental increases below this threshold will not be cumulatively considerable.

The purpose of Rule 1168 is to reduce emissions of VOCs, toxic air contaminants, and stratospheric ozone-depleting compounds from the application of adhesives, adhesive primers, sealants, and sealant primers because formulations of these products contain compounds that are primarily comprised of VOCs but can also contain toxics and stratospheric ozone-depleting compounds. However, adhesives and sealants are not known to contain GHG compounds such as HFCs, PFCs, and SF<sub>6</sub> because these chemicals are typically used in refrigeration and fire suppression application and PAR 1168 does not contain any proposed limitations on the use of GHG compounds.

The only known GHG compound in adhesives and sealants subject to Rule 1168 is hydrofluoroolefin (HFO) which is a category of foam blowing agents that are currently being used in formulations of pressurized two-part urethane foams or adhesives. Because PAR 1168 considers a limited exemption for Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHHA's assessment for toxicity concerns, Opteon 1100, which also contains a foam blowing agent which is GHG compound, could potentially replace currently used HFOs (e.g., HFO-1234ze and HFO-1233zd) in these products. Since Opteon 1100, HFO-1234ze, and HFO-1233zd are products which all have similar, low global warming potentials (GWP), the potential reformulation of Two-Component Foam Sealants with a different foam blowing agent, such as what is used in Opteon 1100, would not be expected to substantially change the overall GHG emissions associated with the use of these products. Therefore, no significant GHG impacts are expected.

The main focus of PAR 1168 is to revise VOC limits and/or their corresponding effective dates for certain adhesive and sealant categories, which as explained earlier in this chapter, will result in potentially significant operational air quality impacts for VOC emissions. PAR 1168 also proposes to prohibit the manufacture, supply, sale and use of adhesives and sealants containing t-BAC and pCBtF but neither of these compounds are considered a GHG pollutant. Further, PAR 1168 does not contain any proposed revisions that would require any additional reductions of stratospheric ozone-depleting compounds.

As previously explained in the ~~criteria~~ air pollutants impacts discussion earlier in this chapter, adhesives and sealants are products which are typically applied onto various surfaces and are not utilized in combustion activities whatsoever. Thus, for the same reasons no construction or operation emissions of combustion-generated criteria air pollutants (e.g., NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>) are expected to be created if PAR 1168 is implemented, combustion-generated GHG pollutants (e.g., CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O) would also not be created if PAR 1168 is implemented.

**Conclusion – GHG Impacts:** The proposed revisions to VOC limits and/or their corresponding effective dates for certain adhesive and sealant categories along with the proposed prohibition of t-BAC and pCBtF to reduce toxics contained in certain adhesives and sealants, and the conditional limited exemption of Opteon 1100 in Two-Component Foam Sealants will have no significant impact on GHG emissions. Therefore, PAR 1168 is not expected to generate GHG emissions either

directly or indirectly, that may have a significant impact on the environment. Further, implementation of PAR 1168 would not be expected to conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions since GHG emissions would not be impacted in any way by PAR 1168. **Thus, PAR 1168 will have no significant GHG impacts.**

**Project-Specific Mitigation:** Since no significant GHG emissions impacts were identified, no mitigation measures are necessary or required.

**Conclusion – Cumulative GHG Impacts:** Since PAR 1168 will have no significant GHG impacts, GHG impacts are not also cumulatively considerable.

**Remaining Cumulative GHG Impacts:** Since GHG impacts are not expected from PAR 1168 and thus, are not considered to be cumulative considerable, there are no remaining cumulative GHG impacts.

## 4.2 SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

CEQA Guidelines Section 15126(c) requires an environmental analysis to consider "any significant irreversible environmental changes which would be involved if the proposed action should be implemented." This Final SEA identified the topic of air quality during operation due to delayed and permanent foregone VOC emission reductions of 0.42 ~~0.12~~ tpd and 0.28 tpd, respectively, as the only environmental area with significant environmental effects. The air quality effects from the operation could not be feasibly mitigated and would result in a significant and unavoidable air quality impact if PAR 1168 is implemented.

## 4.3 POTENTIAL ENVIRONMENTAL IMPACTS FOUND NOT TO BE SIGNIFICANT

CEQA requires this section of the SEA to identify the environmental topic areas that were analyzed and concluded to have no impacts or less than significant impacts if the proposed project is implemented. For the effects of a project that were determined not to be significant, CEQA Guidelines Section 15128 requires the analysis to contain a statement briefly indicating the reasons that various effects of a project were determined not to have significant impacts and were therefore not discussed in detail.

This subchapter of the SEA identifies the environmental topic areas that were previously analyzed in the October 2017 Final EA for Rule 1168 and concluded to have either less than significant impacts or no impacts (e.g., aesthetics, agriculture and forestry resources; air quality and GHG emissions, biological resources; cultural resources; energy, geology and soils; hazards and hazardous materials; hydrology and water quality; land use and planning; mineral resources; noise; population and housing; public services; recreation; solid and hazardous waste; and transportation and traffic). For all environmental topics except air quality and GHG emissions which is discussed and further analyzed in Sections 4.1 and 4.2 of this chapter, this section assesses whether these previously evaluated environmental topic areas in the October 2017 Final EA for Rule 1168 would be affected by PAR 1168. Also, since two new environmental topic areas of tribal cultural resources and wildfires were added to the CEQA Guidelines after the October 2017 Final EA for Rule 1168 was certified, this section examines whether the PAR 1168 would contribute to any impacts on tribal cultural resources and wildfires.



**Environmental Topic Areas Previously Concluded In the October 2017 Final EA To Have No Impacts**

The following environmental topic areas were previously analyzed and concluded in the October 2017 Final EA for Rule 1168 to have no impacts: aesthetics; agriculture and forestry resources; biological resources; cultural resources; energy; geology and soils; land use and planning; mineral resources; noise; population and housing; and recreation.

This SEA independently considers the PAR 1168 and analyzes the incremental changes, if any, relative to the baseline which is the project analyzed in the October 2017 Final EA for Rule 1168. When comparing the types of activities and associated environmental impacts with implementing the VOC limits and the corresponding effective dates in the October 2017 version of Rule 1168 as previously analyzed in the October 2017 Final EA for Rule 1168 to the currently proposed project (PAR 1168), similar impacts to the same environmental topic areas that were previously analyzed are expected to occur for all of the environmental topics analyzed except air quality and GHG emissions which are discussed in Sections 4.1 and 4.2 of this chapter. For this reason, the incremental changes associated with implementing the proposed project will not be expected to alter the previous conclusions reached in the October 2017 Final EA for Rule 1168 for the environmental topic areas which were identified as having no impacts (aesthetics; agriculture and forestry resources; biological resources; cultural resources; energy; geology and soils; land use and planning; mineral resources; noise; population and housing; recreation; solid and hazardous waste; and transportation and traffic). Therefore, since no impacts to these environmental topic areas would occur if the PAR 1168 implemented, they are not further evaluated in this SEA. A brief summary of the previous conclusions reached as well as the reasoning why the no impact conclusions would remain the same for PAR 1168 is provided for each of the aforementioned environmental topic areas.

**Aesthetics**

The October 2017 Final EA for Rule 1168 previously analyzed aesthetics impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no aesthetics impacts would occur because: 1) no construction would be required to install new or modify existing structures that would obstruct or degrade scenic resources; 2) no light generating equipment would be required that would adversely affect day or nighttime views; and 3) any changes to the manufacturing process would occur inside the facility's buildings and do not affect the exterior of the structure. The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF<sub>7</sub> and t-BAC due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. As with the October 2017 version of Rule 1168 and as explained in Section 4.1 of this chapter, PAR 1168 will also not require construction activities to install new or modify existing structures which means that PAR 1168 will also not require new light generating equipment or cause any changes in the visual profile of the facility structures. Therefore, the previous conclusion of no impact to aesthetics reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

### **Agriculture and Forestry Resources**

The October 2017 Final EA for Rule 1168 previously analyzed agriculture and forestry resources impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no agriculture and forestry resources impacts would occur since compliance with the October 2017 version of Rule 1168 would not result in the loss of forest land, conversion of farmland to non-agricultural use or conflict with zoning for agriculture use. The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF) and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, manufacturing of the adhesive and sealant products formulated to achieve the applicable VOC limits by their effective dates will occur within the confines of the same existing facilities as previously analyzed in October 2017 Final EA for Rule 1168 and these ongoing manufacturing activities will not require the use of forest land, conversion of farmland to non-agricultural use or conflict with zoning for agriculture use. Therefore, the previous conclusion of no impact to agriculture and forestry resources reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

### **Biological Resources**

The October 2017 Final EA for Rule 1168 previously analyzed biological resources impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no biological resources impacts would occur because these activities would occur inside the boundaries of established industrial manufacturing facilities which have been previously cleared of vegetation and have already been paved for safety and fire prevention reasons and as such, would not result in or have the potential to result in the removal of vegetation with potential to support wildlife. The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF) and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. As with the October 2017 version of Rule 1168, the manufacture of adhesive and sealant products will continue to occur within the boundaries of existing industrial facilities which have been previously cleared of vegetation and have already been paved for safety and fire prevention reasons. Thus, PAR 1168 would not be expected to result in or have the potential to result in the removal of vegetation with potential to support wildlife. Therefore, the previous conclusion of no impact to biological resources reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

### **Cultural Resources**

The October 2017 Final EA for Rule 1168 previously analyzed cultural and tribal cultural resource impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no cultural resources impacts would occur because there would be no construction-related activities to existing manufacturing facilities, and therefore no impacts to historical, cultural, paleontological, and archaeological resources. The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF<sub>3</sub> and t-BAC due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, formulation of the adhesive and sealant products will not require any construction-related activities to existing manufacturing facilities, and there will be no expected impacts to historical or cultural resources, and no paleontological, archaeological, or historical resources disturbance. Therefore, the previous conclusion of no impact to cultural resources reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

### **Energy**

The October 2017 Final EA for Rule 1168 previously analyzed energy impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA concluded that no energy impacts would occur because manufacturing and reformulation of adhesive and sealant products would comply with any relevant existing energy conservation plans, create no need for new or substantially altered power or natural gas utility systems, create no significant adverse effects on peak and base period demands for electricity or other forms of energy, and cause no adverse effect on energy production or distribution infrastructures. The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF<sub>3</sub> and t-BAC due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168. Thus, the same reasoning for why the October 2017 Final EA for Rule 1168 concluded that no energy impacts would occur in also applies to PAR 1168. Therefore, the previous conclusion of no impact to energy reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

### **Geology and Soils**

The October 2017 Final EA for Rule 1168 previously analyzed geology and soil impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-

depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no geology and soil impacts would occur because reformulation of products would take place at existing manufacturing facilities without involving construction activities and therefore the October 2017 version of Rule 1168 would not:

- 1) Alter the exposure of people or property to geological and natural hazards;
- 2) Disrupt soil, change topography, erode beach sand or change existing siltation rates;
- 3) Require groundwork, earth moving activities, or cause new landslide effects or changes to unique geologic features; and
- 4) Require the installation of a new or modified septic tank, or alternative wastewater disposal system.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAC due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHHA's assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168. Thus, the same reasoning for why the October 2017 Final EA for Rule 1168 concluded that no geological and soils impacts would occur in also applies to PAR 1168. Further, since no construction activities would be needed to implement PAR 1168, the same reasoning for why no geological and soils impacts would occur as listed in items 1) through 4) also apply to the proposed project. Therefore, the previous conclusion of no impact to geology and soil reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

### **Land Use and Planning**

The October 2017 Final EA for Rule 1168 previously analyzed land use and planning impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no impacts to present or planned land uses in the region would occur because reformulation of adhesives and sealant to meet the VOC limits would occur within the boundary of existing manufacturing facilities and:

- 1) Physical division of an established community would not be expected, no construction activities would be needed and no new developments in undeveloped areas would occur.
- 2) There would be no conflict with any applicable land use plan, policy, or regulation due to the absence of an agency with jurisdiction over the Rule 1168.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAC due to toxicity concerns; 2) delay the

effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~–3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA’s assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168. Thus, the same reasoning for why the October 2017 Final EA for Rule 1168 concluded that no land use and planning impacts would occur as listed in items 1) and 2) also applies to PAR 1168. Therefore, the previous conclusion of no impact to land use and planning reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

### **Mineral Resources**

The October 2017 Final EA for Rule 1168 previously analyzed mineral resources impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no impacts to mineral resources would occur because compliance with the October 2017 version of Rule 1168 would not result in the loss of availability of a known mineral resource of value to the region and the residents of the state such as gravel, asphalt, bauxite, gypsum, et cetera, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAC due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~–3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA’s assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168. Thus, the same reasoning for why the October 2017 Final EA for Rule 1168 concluded no impacts on the demand or use of important minerals, such as those described above, also applies to PAR 1168. Therefore, the previous conclusion of no impact to mineral resources reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

### **Noise**

The October 2017 Final EA for Rule 1168 previously analyzed noise impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no noise impacts would occur because the October 2017 version of Rule 1168 would:

- 1) Not alter the manufacturing, distribution, or application of adhesives and sealants in any substantial way that would alter existing noise profile at the manufacturing facilities;

- 2) Comply with noise standards that have been established by Occupational Safety and Health Administration (OSHA) and California-OSHA to protect worker health at distribution and retail locations;
- 3) Not expose persons to or generate excessive ground borne vibration or ground borne noise level since no construction activities are expected; and
- 4) Not cause an increase periodic or temporary ambient noise levels in the vicinity of affected manufacturing facilities since compliance would neither require construction-related activities nor change the existing activities currently performed by persons who utilize adhesives and sealants subject to Rule 1168.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168 with no expected changes in manufacturing, distribution, application, and noise profile characteristics. Since PAR 1168 would not require physical modifications involving construction, no new periodic or temporary ambient noise levels increases in the vicinity of affected facilities, excessive ground borne vibration, and ground borne noise level would be expected. Thus, the same reasoning for why the October 2017 Final EA for Rule 1168 concluded no noise impacts would occur, such as those described above, also applies to PAR 1168. Therefore, the previous conclusion of no impact to noise reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

### **Population and Housing**

The October 2017 Final EA previously analyzed population and housing impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA concluded that no population and housing impacts would occur because:

- 1) No additional work was required since adhesive and sealant products would be reformulated using the same equipment that was previously used to manufacture those products.
- 2) No additional workers were expected to be needed to apply the reformulated products since the usage amount of the reformulated products would not be expected to substantially change.
- 3) The October 2017 version of Rule 1168 would not create any industry that would affect population growth, directly or indirectly induce the construction of housing units, or require the displacement of persons or housing elsewhere in the South Coast AQMD.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the

effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~–3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA’s assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168 with no expected changes in manufacturing, distribution, and application. Since PAR 1168 would not require physical modifications involving construction or new housing, the same reasoning for why no population and housing impacts would occur as listed in items 1) through 3) also applies to PAR 1168. Therefore, the previous conclusion of no impact to population and housing reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

### **Recreation**

The October 2017 Final EA for Rule 1168 previously analyzed recreation impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA concluded that no recreation impacts would occur because the reformulation of adhesive and sealant products would not:

- 1) directly or indirectly increase or redistribute population;
- 2) affect or increase the demand for or use of existing neighborhood and regional parks or other recreational facilities; and
- 3) require the construction of new or the expansion of existing recreational facilities that might have an adverse physical effect on the environment.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAC due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~–3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA’s assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168 with no expected changes in manufacturing, distribution, and application. Since PAR 1168 would not require physical modifications involving construction or new housing associated with population growth, additional recreation resources would also not be needed. Consistent with the previous conclusion in the October 2017 Final EA for Rule 1168, PAR 1168 would not result in any recreation impacts as summarized in items 1) through 3). Therefore, the previous conclusion of no impact to recreation reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

### **Solid and Hazardous Waste**

The October 2017 Final EA for Rule 1168 previously analyzed solid and hazardous waste impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric

ozone-depleting compounds. The October 2017 Final EA concluded that no solid and hazardous waste impacts would occur because:

- 1) Compliance with the October 2017 version of Rule 1168 would not change the disposal practices and would not increase the volume of solid or hazardous wastes that cannot be handled by existing municipal or hazardous waste disposal facilities or require additional waste disposal capacity.
- 2) Implementation of the October 2017 version of Rule 1168 was not expected to interfere with any affected distributors' or retailers' ability to comply with applicable local, state, or federal waste disposal regulations.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAc due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, adhesives and sealants products are expected to be manufactured, formulated, used, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168 with no expected changes in manufacturing, distribution, and application. ~~PAR 1168 would include a three-year sell-through and a four-year use-through provision for products manufactured prior to the effective date of the t-BAc and pCBtF prohibition (effective January 1, 2024, except for Single Ply Roof Membrane Adhesives with an effective prohibition date of January 1, 2025).~~ The sell-through and use-through provisions in PAR 1168 will allow manufacturers and suppliers to deplete Regulated Products in the warehouse or on the shelf and allows users to use up any remaining product rather than disposing of them. The sell-through and use-through effective dates also accommodate the typical three-year shelf life of these Regulated Products. Of course, when there is unused material under the current version of Rule 1168, contractors and businesses using Regulated Products either dispose of waste material according to the specifications in the manufacturer's product data sheets or recycle the waste material. Under PAR 1168, the disposal practices and the total amount of materials (hazardous and non-hazardous) disposed of would not be expected to change. Therefore, implementation of PAR 1168 would not be expected to create a new need to dispose of unused materials that do not comply with PAR 1168 upon adoption. Consistent with the previous conclusion, the proposed project would not result in the impacts summarized in items 1) and 2) and the previous conclusion of no impact to solid and hazardous waste reached in the October 2017 Final EA will continue to apply to the proposed project.

### **Transportation and Traffic**

The October 2017 Final EA for Rule 1168 previously analyzed transportation and traffic impacts associated with reformulating adhesive and sealant products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The October 2017 Final EA for Rule 1168 concluded that no transportation and traffic impacts would occur because:

- 1) Reformulation of adhesive and sealant products would not change the delivery and circulation pattern of Regulated Products. Thus, transportation demands related to



- transporting substitute chemicals or new formulations of materials was not expected to increase.
- 2) No additional worker trips to distribution or retail facilities were expected.
  - 3) No changes in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks, would be expected since product reformulation would occur within the existing manufacturing facilities and regulated/reformulated products were typically shipped via ground transportation.
  - 4) No new roadway hazards or incompatible roadway uses or alteration of the existing long-term circulation patterns due to no expected increases in transportation-related demands would be expected.
  - 5) No requirements specific to emergency access points to adversely affect existing emergency access plans were imposed.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAC due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHHA's assessment for toxicity concerns. Under PAR 1168, adhesives and sealants are expected to be manufactured, formulated, and applied in a similar fashion as occurred with the October 2017 version of Rule 1168 with no expected changes in modes of transportation, delivery, recirculation, and distribution of adhesive and sealants. Consistent with the previous conclusion in the October 2017 Final EA for Rule 1168, PAR 1168 would not be expected to result in the impacts summarized in items 1) through 5). Therefore, the previous conclusion of no impact to transportation and traffic reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

### **Wildfires and Tribal Cultural Resources**

At the time the October 2017 Final EA for Rule 1168 was certified, the environmental checklist did not include tribal cultural resources and wildfires as environmental topic areas to be evaluated. However, in 2019, two new environmental topic areas, tribal cultural resources and wildfires, were added to the environmental checklist in the CEQA Guidelines. To make the analysis of environmental impacts consistent with these changes to the environmental checklist, Tables 4-4 and 4-5 provide the new environmental checklist questions for both of these additional topic areas and an analysis of whether the proposed project would be expected to contribute to impacts on tribal cultural resources and wildfires, respectively.

**Table 4-4**  
**Evaluation of Wildfire Impacts**

<b>WILDFIRE: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:</b>	<b>ANALYSIS AND CONCLUSION</b>
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<b>No Impact.</b> Under PAR 1168, adhesives and sealants will continue to be formulated at the existing manufacturing facilities located in industrial zoned areas within and outside of South Coast AQMD's jurisdiction and California. Manufacturing facilities are typically not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. In the October 2017 Final EA for Rule 1168, the response to question f) in Section VIII – Hazards and Hazardous Materials, poses the same question and the analysis concluded that the project analyzed in October 2017 Final EA for Rule 1168 would have no impact on any adopted emergency response plan or emergency evacuation plan. Because the previous conclusion of no impact to hazard and hazardous materials reached in the October 2017 Final EA for Rule 1168 will continue to apply to the proposed project, implementation of the proposed project would also not be expected to substantially impair an adopted emergency response plan or emergency evacuation plan.
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<b>No Impact.</b> Under PAR 1168, adhesives and sealants will continue to be formulated at the existing manufacturing facilities located in industrial zoned areas within and outside of South Coast AQMD's jurisdiction and California. Manufacturing facilities are not typically located in or near state responsibility areas or lands classified as very high fire hazard severity zones. The manufacturing facilities are typically located in existing industrial, commercial or mixed land use areas and are not located near wildlands. In the event of a wildfire, no exacerbation of wildfire risks, and no consequential exposure of the project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, or other factors would be expected to occur.

**Table 4-4 (continued)**  
**Evaluation of Wildfire Impacts**

<b>WILDFIRE: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:</b>	<b>ANALYSIS AND CONCLUSION</b>
<p>c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?</p>	<p><b>No Impact.</b> Under PAR 1168, adhesives and sealants will continue to be formulated at the existing manufacturing facilities located in industrial zoned areas within and outside of South Coast AQMD’s jurisdiction and California. Manufacturing facilities are not typically located in or near state responsibility areas or lands classified as very high fire hazard severity zones. As noted previously, PAR 1168 is not expected to require physical changes or modifications that would involve construction activities. Thus, PAR 1168 would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.</p>
<p>d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?</p>	<p><b>No Impact.</b> Under PAR 1168, adhesives and sealants will continue to be formulated at the existing manufacturing facilities located in industrial zoned areas within and outside of South Coast AQMD’s jurisdiction and California. Manufacturing facilities are not typically located in or near state responsibility areas or lands classified as very high fire hazard severity zones. In the October 2017 Final EA for Rule 1168, the response to question c) in Section VII – Geology and Soils, poses a similar question relative to landslides and the analysis concluded that the project analyzed in the October 2017 Final EA for Rule 1168 would have no impact. Also, the response to question f) in Section IX – Hydrology and Water Quality of the same document, poses a similar question relative to flooding and the analysis concluded that the project analyzed in October 2017 Final EA for Rule 1168 would have no impact. Because the previous conclusion of no impact to geology and soils and hydrology and water quality reached in the October 2017 Final EA for Rule 1168 will continue to apply to the proposed project, PAR 1168 would also not be expected to expose people or structures to new significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.</p>

**Table 4-4 (concluded)**  
**Evaluation of Wildfire Impacts**

<b>WILDFIRE: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:</b>	<b>ANALYSIS AND CONCLUSION</b>
e) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildfires?	<b>No Impact.</b> Under PAR 1168, adhesives and sealants will continue to be formulated at the existing manufacturing facilities located in industrial zoned areas within and outside of South Coast AQMD’s jurisdiction and California. Manufacturing facilities are not typically located in or near state responsibility areas or lands classified as very high fire hazard severity zones. In the October 2017 Final EA for Rule 1168, the response to question g) in Section VIII – Hazards and Hazardous Materials, poses essentially the same question and the analysis concluded that the project analyzed in the October 2017 Final EA for Rule 1168 would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. Thus, implementation of PAR 1168 would also not be expected to expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildfires.

**Based on the analysis presented in Table 4-4, PAR 1168 would not be expected to have any impacts on wildfires.**

**Table 4-5**  
**Evaluation of Tribal Cultural Resources Impacts**

<b>Tribal Cultural Resources:</b> <b>Would the project:</b>	<b>ANALYSIS AND CONCLUSION</b>
<p>Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code §21074, as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is either:</p> <ul style="list-style-type: none"> <li>• Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code §5020.1(k)?</li> <li>• A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Public Resources Code §5024.1(c)? (In applying the criteria set forth in Public Resources Code §5024.1(c), the lead agency shall consider the significance of the resource to a California Native American tribe.)</li> </ul>	<p><b>No Impact.</b> Under PAR 1168, adhesives and sealants will continue to be formulated at the existing manufacturing facilities located in industrial zoned areas within and outside of South Coast AQMD’s jurisdiction and California. The proposed project is not expected to require physical changes to a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American Tribe. However, as part of releasing the October 2017 Final EA for Rule 1168 for public review and comment, South Coast AQMD provided a formal notice to all California Native American Tribes (Tribes) that requested to be on the Native American Heritage Commission’s (NAHC) notification list per Public Resources Code Section 21080.3.1(b)(1). Furthermore, the proposed project is not expected to result in a physical change to a resource determined to be eligible for inclusion or listed in the California Register of Historical Resources or included in a local register of historical resources. Similarly, the proposed project is not expected to result in a physical change to a resource determined by the South Coast AQMD to be significant to any tribe. For these reasons, the proposed project is not expected to cause any substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074.</p>

**Based on the analysis presented in Table 4-5, PAR 1168 would not be expected to have any impacts on tribal cultural resources.**

**Environmental Topic Areas Previously Concluded In the October 2017 Final EA To Have Less Than Significant Impacts**

The following environmental topic areas were previously analyzed in the October 2017 Final EA for Rule 1168 to have less than significant impacts: air quality and greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality; and public services.

The following discussion independently considers the currently proposed project and analyzes the incremental changes, if any, relative to the baseline which is the project analyzed in the October 2017 Final EA for Rule 1168, in order to determine if the previous conclusions of less than significant impacts for the environmental topic areas of air quality and greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality; and public services need to be changed.

**Air Quality and Greenhouse Gas Emissions**

The October 2017 Final EA for Rule 1168 previously concluded that air quality and greenhouse gas emissions impacts would be less than significant due to operational VOC emission reductions associated with reformulating adhesives and sealants with less VOC containing chemicals, less or no toxics, and no stratospheric ozone-depleting compounds. However, the analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAC due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; ~~and~~ 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns.

Sections 4.1 and 4.2 of this SEA analyzes the proposed project's air quality and GHG impacts and concludes significant operational air quality impacts since the daily delayed and permanent VOC emission reductions foregone would exceed the South Coast AQMD's daily VOC operational significance threshold with no feasible mitigation measures.

**Hazards and Hazardous Materials**

The October 2017 Final EA for Rule 1168 previously concluded less than significant hazards and hazardous materials impacts associated with reformulating adhesives and sealants with less VOC containing chemicals, less or no toxics, and no stratospheric ozone-depleting compounds. The analysis in the October 2017 Final EA for Rule 1168 concluded that there would be:

- 1) No significant hazard to the public or environment through the routine transport, use, and disposal of hazardous materials; no new significant hazard to the public or the environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment; no new hazardous emissions, or new or increased handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school; or no significant increase in fire hazard in areas with flammable materials.
- 2) No change in how these facilities comply with their current hazardous waste handling practices for any adhesive and sealant manufacturing facilities are identified on lists of California Department of Toxics Substances Control hazardous waste facilities per

Government Code Section 65962.5. In fact, any facility that is subject to the requirements in Government Code Section 65962.5 would still be required need to comply with any regulations relating to that code section.

- 3) No new safety hazards would be expected to people working or residing in the vicinity of public/private airports.
- 4) No impairment of the implementation of or physically interference with an adopted emergency response plan or emergency evacuation plan.
- 5) No significant exposure to people or structures to risk of loss, injury or death involving wildland fires.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAC due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~—3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA’s assessment for toxicity concerns.

As previously discussed in Section 4.1, results of the survey and online SDSs search for adhesives and sealants indicated that pCBtF was primarily used in roofing products but that pCBtF-formulated products did not dominate the market (Table 4-3). Indeed, there is a wide variety of other products commercially available and currently in-use that do not contain pCBtF and t-BAC. Thus, based upon these considerations, PAR 1168 is not expected to drive reformulation of many categories of adhesives and sealants in order to meet the VOC limits. Further, the extensive and comprehensive regulatory requirements regarding flammable and otherwise hazardous materials will not be affected by PAR 1168 because manufacturers will mostly continue to handle and work with the same solvents, which include some hazardous or toxic materials that will continue to have potential hazard impacts. As with the October 2017 version of Rule 1168, PAR 1168 is not expected to increase or create any new hazardous emissions which would adversely affect existing or proposed schools. Instead, PAR 1168 could benefit the schools by decreasing people’s exposure to t-BAC and pCBtF as a result of their proposed prohibition. In addition, PAR 1168 would not change the regulatory requirements for manufacturing facilities that are identified on lists of California Department of Toxics Substances Control hazardous waste facilities per Government Code Section 65962.5. PAR 1168 also contains no requirements that would pertain to or alter any adopted emergency response plans or emergency evacuation plans that may be in place at facilities that manufacture or use the Regulated Products. Under PAR 1168, adhesives and sealants will continue to be formulated at the existing manufacturing facilities located in existing industrial, commercial or mixed land use areas within and outside of South Coast AQMD’s jurisdiction and California. These manufacturing facilities are not typically located in or near wildlands to expose people or structures to risk of loss, injury or death involving wildland fires. Finally, PAR 1168 would not change the existing requirements and permit conditions for the proper handling of flammable materials. Further, PAR 1168 does not contain any requirements that would prompt facility owners/operators to begin using new flammable materials. Thus, consistent with the previous conclusion in the October 2017 Final EA for Rule 1168 relative to hazards and hazardous materials, the proposed project would not result in the impacts

summarized in items 1) through 5). Therefore, the previous conclusion of less than significant hazards and hazardous materials impacts reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

### **Hydrology and Water Quality**

The October 2017 Final EA for Rule 1168 previously analyzed the hydrology and water quality impacts associated with reformulating adhesives and sealants with less VOC containing chemicals, less or no toxics, and no stratospheric ozone-depleting compounds. The analysis in the October 2017 Final EA for Rule 1168 concluded that the October 2017 version of Rule 1168 would not violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, or otherwise substantially degrade water quality. Further, implementation of the October 2017 version of Rule 1168 would also not be expected to result in a determination by the wastewater treatment provider which serves or may serve the manufacturers and users of the reformulated Regulated Products that there is not adequate existing capacity to serve any additional wastewater that may be generated from using water for cleaning up.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAC due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHHA's assessment for toxicity concerns. PAR 1168 would not change the current product practices or alter the product formulations to be more detrimental to water quality. Further, the sell-through and use-through provision in the proposed project would not create a new need to dispose of unused materials. If not being used, contractors and businesses using products would either dispose of waste material according to the specifications in the manufacturer's product data sheets or recycle the waste material, such that unused materials are not disposed of via wastewater. While PAR 1168 would not specify or dictate the type of solvent for formulation, wastewater from cleaning up water-borne formulations could be disposed of into the public sewer system, in lieu of disposal as hazardous waste. However, PAR 1168 is not expected to cause significant adverse effects to water quality, wastewater treatment, or wastewater treatment capacity since such effects were not previously observed as a result of reformulating coatings with water-borne technology in response to other rules targeting reductions in VOC emissions from area sources such as Rule 1113 – Architectural Coatings, Rule 1107 – Coating of Metal Parts and Products, and Rule 1151– Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations. Therefore, the previous conclusion of less than significant impacts relating to water quality standards, waste discharge requirements, wastewater treatment and capacity reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

The analysis in the October 2017 Final EA also concluded less than significant impacts to ground water and water supplies because:

- 1) Unless being treated properly, the quality of groundwater is not suitable for usage in the manufacturing of Regulated Products and manufacturers typically use potable water for water-borne formulations of Regulated Products.



- 2) The CEQA evaluations for previous amendments to other VOC-based rules (e.g., Rules 1107, 1113, and 1151) concluded no significant impacts to water and groundwater supplies as a result of reformulation with waterborne technologies.

The same reasoning for why no significant impacts relating to water and groundwater supplies would occur as listed in items 1) and 2) also apply to PAR 1168. Therefore, similar to the October 2017 version of Rule 1168, PAR 1168 is not expected to substantially deplete groundwater or water supplies and substantially interfere with groundwater recharge.

Finally, the October 2017 Final EA for Rule 1168 concluded that the October 2017 version of Rule 1168 would not:

- 1) Substantially alter the existing drainage pattern of the site or area where reformulated Regulated Products manufactured or used, including through alteration of the course of a stream or river;
- 2) Substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on- or off-site or flooding on- or off-site;
- 3) Create new or contribute to existing runoff water which would exceed the capacity of existing or planned storm water drainage systems;
- 4) Place housing or other structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- 5) Expose people or structures to a significant risk of loss, injury or death involving flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow; and
- 6) Result in the construction of new water or wastewater treatment facilities or new storm water drainage facilities, or the expansion of existing facilities.

Under PAR 1168, adhesives and sealants will continue to be manufactured at existing facilities whose process lines operate within enclosed buildings. Similarly, new or revised formulations of adhesives and sealants are expected to be applied and used in the same manner as the adhesives and sealants currently subject to the requirements in the October 2017 version of Rule 1168. Further, unused Regulated Products will be recycled or properly disposed according to the specifications in the manufacturer's product safety data sheets and according to local and state requirements for proper handling and disposal. Therefore, the same reasoning for why no impacts relating to drainage patterns of the area, run off water, exposing people and structures to flooding hazards, and constructing new water or wastewater treatments would occur as listed in items 1) through 6) also apply to PAR 1168.

### **Public Services**

The October 2017 Final EA for Rule 1168 previously analyzed public services impacts associated with reformulating adhesives and sealants with less VOC containing chemicals, less or no toxics, and no stratospheric ozone-depleting compounds and concluded that less than significant impacts would occur because:

- 1) Implementation of the October 2017 version of Rule 1168 might result in an accidental or emergency release of hazardous or flammable materials that are being used during

- the reformulation process. While unpredictable and with a low probability of occurring, it would require the assistance of public services personnel.
- 2) Police and fire department personnel may be needed since they are typically first responders to emergency situations and may assist local hazmat teams with containing hazardous materials, putting out fires, and controlling crowds to reduce public exposure to releases of hazardous materials in the event of a spill. However, no substantial increases in police attendance are anticipated due to the low probability of such incidences.

The analysis in this SEA focuses on the following key components of PAR 1168 which proposes to: 1) prohibit the use of pCBtF and t-BAC due to toxicity concerns; 2) delay the effective dates of VOC emission limits or maintain the existing VOC emission limits for certain categories of adhesives and sealants; ~~and~~ 3) create additional subcategories of Regulated Products to better characterize and refine VOC emission limits; and 4) allow Opteon 1100 as a VOC exempt compound for Two-Component Foam Sealants used in an industrial or professional setting contingent upon OEHHA's assessment for toxicity concerns. Under PAR 1168, adhesive and sealant products are expected to be manufactured within the boundary of existing manufacturing facilities with the same equipment. The same reasoning for why less than significant public service impacts relating to fire and police protection services would occur as listed in items 1) and 2) also apply to the proposed project.

The analysis in the October 2017 Final EA for Rule 1168 also concluded no impacts to public services from schools and other facilities because reformulation of adhesive and sealant products would not cause an increase in the local population such that:

- 1) additional personnel at local schools would not be needed; and
- 2) no new or physically altered government facilities would be needed in order to maintain acceptable service ratios, response times, or other performance objectives.

Since no increase in local population would be anticipated as a result of implementing PAR 1168, the same reasoning for why no public service impacts relating to schools and other facilities would occur as listed in items 1) and 2) also apply to the proposed project. Therefore, the previous conclusion of less than significant public services impacts relating to fire and police protection services and the no impacts conclusion relating to schools and other facilities reached in the October 2017 Final EA for Rule 1168 will continue to apply to PAR 1168.

#### **4.4 POTENTIAL GROWTH-INDUCING IMPACTS**

CEQA Guidelines Section 15126(d) requires an environmental analysis to consider the "growth-inducing impact of the proposed action." CEQA defines growth-inducing impacts as those impacts of a proposed project that "could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects, which would remove obstacles to population growth." [CEQA Guidelines Section 15126.2(d)].

To address this issue, potential growth-inducing effects are examined through the following considerations:

- Facilitation of economic effects that could result in other activities that could significantly affect the environment;
- Expansion requirements for one or more public services to maintain desired levels of service as a result of the proposed project;
- Removal of obstacles to growth through the construction or extension of major infrastructure facilities that do not presently exist in the project area or through changes in existing regulations pertaining to land development;
- Adding development or encroachment into open space; and/or
- Setting a precedent that could encourage and facilitate other activities that could significantly affect the environment.

#### **4.4.1 Economic and Population Growth, and Related Public Services**

A project would be considered to directly induce growth if it would directly foster economic or population growth or the construction of new housing in the surrounding environment (e.g., if it would remove an obstacle to growth by expanding existing infrastructure such as new roads or wastewater treatment plants).

The project evaluated in the October 2017 Final EA was concluded to not remove barriers to population growth, since implementation of the October 2017 version of Rule 1168 involved no changes to a General Plan, zoning ordinance, or a related land use policy.

The proposed project evaluated in this SEA contains incremental changes to the project previously evaluated in the October 2017 Final EA. The proposed project would also not be expected to remove barriers to population growth, since implementation of the proposed project does not involve any changes to a General Plan, zoning ordinance, or a related land use policy.

Further, the proposed project, as with the project evaluated in the October 2017 Final EA, does not include policies that would encourage the development of new housing or population-generating uses or infrastructure that would directly encourage such uses. The proposed project, as with the project evaluated in the October 2017 Final EA, does not change jurisdictional authority or responsibility concerning land use or property issues. Land use authority falls solely under the purview of the local governments. The South Coast AQMD is specifically excluded from infringing on existing city or county land use authority (Health and Safety Code Section 40414). Therefore, PAR 1168 would not directly trigger new residential development in the area.

PAR 1168 would not directly or indirectly stimulate substantial population growth, remove obstacles to population growth, or necessitate the construction of new community facilities that would lead to additional growth within South Coast AQMD's jurisdiction. Due to no expected construction activities, PAR 1168 would not require relocation of any workers. Further, PAR 1168 would not be expected to result in an increase in local population, housing, or associated public services (e.g., fire, police, schools, recreation, and library facilities) since no increase in population or the number of workers is expected. Likewise, PAR 1168 would not create new demand for secondary services, including regional or specialty retail, restaurant or food delivery, recreation, or entertainment uses. As such, the proposed project would not foster economic or population growth in the surrounding area in a manner that would be growth-inducing.

Thus, implementing PAR 1168 will not, by itself, have any direct or indirect growth-inducing impacts on businesses in the South Coast AQMD's jurisdiction because it is not expected to foster economic or population growth or the construction of additional housing and primarily affects existing facilities.

#### **4.4.2 Removal of Obstacles to Growth**

The facilities which manufacture adhesives and sealants that will be regulated by PAR 1168 are already established entities located within and outside of South Coast AQMD's jurisdiction and outside of California. Under PAR 1168, adhesives and sealants are expected to be manufactured, reformulated (as applicable), used, and applied in a similar fashion as adhesives and sealants subject to the October 2017 version of Rule 1168. Further, PAR 1168 will not cause any substantial changes in transportation type, delivery, recirculation, and distribution of adhesive and sealants. Therefore, PAR 1168 would not employ activities or uses that would result in growth inducement, such as the development of new infrastructure (e.g., new roadway access or utilities) that would directly or indirectly cause the growth of new populations, communities, or currently undeveloped areas. Likewise, PAR 1168 would not require or result in an expansion of existing public service facilities (e.g., police, fire, libraries, and schools) or the development of public service facilities that do not already exist.

#### **4.4.3 Development or Encroachments into Open Space**

Development can be considered growth-inducing when it is not contiguous to existing urban development and introduces development into open space areas. PAR 1168 applies to all adhesive and sealants manufactured, supplied, distributed, sold and used within South Coast AQMD's jurisdiction but does not contain any requirements that would trigger new land use developments. Moreover, as discussed in Section 4.1.1, PAR 1168 is not expected to require physical changes or modifications that would involve construction activities. Therefore, PAR 1168 would not require or result in development within or encroachment into an open space area.

#### **4.4.4 Precedent Setting Action**

Rule 1168 was adopted in April 1989 to reduce VOC emissions from adhesive applications. The rule has been amended 14 times with the last amendment in October 2017. The purpose of the October 2017 amendments to Rule 1168 was to reduce emissions of VOCs by 1.38 tpd, as well as reduce toxic air contaminants, and stratospheric ozone-depleting compounds from adhesives, adhesive primers, sealants, and sealant primers. The October 2017 amendments to Rule 1168 also included a commitment to conduct a technology assessment for top and trim adhesives, roofing products, plastic welding cements, and foam sealants to determine if products for nine adhesive and sealant categories were available that could achieve the VOC limits by January 1, 2023. The technology assessment concluded that some of these product categories either needed more time beyond January 1, 2023 to meet the VOC limits or that achieving the lower VOC limits would not be technically feasible. Thus, PAR 1168 proposes to adjust VOC limits and allow additional time for certain products to be reformulated. In addition, PAR 1168 proposes to prohibit t-BAC and pCBtF due to their toxicity concerns. By prohibiting t-BAC and pCBtF as strong carcinogens, PAR 1168 will set a precedent for future rule making activities aiming to reduce VOCs and toxic compounds. However, it is unlikely that the precedent set by prohibiting these carcinogenic compounds would cause other significant environmental effects, because the prohibition on t-BAC and pCBtF is intended to promote public health – a benefit with no significant impacts.

#### 4.4.5 Conclusion

PAR 1168 is not expected to foster economic or population growth or result in the need to construct additional housing or other infrastructure, either directly or indirectly, that would further encourage growth. PAR 1168 would also not result in an increase in production of resources or cause a progression of growth that could significantly affect the environment either individually or cumulatively.

### 4.5 RELATIONSHIP BETWEEN SHORT-TERM AND LONG-TERM ENVIRONMENTAL GOALS

CEQA documents are required to explain and make findings about the relationship between short-term uses and long-term productivity. [CEQA Guidelines Section 15065(a)(2)]. An important consideration when analyzing the effects of a proposed project is whether it will result in short-term environmental benefits to the detriment of achieving long-term goals or maximizing productivity of these resources. Implementing the proposed project is not expected to achieve short-term goals at the expense of long-term environmental productivity or goal achievement. The purpose and long-term environmental goals of Rule 1168 is to reduce emissions of VOCs, toxic air contaminants, and stratospheric ozone-depleting compounds from the application of adhesives, adhesive primers, sealants, and sealant primers because formulations of these products contain compounds that are primarily comprised of VOCs but can also contain toxics and stratospheric ozone-depleting compounds.

PAR 1168 contains a proposal to permanently prohibit the use of pCBtF and t-BAc due to toxicity concerns, and this portion of PAR 1168 directly supports the long-term goal of reducing toxic air contaminants which will result in a long-term environmental benefit. However, due to technological issues with the inability to achieve the VOC limits and effective dates in the October 2017 version of Rule 1168 for of certain adhesives and sealants, the short-term goal of PAR 1168 is to revert to the higher VOC limits that were in place prior to the October 2017 amendments to Rule 1168 and to extend the effective dates for certain categories of adhesives and sealants to allow manufacturers additional time to develop products with fewer VOCs, which will eventually lead to achieving VOC emission reductions for these categories of adhesives and sealants over the long-term. PAR 1168 will result in delayed VOC emission reductions foregone of 0.42 ~~0.12~~ tpd over the short-term and permanent VOC emission reductions foregone of 0.28 tpd over the long-term and these delayed and permanent emission reductions foregone were concluded to have significant and unavoidable operational air quality impacts. It is important to note that the majority of the VOC limits in PAR 1168 will remain unchanged such that the long-term goal of reducing VOCs from adhesives and sealants will prevail.

Of the potential environmental impacts discussed in Chapter 4, only those related to operational air quality are considered significant.

## **CHAPTER 5**

---

### **ALTERNATIVES**

**Introduction**

**Methodology for Developing Project Alternatives**

**Description of Alternatives to the Proposed Project**

**Alternatives Analysis**

**Comparison of Alternatives to the Proposed Project**

**Alternatives Rejected as Infeasible**

**Lowest Toxic and Environmentally Superior Alternative**

**Conclusion**

## 5.0 INTRODUCTION

This SEA provides a discussion of alternatives to the proposed project as required by CEQA. The alternatives discussion includes measures for attaining the objectives of the proposed project and provide a means for evaluating the comparative merits of each alternative. A ‘no project’ alternative must also be evaluated. The range of alternatives must be sufficient to permit a reasoned choice but need not include every conceivable project alternative. CEQA Guidelines Section 15126.6(c) specifically notes that the range of alternatives required in a CEQA document is governed by a ‘rule of reason’ and only necessitates that the CEQA document set forth those alternatives necessary to permit a reasoned choice. The key issue is whether the selection and discussion of alternatives fosters informed decision making and public participation. A CEQA document need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative. In addition, South Coast AQMD’s certified regulatory program pursuant to Public Resources Code Section 21080.5, CEQA Guidelines Section 15125(l), and South Coast AQMD Rule 110 does not impose any greater requirements for a discussion of project alternatives in a SEA than is required for an EIR under CEQA.

## 5.1 METHODOLOGY FOR DEVELOPING PROJECT ALTERNATIVES

The alternatives typically included in CEQA documents for proposed South Coast AQMD rules, regulations, or plans are developed by breaking down the project into distinct components (e.g., emission limits, compliance dates, applicability, exemptions, pollutant control strategies, etc.) and varying the specifics of one or more of the components. Different compliance approaches that generally achieve the objectives of the project may also be considered as project alternatives. CEQA Guidelines Section 15126.6(b) states that the purpose of alternatives is to identify ways to mitigate or avoid significant effects that a project may have on the environment.

The initial analysis of the proposed project determined that, of the amendments proposed, only the components in PAR 1168 that pertain to the proposed revisions to the VOC limits for certain categories of adhesives and sealants, and the delayed effective dates could have potentially significant adverse air quality impacts during operation. As such, alternatives to the proposed project were crafted by varying the VOC limits and/or varying the corresponding effective dates for certain categories of adhesives and sealants.

## 5.2 DESCRIPTION OF ALTERNATIVES TO THE PROPOSED PROJECT

Four alternatives to the proposed project are summarized in Table 5-1: Alternative A – No Project, Alternative B – More Stringent Proposed Project, Alternative C – Less Stringent Proposed Project, and Alternative D – Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168. The primary components of the proposed alternatives which have been modified are effective dates and the manner in which compliance with the VOC emission limits in PAR 1168 or in current version of Rule 1168 may be achieved. Unless otherwise specifically noted, all other components of the project alternatives are identical to the components of the proposed project.

The following subsections provide a brief description of the alternatives.

### 5.2.1 Alternative A – No Project

CEQA requires the specific alternative of “No Project” to be evaluated. A No Project Alternative consists of what would occur if the proposed project (PAR 1168) was not approved; in this case, not proposing amendments to Rule 1168. Alternative A, the no project alternative, means that the October 2017 version of Rule 1168 would remain in effect. Under Alternative A, adhesives, sealants, sealant primers and adhesive primers would have to comply with the VOC emission limits in the October 2017 version of Rule 1168. Moreover, under Alternative A, t-BAC and pCBtF would continue to be classified as VOC-exempt solvents and as such, could continue to be used in formulating adhesives and sealants that would be subject to the October 2017 version of Rule 1168.

### 5.2.2 Alternative B – More Stringent Proposed Project

There are some elements in PAR 1168 that could be adjusted to create a more stringent proposed project. To be more stringent would be to impose more requirements, reduce the emission standards to be achieved, or provide less flexibility or relief to those subject to PAR 1168. Under Alternative B, more stringent means the required effective date to meet the proposed VOC limits would need to occur six months earlier than the proposed project for the categories of One-Component Foam Sealant and Higher Viscosity CPVC Welding Cement while the effective date to meet the proposed VOC limit for Top and Trim Adhesive, Clear, Paintable, Immediately Water-Resistant Sealant, and Rubber Vulcanization Adhesive would need to occur 12 months earlier than PAR 1168 by January 1, 2027.

### 5.2.3 Alternative C – Less Stringent Proposed Project

By contrast to Alternative B, there are a number of elements in PAR 1168 that could be adjusted to create a less stringent proposed project. To be less stringent would be to impose fewer requirements, increase the VOC emission limits to be achieved, or provide more flexibility or relief to the adhesives and sealants subject to PAR 1168. Under Alternative C, the categories of Top and Trim Adhesive, One-Component Foam Sealant, ~~High Pressure Two-Component Foam Sealant, Low Pressure Two-Component Foam Sealant,~~ and Higher Viscosity CPVC Welding Cement, Clear, Paintable, Immediately Water-Resistant Sealant, and Rubber Vulcanization Adhesive would have an additional 12 months to meet the proposed VOC limits in PAR 1168.

### 5.2.4 Alternative D – Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168

PAR 1168 would allow higher VOC limits for certain categories of adhesives and sealants which have been identified as unable to meet the VOC limits in the October 2017 version of Rule 1168 by the effective date of January 1, 2023. Unlike the proposed project, Alternative D would require the following categories of adhesives and sealants to meet the VOC limits in the October 2017 version of Rule 1168: One-Component Foam Sealant, ~~High Pressure Two-Component Foam Sealant, Low Pressure Two-Component Foam Sealant,~~ Single Ply Roof Membrane Adhesive (including both subcategories with and without EPDM/TPO), All Other Roof Sealants, All Other Roof Adhesives, and CPVC Welding Cement for Life Safety



Systems. In addition, under Alternative D, the effective date would be postponed by seven years from January 1, 2023 to January 1, 2030, providing industries with sufficient additional time to meet the VOC limits.

## 5.3 ALTERNATIVES ANALYSIS

Each key component of PAR 1168 has been identified to only affect operational air quality. As such, for this alternatives analysis, the key components with the potential to create operational air quality impacts are evaluated for each alternative and compared to the effects of PAR 1168. Therefore, the following section describes the potential operational air quality impacts that may occur for each alternative and identifies which of the key components may have significant or less than significant impacts, as applicable. Potentially significant adverse operational air quality impacts are quantified where sufficient data are available. A comparison of the environmental impacts for each project alternative is provided in Table 5-2. The following subsections also re-summarize impacts and significance conclusions from the proposed project before discussing each alternative.

### 5.3.1 Air Quality and Greenhouse Gas Emissions

#### 5.3.1.1 Proposed Project

Potential direct and indirect air quality and GHG emissions impacts from the proposed project are summarized in the following subsection. For the complete analysis, refer to Section 4.1 - Air Quality and Greenhouse Gas Emissions.

As explained previously, PAR 1168 is not expected to require physical changes or modifications that would involve construction activities. Furthermore, the types of chemicals that are used for manufacturing adhesives and sealants subject to Rule 1168 are not known to contain any GHG compounds and any future reformulations with GHG compounds as a result of implementing PAR 1168 would not be expected. Therefore, PAR 1168 would neither generate significant adverse construction air quality impact nor generate GHG impacts during construction or operation.

PAR 1168 proposes to delay the effective dates or revise the VOC limits for certain categories of Regulated Products and these proposed changes are considered operational activities which are expected to generate significant air quality impacts. Implementation of PAR 1168 is expected to result in 0.41 ~~0.44~~ tpd of delayed VOC emission reductions from the categories of Top and Trim Adhesive, ~~and~~ Higher Viscosity CPVC Welding Cement, Clear, Paintable, Immediately Water-Resistant Sealant, and Rubber Vulcanization Adhesive from extending the effective date to meet the applicable VOC limits from the October 2017 version of Rule 1168. An additional 0.01 tpd of delayed VOC emission reductions are expected from delaying the effective date to comply with the proposed VOC limit (18 percent VOC by weight) for One-Component Foam Sealant -for six months. In total, PAR 1168 is expected to result in 0.42 ~~0.42~~ tpd of delayed VOC emission reductions foregone.

PAR 1168 is also expected to result in 0.28 tpd of permanent VOC emission reductions foregone from allowing higher VOC limits for the following categories of adhesives and

sealants: One-Component Foam Sealant, CPVC Welding Cement for Life Safety Systems, All Other Roof Adhesives, Single Ply Roof Membrane Adhesive (including both subcategories with and without EPDM/TPO), and All Other Roof Sealants.

#### 5.3.1.2 Alternative A – No Project

Under Alternative A, manufacturers would be allowed to continue to formulate adhesives and sealants for sale and use within South Coast AQMD's jurisdiction that meet the VOC limits established in the October 2017 version of Rule 1168. Compliance with these VOC limits was projected to result in approximately 1.38 tpd of VOC emission reductions. However, manufacturers of certain adhesives and sealants have indicated that they need more time to develop compliant products or cannot meet the applicable VOC limits by the January 1, 2023 effective date due to technological limitations, creating potential compliance issues, and likely resulting in the originally projected VOC emission reductions not being fully achieved.

Moreover, under Alternative A, t-BAC and pCBtF would continue to be classified as VOC-exempt solvents and as such, could continue to be used in formulating adhesives and sealants that would be subject to the October 2017 version of Rule 1168 and manufacturers would have the opportunity in the future to develop additional products formulated with these toxic compounds. Thus, under Alternative A, the potential for new formulations of adhesives and sealants containing t-BAC and pCBtF could increase the existing toxicity impacts and associated health risks compared to PAR 1168, which would eliminate the existing and future toxicity impacts through the prohibition of products formulation with t-BAC and pCBtF.

#### 5.3.1.3 Alternative B – More Stringent Proposed Project

PAR 1168 proposes revisions to the VOC limits and corresponding effective dates for certain categories of adhesives and sealants which are based on the recommendations from the technology assessment that was conducted and Alternative B proposes the same VOC limits but with earlier effective dates for the following categories of adhesives and sealants: Top and Trim Adhesive (by January 1, 2027 instead of January 1, 2028), One-Component Foam Sealant (by January 1, 2023 instead of July 1, 2023), ~~and~~ Higher Viscosity CPVC Welding Cement (January 1, 2024 instead of July 1, 2024), Clear, Paintable, Immediately Water-Resistant Sealant (January 1, 2025 instead of January 1, 2026), and Rubber Vulcanization Adhesive (by January 1, 2027 instead of January 1, 2028). When compared to PAR 1168, Alternative B may be infeasible at worst or difficult to achieve at best due to technological limitations and time constraints associated with developing and testing new formulations prior to making them commercially available for use.

Alternative B would result in 0.42 ~~0.42~~ tpd VOC of delayed emission reductions foregone, but the delay would be for a shorter period of time (i.e., six to 12 months less) when compared to PAR 1168. Alternative B, however, would result in the same amount of permanent VOC emission reductions foregone (0.28 tpd) as PAR 1168. Thus, Alternative B would result in significant operational air quality impacts.

Since the analysis concluded that there would be no significant impacts on construction air quality and construction/operation GHG emissions for PAR 1168, and since Alternative B is

only focused on imposing more stringent compliance dates than what would occur under PAR 1168, Alternative B would also be expected to have no significant impacts on construction air quality and construction/operation GHG emissions.

#### 5.3.1.4 Alternative C – Less Stringent Proposed Project

Alternative C adjusts some elements in PAR 1168 to create a less stringent proposed project by further delaying the potential to achieve VOC emission reductions to the fullest extent possible. Specifically, Alternative C proposes delayed effective dates by one year for the following categories of adhesives and sealants: Top and Trim Adhesive (by January 1, 2029 instead of January 1, 2028), One-Component Foam Sealant (by July 1, 2024 instead of July 1, 2023), ~~High-Pressure Two-Component Foam Sealant (by January 1, 2024 instead of January 1, 2023), Low-Pressure Two-Component Foam Sealant (by January 1, 2024 instead of January 1, 2023) and~~ Higher Viscosity CPVC Welding Cement (by July 1, 2025 instead of July 1, 2024), Clear, Paintable, Immediately Water-Resistant Sealant (by January 1, 2027 instead of January 1, 2026), and Rubber Vulcanization Adhesive (by January 1, 2029 instead of January 1, 2028) to comply with the same proposed VOC limits as in PAR 1168. Alternative C would result in 0.42 ~~0.42~~-tpd of delayed VOC emission reductions foregone, the same as PAR 1168, but the delay would occur over a longer period of time (e.g., twelve months longer) when compared to the proposed project. Alternative C, however, would result in the same amount of permanent foregone VOC emission reductions (0.28 tpd) as PAR 1168. Thus, Alternative C would result in significant operational air quality impacts.

Since the analysis concluded that there would be no significant impacts on construction air quality and construction/operation GHG emissions for PAR 1168, and since Alternative C is only focused on imposing less stringent compliance dates than what would occur under PAR 1168, Alternative C would also be expected to have no significant impacts on construction air quality and construction/operation GHG emissions.

#### 5.3.1.5 Alternative D – Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168

Alternative D proposes that the following categories of adhesives and solvents would meet the VOC limits in the October 2017 version of Rule 1168, but with an effective date of January 1, 2030 instead of January 1, 2023: One-Component Foam Sealant, ~~High-Pressure Two-Component Foam Sealant, Low-Pressure Two-Component Foam Sealant,~~ Single Ply Roof Membrane Adhesive (including both subcategories with and without EPDM/TPO), All Other Roof Sealants, All Other Roof Adhesives, and CPVC Welding Cement for Life Safety Systems. Unlike PAR 1168, Alternative D would only result in delayed VOC emission reductions foregone of 0.70 ~~0.40~~-tpd, without resulting in any permanent VOC emission reductions foregone because manufacturers will have an additional seven years to develop and formulate adhesives and sealants for the aforementioned categories that will be capable of meeting the VOC limits from the October 2017 version of Rule 1168. Thus, Alternative D would result in significant operational air quality impacts.

Since the analysis concluded that there would be no significant impacts on construction air quality and construction/operation GHG emissions for PAR 1168, and since Alternative D is

only focused on imposing less stringent compliance dates than what would occur under PAR 1168, Alternative D would also be expected to have no significant impacts on construction air quality and construction/operation GHG emissions.

## **5.4 COMPARISON OF ALTERNATIVES TO THE PROPOSED PROJECT**

Pursuant to CEQA Guidelines Section 15126.6(d), a CEQA document “shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project.” A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.” Accordingly, Table 5-1 provides a matrix displaying the major differences in characteristics between the proposed project and each alternative, and Table 5-2 compares the environmental impacts between the proposed project and each alternative.

**Table 5-1**  
**Summary of the Proposed Project (PAR 1168) and Alternatives**

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
<b>Top and Trim Adhesive</b>	No change to existing 250 g/L limit but extend effective date to 1/1/2028	250 g/L by 1/1/2023	250 g/L by 1/1/2027	250 g/L by 1/1/2029	Same as Proposed Project
<b>One-Component Foam Sealant (new subcategory)</b>	18% VOC by weight, and extend effective date to 7/1/2023	50 g/L by 1/1/2023 (for general category of Foam Sealant in the October 2017 version of Rule 1168)	18% VOC by weight by 1/1/2023	18% VOC by weight by 7/1/2024	50 g/L by 1/1/2030
<b>High-Pressure Two-Component Foam Sealant (new subcategory)</b>	5% VOC by weight by 1/1/2023	50 g/L by 1/1/2023 (for general category of Foam Sealant in the October 2017 version of Rule 1168)	Same as Proposed Project	5% VOC by weight by 1/1/2024	50 g/L by 1/1/2030
<b>Low-Pressure Two-Component Foam Sealant (new subcategory)</b>	5% VOC by weight by 1/1/2023		Same as Proposed Project	5% VOC by weight by 1/1/2024	
<b>Single Ply Roof Membrane Adhesive (including new subcategories of with and without EPDM/TPO)</b>	250 g/L, effective upon adoption	200 g/L by 1/1/2023	Same as Proposed Project	Same as Proposed Project	200 g/L by 1/1/2030
<b>All Other Roof Sealants</b>	300 g/L, effective upon adoption	250 g/L by 1/1/2023	Same as Proposed Project	Same as Proposed Project	250 g/L by 1/1/2030
<b>All Other Roof Adhesives</b>	250 g/L limit, effective upon adoption	200 g/L by 1/1/2023	Same as Proposed Project	Same as Proposed Project	200 g/L by 1/1/2030

**Table 5-1 (continued)**  
**Summary of the Proposed Project (PAR 1168) and Alternatives**

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
<b>CPVC Welding Cement for Life Safety Systems (new subcategory)</b>	490 g/L, effective upon adoption	400 g/L by 1/1/2023 (for general category of CPVC Welding Cement in the October 2017 version of Rule 1168)	Same as Proposed Project	Same as Proposed Project	400 g/L by 1/1/2030
<b>Higher Viscosity CPVC Welding Cement (new subcategory)</b>	No change to existing 400 g/L limit but extend effective date to 7/1/2024	400 g/L by 1/1/2023 (for general category of CPVC Welding Cement in the October 2017 version of Rule 1168)	400 g/L limit by 1/1/2024	400 g/L limit by 7/1/2025	Same as Proposed Project
<b><u>Clear, Paintable, Immediately Water-Resistant Sealant</u></b>	<u>No change to existing 250 g/L limit but extend effective date to 1/1/2026</u>	<u>250 g/L by 1/1/2023</u>	<u>250 g/L by 1/1/2025</u>	<u>250 g/L by 1/1/2027</u>	<u>Same as Proposed Project</u>
<b><u>Rubber Vulcanization Adhesive</u></b>	<u>No change to existing 250 g/L limit but extend effective date to 1/1/2028</u>	<u>250 g/L by 1/1/2023</u>	<u>250 g/L by 1/1/2027</u>	<u>250 g/L by 1/1/2029</u>	<u>Same as Proposed Project</u>

**Table 5-1 (continued)**  
**Summary of the Proposed Project (PAR 1168) and Alternatives**

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
<b>Prohibition of Sales and Use</b>	<p>No use, supply, sell, or offer for sale of <u>Regulated Products that contain more than 0.01% by weight of the following:</u> chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene, <del>or and all</del> <u>Group II exempt compounds solvents except volatile methyl siloxanes (VMS)</u></p> <p>Prohibit the use of <del>t-BAC and pCBtF</del> in manufacturing <u>Regulated Products</u> on and after 1/1/2024 <del>(except for:</del>  —Single Ply Roof Membrane  —Adhesive (except EPDM/TPO),  <u>Single Ply Roof Membrane Sealants (Except Cut Edge), All Other Roof Sealants, and Roof Sealant Primer with a manufacturing prohibition effective date on and after of 1/1/2025</u>  —Clear, Paintable, and Immediately <u>Water Resistant Sealant with a prohibition date of 1/1/2026</u>  —Roof Adhesive Primer, Cut Edge Single Ply Roof Membrane Sealant, and EPDM/TPO Single Ply Roof Membrane Adhesive with <u>a prohibition effective date of 1/1/2027</u></p>	<p>No use, supply, sell, or offer for sale of Group II exempt compounds</p> <p>No prohibition on manufacture, supply, use, sell. or offer for sale of t-BAC and pCBtF</p>	Same as Proposed Project	Same as Proposed Project	Same as Proposed Project

**Table 5-1 (concluded)**  
**Summary of the Proposed Project (PAR 1168) and Alternatives**

Categories with Proposed Changes	Proposed Project (PAR 1168)	Alternative A: No Project*	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
<b>Prohibition of Sales and Use (concluded)</b>	<p>Prohibit the use of t-BAC in <u>manufacturing Regulated Products on and after 1/1/2024</u></p> <p>Prohibit supply, sell, or offer for sale of <u>Regulated Products containing pCBtF on and after:</u></p> <ul style="list-style-type: none"> <li>- <u>1/1/2028 for Clear, Paintable, and Immediately Water-Resistant Sealant, Single Ply Roof Membrane Adhesive (Except EPDM/TPO), Single Ply Roof Membrane Sealant (Except Cut Edge), EPDM/TPO Single Ply Roof Membrane Adhesive, Cut Edge Single Ply Roof Membrane Sealant, Roof Adhesive Primer, Roof Sealant Primer, and All other Roof Sealant</u></li> <li>- <u>1/1/2027 for all Regulated Products not listed above.</u></li> </ul> <p>Prohibit supply, sell, or offer for sale of <u>Regulated Products containing t-BAC and pCBtF three years after manufacturing prohibition effective date on and after 1/1/2027 for all Regulated Products.</u></p> <p>Prohibit use of <u>Regulated Products containing t-BAC and pCBtF on and after 1/1/2028 for all Regulated Productsfour years after manufacturing prohibition effective date</u></p>	<p>No use, supply, sell, or offer for sale of Group II exempt compounds</p> <p>No prohibition on manufacture, supply, use, sell, or offer for sale of t-BAC and pCBtF</p>	Same as Proposed Project	Same as Proposed Project	Same as Proposed Project

\*The No Project alternative means retaining the VOC limits and effective dates as established in the October 2017 version of Rule 1168.



**Table 5-2**  
**Comparison of Adverse Environmental Impacts of the Proposed Project (PAR 1168) and Alternatives**

<b>Air Quality &amp; GHGs Impact Areas</b>	<b>Proposed Project (PAR 1168)</b>	<b>Alternative A: No Project</b>	<b>Alternative B: More Stringent Proposed Project</b>	<b>Alternative C: Less Stringent Proposed Project</b>	<b>Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168</b>
<b>Construction</b>	<b>No Significant Impacts</b> because no physical modifications involving construction required	<b>No Significant Impacts</b> Same as Proposed Project	<b>No Significant Impacts</b> Same as Proposed Project	<b>No Significant Impacts</b> Same as Proposed Project	<b>No Significant Impacts</b> Same as Proposed Project
<b>GHGs</b>	<b>No Significant Impacts</b> because chemicals used for reformulating compliant products do not contain any GHG compounds, <u>except for Two-Component Foam Sealants which use foam blowing agents that contain HFOs, which are GHGs with a low GWP. Under PAR 1168, Opteon 1100 may be used as a replacement (contingent upon OEHHA's assessment for toxicity concerns) but it also uses a foam blowing agent with a low GWP.</u>	<b>No Significant Impacts</b> Same as Proposed Project	<b>No Significant Impacts</b> Same as Proposed Project	<b>No Significant Impacts</b> Same as Proposed Project	<b>No Significant Impacts</b> Same as Proposed Project

**Table 5-2 (continued)**  
**Comparison of Adverse Environmental Impacts of the Proposed Project (PAR 1168) and Alternatives**

Air Quality & GHGs Impact Areas	Proposed Project (PAR 1168)	Alternative A: No Project	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Operation – VOC Emissions	<p><b>Potentially Significant VOC Impacts</b> due to:</p> <ol style="list-style-type: none"> <li>1) Delayed VOC emission reductions of <u>0.42 0.42</u>-tpd from:               <ol style="list-style-type: none"> <li>a) Top and Trim Adhesive - 0.1 tpd until 1/1/2028</li> <li>b) One-Component Foam Sealant - 0.01 tpd until 7/1/2023</li> <li>c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 7/1/2024</li> <li>d) <u>Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 tpd until 1/1/2026</u></li> <li>e) <u>Rubber Vulcanization Adhesive - 0.29 tpd until 1/1/2028</u></li> </ol> </li> <li>2) Permanent VOC emission reductions foregone of 0.28 tpd from:               <ol style="list-style-type: none"> <li>a) One-Component Foam Sealant - 0.12 tpd</li> <li>b) CPVC Welding Cement for Life Safety Systems - 0.01 tpd</li> <li>c) All Other Roof Adhesives - 0.03 tpd</li> <li>d) Single Ply Roof Membrane Adhesive (<u>including both subcategories of with and without EPDM/TPO</u>) ~ 0.07 tpd</li> <li>e) All Other Roof Sealants - 0.05 tpd</li> </ol> </li> </ol>	<p><b>No Significant VOC Impacts</b> due to 1.38 tpd VOC permanent emission reductions</p>	<p><b>Potentially Significant VOC Impacts</b> due to:</p> <ol style="list-style-type: none"> <li>1) Same delayed VOC emission reductions of <u>0.42 0.42</u>-tpd but over a shorter period from:               <ol style="list-style-type: none"> <li>a) Top and Trim Adhesive - 0.1 tpd until 1/1/2027</li> <li>b) One-Component Foam Sealant - 0.01 tpd until 1/1/2023</li> <li>c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 1/1/2024</li> <li>d) <u>Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 tpd until 1/1/2025</u></li> <li>e) <u>Rubber Vulcanization Adhesive - 0.29 tpd until 1/1/2027</u></li> </ol> </li> <li>2) Permanent VOC emission reductions foregone of 0.28 tpd - Same as Proposed Project.</li> </ol>	<p><b>Potentially Significant VOC Impacts</b> due to:</p> <ol style="list-style-type: none"> <li>1) Same delayed VOC emission reductions of <u>0.42 0.42</u>-tpd but over a longer period from:               <ol style="list-style-type: none"> <li>a) Top and Trim Adhesive - 0.1 tpd until 1/1/2029</li> <li>b) One-Component Foam Sealant - 0.01 tpd until 7/1/2024</li> <li>c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 7/1/2025</li> <li>d) <u>Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 tpd until 1/1/2027</u></li> <li>e) <u>Rubber Vulcanization Adhesive - 0.29 tpd until 1/1/2029</u></li> </ol> </li> <li>2) Permanent VOC emission reductions foregone of 0.28 tpd - Same as Proposed Project</li> </ol>	<p><b>Potentially Significant VOC Impacts</b> due to:</p> <ol style="list-style-type: none"> <li>1) Greater delayed VOC emission reductions of <u>0.70 0.40</u>-tpd over a longer period from:               <ol style="list-style-type: none"> <li>a) Top and Trim Adhesive - 0.1 tpd until 1/1/2028</li> <li>b) <del>One-Component Foam Sealant (One-Component and Two-Component) - 0.13 tpd until 1/1/2030</del></li> <li>c) Higher Viscosity CPVC Welding Cement - 0.01 tpd until 7/1/2024</li> <li>d) CPVC Welding Cement for Life Safety Systems - 0.01 tpd until 1/1/2030</li> <li>e) All Other Roof Adhesives – 0.03 tpd until 1/1/2030</li> <li>f) Single Ply Roof Membrane Adhesive (<u>including both subcategories of with and without EPDM/TPO</u>) – 0.07 tpd until 1/1/2030</li> <li>g) All Other Roof Sealants: 0.05 tpd until 1/1/2030</li> <li>h) <u>Clear, Paintable, Immediately Water-Resistant Sealant - 0.007 until 1/1/2026</u></li> <li>i) <u>Rubber Vulcanization Adhesive – 0.29 tpd until 1/1/2028</u></li> </ol> </li> <li>3) No permanent VOC emission reductions foregone</li> </ol>

**Table 5-2 (concluded)**  
**Comparison of Adverse Environmental Impacts of the Proposed Project (PAR 1168) and Alternatives**

Air Quality & GHGs Impact Areas	Proposed Project (PAR 1168)	Alternative A: No Project	Alternative B: More Stringent Proposed Project	Alternative C: Less Stringent Proposed Project	Alternative D: Extended Effective Dates for VOC Limits in October 2017 Version of Rule 1168
Operation – Toxicity and Odor Nuisance	Less than Significant Toxicity and Odor Nuisance Impacts due to reduced toxicity and odor profile from prohibition of t-BAC and pCBtF.	<p>Potentially Significant Toxicity Impacts from ongoing existing toxicity impacts due to no prohibition on t-BAC and pCBtF despite their carcinogenic and acute health effects.</p> <p>Less than significant odor nuisance impacts.</p>	<p>Less than Significant Toxicity Impacts due to reduced toxicity and odor profile from prohibition of t-BAC and pCBtF - Same as Proposed Project.</p> <p>Less than significant odor nuisance impacts - Same as Proposed Project.</p>	<p>Less than Significant Toxicity Impacts due to reduced toxicity and odor profile from prohibition of t-BAC and pCBtF - Same as Proposed Project.</p> <p>Less than significant odor nuisance impacts - Same as Proposed Project.</p>	Less than Significant Toxicity and Odor Nuisance Impacts due to reduced toxicity and odor profile from prohibition of t-BAC and pCBtF - Same as Proposed Project.

## 5.5 ALTERNATIVES REJECTED AS INFEASIBLE

In accordance with CEQA Guidelines Section 15126.6(c), a CEQA document should identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Section 15126.6(c) also states that among the factors that may be used to eliminate alternatives from detailed consideration in a CEQA document are: 1) failure to meet most of the basic project objectives; 2) infeasibility; or 3) inability to avoid significant environmental impacts.

As noted in Section 5.1, the range of feasible alternatives to the proposed project is limited by the nature of PAR 1168 and associated legal requirements. Similarly, the range of alternatives considered, but rejected as infeasible is also relatively limited. This subsection identifies Alternative A, as being rejected due to infeasibility, for the reasons explained in the following discussion.

### 5.5.1 Alternative A - No Project

CEQA documents typically assume that the adoption of a No Project alternative would result in no further action on the part of the project proponent or lead agency. For example, in the case of a proposed land use project such as a housing development, adopting the No Project alternative terminates further consideration of that housing development or any housing development alternative identified in the associated CEQA document. In that case, the existing setting would typically remain unchanged.

However, by not adopting PAR 1168, Alternative A would require certain categories of adhesives and sealants to meet the VOC limits established in the October 2017 version of Rule 1168 by the effective date of January 1, 2023 even though the technology assessment concluded that it is technologically infeasible to do so. Thus, implementation of Alternative A would create potential compliance issues for some categories of adhesives and sealants because manufacturers and distributors would be prevented from supplying products containing higher quantities of VOCs to consumers for use in South Coast AQMD's jurisdiction.

The main objectives of the proposed project are to: 1) adjust the VOC limits and effective dates so that they are technologically feasible according to the technology assessment conducted for nine categories of adhesives and sealants; and 2) reduce the potential toxicity of product formulations and their associated health impacts by prohibiting the use of t-BAC and pCBtF.

Alternative A is rejected as infeasible because it neither meets the objectives of the project nor takes into consideration the conclusions of the technology assessment and the Stationary Source Committee's direction to take a precautionary approach evaluating existing or proposed exemptions for any compound with a toxic endpoint.

## 5.6 LOWEST TOXIC AND ENVIRONMENTALLY SUPERIOR ALTERNATIVE

### 5.6.1 Lowest Toxic Alternative

In accordance with South Coast AQMD's policy document: Environmental Justice Program Enhancements for FY 2002-03, Enhancement II-1 recommends for all South Coast AQMD CEQA documents which are required to include an alternatives analysis, the alternative analysis shall also include and identify a feasible project alternative with the lowest air toxics emissions. In other words, for any major equipment or process type under the scope of the proposed project that creates a significant environmental impact, at least one alternative, where feasible, shall be considered from a "least harmful" perspective with regard to hazardous or toxic air contaminants.

Relative to toxic air contaminants, some manufacturers of adhesives and sealants currently use compounds in their product formulations that are VOCs but that also may be considered a toxic air contaminant (e.g., benzene, toluene, ethylbenzene and xylene). For any formulations that contain any toxic compounds that are also classified as a VOC, the VOC limits in the October 2017 version Rule 1168, PAR 1168 and the alternatives serve to limit the overall toxicity of product formulations. However, other toxics, such as t-BAC and pCBtF, which are currently exempt from the definition of what qualifies as a VOC as set forth in Rule 102, if relied upon to reformulate products capable of meeting particular VOC limits, could result in a formulation with a low VOC content but a high toxicity. This is especially true if t-BAC or pCBtF ~~are~~is relied upon as a non-VOC substitute because these compounds are both carcinogenic with very high cancer potency factors.

While the purpose of Rule 1168 is to minimize VOC emissions from adhesive and sealant products, because of toxicity concerns associated with t-BAC and pCBtF, PAR 1168 and Alternatives B, C and D propose to prohibit the use of t-BAC and pCBtF so as to also minimize consumer exposure to air toxics during the application of adhesives and sealants

Alternative A would allow manufacturers of adhesives and sealants to continue to develop and provide products formulated with t-BAC and pCBtF even though these compounds are toxic and their use could contribute to adverse health effects. Thus, of all of the project alternatives, Alternative A is the most harmful relative to toxic air contaminants. On the other hand, PAR 1168 and Alternatives B, C, and D are equally beneficial in terms of reducing the public exposure to acute and carcinogenic toxic impacts of t-BAC and pCBtF due to prohibiting their usage in adhesives and sealants ~~after January 1, 2024, except for Single Ply Roof Membrane Adhesives for which the prohibition of pCBtF would be effective January 1, 2025.~~

Additionally, Alternative D would specifically allow seven more years for certain categories of adhesives and sealants which currently are technologically unable to meet the VOC limits in the October 2017 version of Rule 1168 by January 1, 2023 to meet the same VOC limits by January 1, 2030 instead. Under Alternative D, manufacturers would be required to reformulate certain categories of adhesives and sealants with overall lower VOC emissions and potentially fewer toxic compounds in the long-term.

Thus, when considering all of the alternatives from toxic impacts perspective, Alternative D is the lowest toxic alternative because certain categories of adhesives and sealants will need to be reformulated to have lower VOC contents with fewer toxic compounds by January 1, 2030.

### 5.6.2 Environmentally Superior Alternative

Pursuant to CEQA Guidelines Section 15126.6(e)(2), if the environmentally superior alternative is the No Project alternative, the CEQA document shall also identify an alternate environmentally superior alternative from among the other alternatives.

Alternative A is equivalent to the October 2017 version of Rule 1168, which was originally expected to result in 1.38 tpd of VOC emission reductions. However, the technological infeasibility of certain categories of adhesives and solvents being able to meet the VOC limits means that the actual VOC emission reductions achieved would be fewer than originally projected. Also, as explained in Section 5.6.1, Alternative A (No Project) is the most harmful alternative because it would allow manufacturers of adhesives and sealants to continue to develop and provide products formulated with t-BAC and pCBtF even though these compounds are toxic, and their use could contribute to adverse health effects. Based upon these considerations, Alternative A is not the environmentally superior alternative.

Of the remaining alternatives, Alternatives B and C were concluded to have the same quantity of permanent VOC emission reductions foregone as PAR 1168 (0.28 tpd). Unlike Alternatives B and C, Alternative D is not expected to cause any permanent VOC emission reductions foregone because Alternative D would specifically allow seven more years for certain categories of adhesives and sealants which currently are technologically unable to meet the VOC limits in the October 2017 version of Rule 1168 by January 1, 2023 to meet the same VOC limits by January 1, 2030 instead.

Alternative D was concluded to have a larger quantity of delayed VOC emission reductions foregone (0.70 ~~0.40~~ tpd) over a longer period of time (e.g., seven years) when compared to Alternatives B and C which were concluded to have the same quantity of delayed VOC emission reductions foregone (0.42 ~~0.12~~ tpd). Under Alternative B, the delay would occur over a shorter period of time (i.e., six to twelve months) while the delay for Alternative C would occur over a longer period of time (i.e., twelve months) when compared to PAR 1168.

Over the long-term, since Alternative D would result in no permanent VOC emission reductions foregone with the least amount of potential for adhesives and sealant to be formulated with toxic compounds, relative to PAR 1168 and the other feasible alternatives, Alternative D would be considered the environmentally superior alternative.

## 5.7 CONCLUSION

As discussed previously, Alternative A was dismissed as infeasible because it would not fulfill the objectives of PAR 1168. Alternatives B and C would both be expected to generate equivalent delayed and permanent VOC emission reductions foregone, but with varying timelines, and similar benefits when it comes to reducing the overall toxicity of adhesive and sealant formulations. When compared to PAR 1168, Alternative B would delay 0.42 ~~0.12~~ tpd of VOC emission reductions foregone over a shorter period of time (e.g., six to twelve months earlier) while Alternative C

would delay ~~0.42~~ 0.12 tpd of VOC emission reductions foregone over a longer period of time (e.g., twelve months later). Unlike PAR 1168 and Alternatives B, and C, Alternative D would not result in any permanent VOC emission reductions foregone and with the least amount of potential for adhesives and sealant to be formulated with toxic compounds, relative to PAR 1168 and the other feasible alternatives. Due to uncertainties associated with the ability of manufacturers to formulate certain categories of adhesives and sealants to meet the low VOC limits established in the October 2017 version of Rule 1168 by January 1, 2030, Alternative D depends on future technological improvements in order to achieve the desired VOC emission reductions and the outcome of these future efforts are unknown. **Thus, when comparing the environmental effects of the project alternatives with PAR 1168 and evaluating the effectiveness of achieving the project objectives, the proposed project provides the best balance in achieving the project objectives while minimizing the significant adverse environmental impacts to operational air quality.**

## **CHAPTER 6**

---

## **REFERENCES**



## 6.0 References

The following list of references is presented by chapter, in order of appearance:

### Chapter 1 – Executive Summary

1. The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., Ch. 324 (codified at Health and Safety Code Section 40400-40540).
2. CEQA Guidelines, Title 14 California Code of Regulations Section 15000 et seq.
3. Health and Safety Code Section 40460(a).
4. Health and Safety Code Section 40440(a).
5. South Coast AQMD, 2017. Final 2016 Air Quality Management Plan, March 2017. <https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp>
6. South Coast AQMD, 2017. Final Environmental Assessment (EA) for Proposed Amended Rule (PAR) 1168 – Adhesive and Sealant Applications, SCH No. 2017081031. <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2017/par1168FEA.pdf>

### Chapter 3 – Existing Setting

1. U.S. EPA, 2020. Criteria Air Pollutants. <https://www.epa.gov/criteria-air-pollutants>, accessed on June 10, 2022.
2. South Coast AQMD. 2015. Health Effects of Air Pollution. <http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf>, accessed on June 10, 2022.
3. South Coast AQMD, 2005. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. <https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document>, accessed on June 10, 2022.
4. South Coast AQMD, 2021. 2020 Air Quality - South Coast Air Quality Management District – CO, Historical Air Quality Data for Year 2020 at locations where CO was monitored; [http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card\\_final.pdf](http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf), accessed on June 10, 2022.
5. U.S. EPA, 2020. Criteria Air Pollutants <https://www.epa.gov/criteria-air-pollutants>, accessed on June 10, 2022.
6. South Coast AQMD, 2015. Health Effects of Air Pollution. <http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf>, accessed on June 10, 2022.
7. South Coast AQMD, 2005. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. <https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document>, accessed on June 10, 2022.

8. South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where O3 was monitored; [http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card\\_final.pdf](http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf), accessed on June 10, 2022.
9. U.S. EPA, 2020. Criteria Air Pollutants, <https://www.epa.gov/criteria-air-pollutants>, accessed on June 10, 2022.
10. South Coast AQMD, 2015. Health Effects of Air Pollution. <http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf>, accessed on June 10, 2022.
11. South Coast AQMD, 2005. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. <https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document>
12. South Coast AQMD, 2022. 2022 Draft Air Quality Management Plan, p. 2-49. <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/05-ch2.pdf>
13. South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where NO2 was monitored; [http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card\\_final.pdf](http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf), accessed on June 10, 2022.
14. U.S. EPA, 2020. Criteria Air Pollutants, <https://www.epa.gov/criteria-air-pollutants>, accessed on June 10, 2022.
15. South Coast AQMD, 2015. Health Effects of Air Pollution. <http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf>, accessed on June 10, 2022.
16. South Coast AQMD, 2005. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. <https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document>, accessed on June 10, 2022.
17. South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where SO2 was monitored; [http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card\\_final.pdf](http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf), accessed on June 10, 2022.
18. U.S. EPA, 2020. Criteria Air Pollutants, <https://www.epa.gov/criteria-air-pollutants>, accessed on June 10, 2022.
19. South Coast AQMD, 2015. Health Effects of Air Pollution. <http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf>, accessed on June 10, 2022.
20. South Coast AQMD, 2005. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning.

- <https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document>, accessed on June 10, 2022.
21. South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where PM10 was monitored; [http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card\\_final.pdf](http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf), accessed on June 10, 2022.
  22. South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where PM2.5 was monitored; [http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card\\_final.pdf](http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf), accessed on June 10, 2022.
  23. U.S. EPA, 2020. Criteria Air Pollutants, <https://www.epa.gov/criteria-air-pollutants>, accessed on June 10, 2022.
  24. South Coast AQMD, 2015. Health Effects of Air Pollution. <http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf>, accessed on June 10, 2022.
  25. South Coast AQMD, 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. <https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document>, accessed on June 10, 2022.
  26. South Coast AQMD, 2021. 2020 Air Quality, South Coast Air Quality Management District, Historical Air Quality Data for Year 2020 at locations where lead and sulfates were monitored; [http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card\\_final.pdf](http://www.aqmd.gov/docs/default-source/air-quality/historical-data-by-year/aq2020card_final.pdf).
  27. U.S. EPA, 2020. Criteria Air Pollutants, <https://www.epa.gov/criteria-air-pollutants>, accessed on June 10, 2022.
  28. South Coast AQMD, 2015. Health Effects of Air Pollution. <http://www.aqmd.gov/docs/default-source/publications/brochures/the-health-effects-of-air-pollution-brochure.pdf>, accessed on June 10, 2022.
  29. South Coast AQMD, 2005. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. <https://www.aqmd.gov/home/research/guidelines/planning-guidance/guidance-document>, accessed on June 10, 2022.
  30. International Agency for Research on Cancer. Vinyl Chloride Exposure Data, <https://monographs.iarc.who.int/wp-content/uploads/2018/06/mono100F-31.pdf>, accessed on June 10, 2022.
  31. South Coast AQMD, MATES V, Multiple Air Toxics Exposure Study in the South Coast AQMD, Final Report, August 2021. <http://www.aqmd.gov/docs/default-source/planning/mates-v/mates-v-final-report.pdf>, accessed on June 10, 2022.
  32. Jacobsen, Mark Z. “Enhancement of Local Air Pollution by Urban CO2 Domes,” Environmental Science and Technology, as described in Stanford University press release on

- March 16, 2010 available at: <http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html> accessed on June 10, 2022.
33. Intergovernmental Panel on Climate Change (IPCC). 2014. Fifth Assessment Report: Climate Change 2014. New York: Cambridge University Press, [https://issuu.com/unipcc/docs/syr\\_ar5\\_final\\_full\\_wcover](https://issuu.com/unipcc/docs/syr_ar5_final_full_wcover), accessed on June 10, 2022.
34. Center for Disease Control, 2016. Climate Change Decreases the Quality of the Air We Breathe. [https://www.cdc.gov/climateandhealth/pubs/AIR-QUALITY-Final\\_508.pdf](https://www.cdc.gov/climateandhealth/pubs/AIR-QUALITY-Final_508.pdf), accessed on June 10, 2022.
35. OEHHA, 2018. Indicators of Climate Change in California. <https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf>, accessed on June 10, 2022.
36. CARB, 2022. Draft 2022 Scoping Plan Update, Figure 1-7, p. 33, <https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf>, accessed on June 10, 2022.
37. CARB, 2022. Draft 2022 Scoping Plan Update, Figure 1-8, p. 34, <https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf>, accessed on June 10, 2022.
38. U.S. EPA, 2021. EPA to Overhaul Pollution Standards for Passenger Vehicles and Heavy-Duty Trucks, Paving Way for Zero-Emission Future, News Release, August 5, 2021. <https://www.epa.gov/newsreleases/epa-overhaul-pollution-standards-passenger-vehicles-and-heavy-duty-trucks-paving-way>, accessed on June 10, 2022.
39. U.S. EPA, 2022. EPA Proposes Stronger Standards for Heavy-Duty Vehicles to Promote Clean Air, Protect Communities, and Support Transition to Zero-Emissions Future, News Release, March 7, 2022. <https://www.epa.gov/newsreleases/epa-proposes-stronger-standards-heavy-duty-vehicles-promote-clean-air-protect>, accessed on June 10, 2022.
40. The Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol) is an international treaty designed to phase out halogenated hydrocarbons such as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), which are considered ODSs. The Montreal Protocol was first signed on September 16, 1987 and has been revised seven times. The U.S. ratified the original Montreal Protocol and each of its revisions.
41. CARB, 2008. Climate Change Scoping Plan, A Framework for Change.
42. CARB, 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target, [https://www.arb.ca.gov/cc/scopingplan/2030sp\\_pp\\_final.pdf](https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf), accessed on June 10, 2022.
43. CARB, 2022. Draft 2022 Scoping Plan Update, May 10, 2022, Executive Summary, <https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf>, accessed on August 5, 2022.
44. CARB, 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target, [https://www.arb.ca.gov/cc/scopingplan/2030sp\\_pp\\_final.pdf](https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf), accessed on June 10, 2022.

45. CARB, 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target, [https://www.arb.ca.gov/cc/scopingplan/2030sp\\_pp\\_final.pdf](https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf), accessed on June 10, 2022.
46. CARB, Low-Emission Vehicle Greenhouse Gas Program, <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/lev-program/low-emission-vehicle-greenhouse-gas>, accessed on June 10, 2022.
47. CARB, 2010. Staff Report Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375.
48. CARB, 2018. SB 375 Regional Greenhouse Gas Emissions Reduction Targets [https://ww2.arb.ca.gov/sites/default/files/2020-06/SB375\\_Final\\_Targets\\_2018.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-06/SB375_Final_Targets_2018.pdf), accessed on June 10, 2022.
49. CARB, 2018. Updated Final Staff Report: Proposed Update to the SB 375 Greenhouse Gas Emissions Reduction Targets, [https://ww2.arb.ca.gov/sites/default/files/2020-06/SB375\\_Updated\\_Final\\_Target\\_Staff\\_Report\\_2018.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-06/SB375_Updated_Final_Target_Staff_Report_2018.pdf), accessed on June 10, 2022.
50. CARB, 2018. Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. [https://www.arb.ca.gov/cc/sb375/sb375\\_target\\_update\\_final\\_staff\\_report\\_feb2018.pdf](https://www.arb.ca.gov/cc/sb375/sb375_target_update_final_staff_report_feb2018.pdf), accessed on June 10, 2022.
51. SCAG, 2020. Adopted Final Connect SoCal. <https://scag.ca.gov/read-plan-adopted-final-plan>, accessed on June 10, 2022.
52. California Legislative Information, September 14, 2018, AB-2127 Electric Vehicle Charging Infrastructure: Assessment, [https://leginfo.ca.gov/faces/billTextClient.xhtml?bill\\_id=201720180AB2127](https://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB2127), accessed on June 10, 2022.
53. CEC, 2018. News Release: Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. <https://www.energy.ca.gov/news/2018-05/energy-commission-adopts-standards-requiring-solar-systems-new-homes-first>, accessed on June 10, 2022.
54. California Building Standards Commission, 2022. CalGreen as promulgated in the California Code of Regulations, Title 24, Part 11 (24 CCR Part 11). <https://www.dgs.ca.gov/BSC/CALGreen>.

#### **Chapter 4 – Environmental Impacts**

1. South Coast AQMD, 1993. CEQA Air Quality Analysis Handbook. <http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook>.
2. Jacobsen, Mark Z. “Enhancement of Local Air Pollution by Urban CO<sub>2</sub> Domes,” Environmental Science and Technology, as describe in Stanford University press release on March 16, 2010 available at: <http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html>.

## **CHAPTER 7**

---

### **ACRONYMS**

## 7.0 Acronyms

µg/m= micrograms per cubic meter

APS = Alternative Planning Strategy (APS)

AQMP = Air Quality Management Plan

ATCM = Airborne Toxic Control Measure

Basin = South Coast Air Basin

BAU = business-as-usual

CAA = Clean Air Act

CalEPA = California Environmental Protection Agency

CARB = California Air Resources Board

CCR = California Code of Regulations

CEC = California Energy Commission

CEQA = California Environmental Quality Act

CFR = Code of Federal Regulations

CH<sub>4</sub> = methane

CO = carbon monoxide

CO<sub>2</sub> = carbon dioxide

CO<sub>2</sub>eq = carbon dioxide equivalent

COHb = carboxyhemoglobin

CPR = Consumer Products Regulation

CPUC = California Public Utilities Commission

CPVC = Chlorinated Poly (Vinyl Chloride)

EA = Environmental Assessment

EIR = Environmental Impact Report

EISA = Energy Independence and Security Act

EJ = Environmental Justice

gal = gallons

GHG = greenhouse gases

GWP = global warming potential

H<sub>2</sub>S = hydrogen sulfide

H<sub>2</sub>SO<sub>4</sub> = sulfuric acid

HCFC = hydrochlorofluorocarbon

HF = hydrofluoric acid

HFC = hydrofluorocarbons

HI = hazard index

HSC = Health and Safety Code

IOUs = investor-owned utilities (IOUs)

IS = Initial Study

LCFS = Low Carbon Fuel Standard

MATES = Multiple Air Toxics Exposure Studies

MDAB = Mojave Desert Air Basin

MPOs = Metropolitan Planning Organizations

N<sub>2</sub>O = nitrous oxide

NAAQS = National Ambient Air Quality Standards

ND = Negative Declaration

NHTSA = National Highway Traffic and Safety Administration

NO = nitric oxide

NO<sub>2</sub> = nitrogen dioxide

NOC = Notice of Completion

NOP/IS = Notice of Preparation/Initial Study

NO<sub>x</sub> = oxides of nitrogen

O<sub>2</sub> = oxygen

O<sub>3</sub> = ozone

ODS = ozone depleting substance

OEHA = Office of Environmental Health Hazard Assessment

OES = Office of Emergency Services

OPR = Office of Planning and Research

OSHA = Occupational Safety and Health Administration

PAR = Proposed Amended Rule

pCBtF = parachlorobenzotrifluoride



PFAS = perfluoroalkyl and polyfluoroalkyl substances

PFC = perfluorocarbon

PM = particulate matter

PM10 = particulate matter with an aerodynamic diameter of 10 microns or less

PM2.5 = particulate matter with an aerodynamic diameter of 2.5 microns or less

ppb = parts per billion

ppm = parts per million

PRDI = Planning, Rule Development, and Implementation

PV = photovoltaic

RELS = Reference Exposure Levels

RFS = renewable fuel standard

RPS = renewables portfolio standard

RTAC = Regional Target Advisory Committee

RTP = Regional Transportation Plan

SCAB = South Coast Air Basin

SCAG = Southern California Association of Governments

South Coast AQMD = South Coast Air Quality Management District

SCS = sustainable communities strategy

SEA = Subsequent Environmental Assessment

SF6 = sulfur hexafluoride

SIP = State Implementation Plan

SO2 = sulfur dioxide

SO3 = sulfur trioxide

SOx = oxides of sulfur

SSAB = Salton Sea Air Basin

TACs = toxic Air Contaminants

t-BAc = tertiary-Butyl Acetate

tpd = ton or tons per day

U.S. EPA = United States Environmental Protection Agency

Vehicle Mile Traveled = VMT

VOC = volatile organic compound(s)

WDR = waste discharge requirements

ZE/NZE = zero emission and near-zero emission

## **APPENDIX A**

---

### **Proposed Amended Rule (PAR) 1168 – Adhesive and Sealant Applications**

In order to save space and avoid repetition, please refer to the latest version of PAR 1168 located elsewhere in the Governing Board Agenda for the public hearing scheduled on November 4, 2022. The version of PAR 1168 that was circulated with the Draft SEA for a 45-day public review and comment period from September 6, 2022 to October 21, 2022 was identified as the “Preliminary Draft Rule PAR 1168, revision date August 19, 2022,” which is available from the South Coast AQMD’s website at: [http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1168/par-1168---preliminary-draft-rule---081922-\(004\).pdf](http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1168/par-1168---preliminary-draft-rule---081922-(004).pdf). An original hard copy of the Draft SEA, which included the draft version of PAR 1168 listed above, can be obtained through the South Coast AQMD Public Information Center by phone at (909) 396-2001 or by email at [PICrequests@aqmd.gov](mailto:PICrequests@aqmd.gov).



# Proposed Amended Rule 1168

## Adhesive and Sealant Applications

November 4, 2022

*Board Meeting*

# Background

## Rule 1168

- Applies to adhesives, adhesive primers, sealants, and sealant primers
- Adopted in 1989; last amended in 2017
- 2017/2018 VOC emission inventory 6.2 tpd
- Implemented 2016 Air Quality Management Plan
  - Targeted at 1.0 tpd VOC emission reductions
  - Expected 1.38 tpd reduction by 2017 amendment
- 2017 amendment required a technology assessment for nine categories due to industry concerns regarding feasibility
- Based on technology assessment, staff concluded a rule amendment was required

# Proposed Amended Rule 1168

## **Prohibit the use of t-BAC and pCBtF**

- Establish prohibition effective date depending on product categories
- Allow sell-through for products already on the shelves and use-through for products already purchased

## **Amend some VOC limits and delay some future effective limits**

- Technology assessment demonstrated some limits will not be achieved
- Prohibition of t-BAC and pCBtF also resulted in some higher VOC limits

## **Include a conditional and limited exemption for Opteon 1100**

- Not effective unless the criteria are met based on OEHHA evaluation
- Limited to two-component foam sealants applied in an industrial or professional setting

## **Remove the reference of ASTM Test Method 7767 (UV/EB/LED Thin Film Test Method)**

## **Revise rule language to provide clarification and streamlining**

# t-BAc and pCBtF Prohibition

## Toxicity of Currently Exempt Compounds

- April 2017, staff presented a t-BAc assessment of, including pCBtF concerns to Stationary Source Committee (SSC)
- SSC directed staff to remove the VOC exemption for compounds with toxic endpoints
- pCBtF and t-BAc have higher toxic endpoint than other prohibited exempt compounds, PAR 1168 will prohibit their use

## pCBtF Prohibition Effective:

- January 1, 2025 – 2027, for a few categories that rely on pCBtF to meet VOC limits
- January 1, 2024, for all other Regulated Products

## t-BAc Prohibition Effective:

- January 1, 2024, for all Regulated Products

## Sell-through and use-through

- Shorter sell-through and use-through periods to help offset the delays



# Summary of Proposed VOC Limit Revisions

PAR 1168 VOC limits are based on pCBtF prohibition and technology assessment

**Retain current limit and  
remove future limit\***

- 3 Roofing Categories
- 1 Specialty Welding Cement

**No change**

- 1 Roofing Category
- 2 Foam Sealant Categories
- 2 Welding Cement Categories

**Delay future limit  
1½ to 5 years**

- 2 Adhesive Categories
- 1 Specialty Sealant
- 1 Specialty Welding Cement

**Increase VOC limit**

- 1 Foam Sealant Category

**Reduce VOC limits**

- 2 Roofing Categories



\* Rule includes current VOC limits with lower future effective VOC limits for categories that required a technology assessment



# Proposed Resolution Language

---

Resolution includes two updates to Stationary Source Committee (SSC)

January 2026, provide an update on the progress of the pCBtF and t-BAC phase-out, including data reported in the Rule 1168 Quantity and Emission Reports and feedback from manufacturers of roofing adhesives and sealants

---

Within two months of OEHHA completing its assessment of Opteon 1100, report back to SSC and seek guidance on a broader directive regarding Hydrofluro-Olefins (HFOs) if OEHHA identifies potential toxicity concerns

---

# PAR 1168 VOC Emissions

**Baseline  
Emissions\***



**6.2 tpd**

**Foregone  
Emission  
Reductions**



**0.28 tpd**

**Delayed Emission  
Reductions**



**0.42 tpd**

\* Based on 2017 and 2018 Quantity and Emission Reports submitted by manufacturers of all adhesives and sealants sold in the South Coast AQMD every three to five years

# Key Remaining Issues

## UV/EB/LED Thin Film Test Method

- U.S. EPA proposed a limited disapproval for Rule 1106 - Marine and Pleasure Craft Coatings and Rule 1107- Coating of Metal Parts and Products into the State Implementation (SIP) Plan citing:
  - ASTM Test Method D7767-11\* is not a U.S. EPA approved test method and cannot be used to enforce an SIP approved rule
- Rule 1168 has a definition for Energy Curable Adhesives and Sealants which references the UV/EB/LED thin film test method
- Definition is being removed to avoid disapproval
  - Manufacturers can rely on formulation data to verify compliance for thin film UV/EB/LED curable products

\* *Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers and Blends and Thin Coatings Made from Them*

# PAR 1168 Socioeconomic Impacts



PAR 1168 does not include new Best Available Retrofit Control Technology requirements therefore cost-effectiveness and incremental cost-effectiveness not required



Cost impacts evaluated and includes affected industries and a range of probable costs due to the t-BAC and pCBtF prohibition



Average annual cost estimated to be \$400,000

# Staff Recommendations

## Adopt Resolution

Certifying the Final Subsequent  
Environmental Assessment; and

Adopting Rule 1168