

BOARD MEETING DATE: December 7, 2018

AGENDA NO. 11

REPORT: Rule and Control Measure Forecast and AB 617 Expedited BARCT Implementation Schedule

SYNOPSIS: This report highlights SCAQMD rulemaking activities and public hearings scheduled for 2019 and AB 617 Expedited BARCT Implementation Schedule. This action is to receive and file the report and adopt the proposed AB 617 BARCT Implementation Rules Schedule.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:

Receive and file the Rule and Control Measure Forecast and adopt Table 1, Proposed Schedule for AB 617 BARCT Implementation Rules.

Wayne Nastri  
Executive Officer

PMF:SN:AF:EG

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## 2019 MASTER CALENDAR

The SCAQMD is required by state law to publish a list of all rules potentially scheduled for consideration during the coming year. The Rule and Control Measure Forecast is expanded for this purpose and includes a list of the proposed and proposed amended rules scheduled for 2019.

For each month, a description of the proposed rule or proposed amended rule is provided with a notation in the third column indicating if the rulemaking is for the 2016 AQMP, Toxics, AB 617 BARCT, or Other. Projected emission reductions will be determined during rulemaking. The following symbols next to the rule number indicate if the rulemaking will be a potentially significant hearing, reduce criteria pollutants, or part of the RECLAIM transition:

\* *Potentially significant hearing*

+ *Reduce criteria air contaminants and assist toward attainment of ambient air quality standards*

# *Part of the transition of RECLAIM to a command-and-control regulatory structure*

Attachment 1 is the AB 617 Expedited Best Available Retrofit Control Technology (BARCT) Implementation Schedule that includes the proposed rulemaking schedule for AB 617 rules and a summary of other requirements under AB 617. The BARCT Implementation Schedule was presented to the Stationary Source Committee on November 16, 2018.

### 2019 MASTER CALENDAR

Month	Title and Description	Type of Rulemaking
<b>January</b>		
1118.1*+##	<p><b>Control of Emissions from Non-Refinery Flares</b>  Proposed Rule 1118.1 will reduce NOx emissions from flaring at non-refinery facilities. The proposed rule encourages beneficial use of gases as an alternate to flaring and establishes emission standards for flares at sources such as landfills, wastewater treatment plants, and oil and gas production facilities.</p> <p><i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB 617 BARCT
1325	<p><b>Federal PM2.5 New Source Review Program</b>  Proposed Amended Rule 1325 will address a deficiency identified by U.S. EPA to provide a clarification in the definition of “regulated NSR pollutant” as well as other minor administrative revisions to existing rule language to provide clarity.</p> <p><i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other/ AQMP
<b>February</b>		
1403*	<p><b>Asbestos Emissions from Demolition/Renovation Activities</b>  Proposed Amended Rule 1403 will enhance implementation, improve rule enforceability, and align provisions with the applicable U.S. EPA National Emission Standard for Hazardous Air Pollutants (NESHAP) and other state and local requirements as necessary.</p> <p><i>David De Boer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics

\* Potentially significant hearing

+ Will reduce criteria air contaminants and assist toward attainment of ambient air quality standards

# Part of the transition of RECLAIM to a command-and-control regulatory structure

**2019 MASTER CALENDAR (Continued)**

<b>Month</b>	<b>Title and Description</b>	<b>Type of Rulemaking</b>
<b>March</b>		
110	<b>Rule Adoption Procedures to Assure Protection and Enhancement of the Environment</b>	Other
212	<b>Standards for Approving Permits and Issuing Public Notice</b>	
301	<b>Permitting and Associated Fees</b>	
303	<b>Hearing Board Fees</b>	
306	<b>Plan Fees</b>	
307.1	<b>Alternative Fees for Air Toxics Emissions Inventory</b>	
309	<b>Fees for Regulation XVI and Regulation XXV</b>	
315	<b>Fees for Training Classes and License Renewal</b>	
510	<b>Notice of Hearing</b>	
515	<b>Findings and Decision</b>	
812	<b>Notice of Hearing</b>	
3006	<b>Public Participation</b> The above proposed amended rules will revise noticing requirements to reflect recent amendments to state law that allow certain public notices to be sent via electronic mail (email) and streamline other types of noticing requirements. <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	
<b>April</b>		
1106 <sup>+</sup> 1106.1 <sup>+</sup>	<b>Marine Coating Operations</b> <b>Pleasure Craft Coating Operations</b> Rule 1106 would subsume the requirements of Rule 1106.1, revise VOC content limits for several categories in order to align limits with U.S. EPA Control Techniques Guidelines and other California air districts, and add new limits for several new categories. Rule 1106.1 is proposed to be rescinded. <i>David DeBoer 909.396.2329 CEQA: Jillian Wong 909.396.3176 and Socio: Ian MacMillan 909.396.3244</i>	AQMP/ AB 617 BARCT
1407 <sup>*</sup>	<b>Control of Emissions of Arsenic, Cadmium and Nickel from Non-Ferrous Metal Operations</b> Proposed Amended Rule 1407 will establish additional requirements to minimize point source and fugitive toxic air contaminant emissions from non-chromium metal melting operations. <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	Toxics

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# Part of the transition of RECLAIM to a command-and-control regulatory structure

**2019 MASTER CALENDAR (Continued)**

<b>Month</b>	<b>Title and Description</b>	<b>Type of Rulemaking</b>
<b>April</b> (Continued)		
1134*+##	<b>Emissions of Oxides of Nitrogen from Stationary Gas Turbines</b> Proposed Amended Rule 1134 will update the NOx emission standard to reflect Best Available Retrofit Control Technology for RECLAIM and non-RECLAIM facilities. Proposed Rule 1134 will also establish an ammonia emission limit for pollution controls with ammonia emissions, and update monitoring, reporting, and recordkeeping requirements.	AQMP/ AB 617 BARCT
1100	<b>Implementation Schedule for NOx Facilities</b> Proposed Rule 1100 will establish the implementation schedule for NOx RECLAIM facilities that are transitioning to command and control. <i>Michael Morris 909.396.3282 CEQA: Jillian Wong 909.396.3176 and Socio: Ian MacMillan 909.396.3244</i>	
<b>May</b>		
1410*	<b>Hydrogen Fluoride Use at Refineries</b> Proposed Rule 1410 will establish requirements including mitigation measures, a performance standard, and potential phase-out of hydrogen fluoride or modified hydrogen fluoride for the use and storage of hydrogen fluoride at petroleum refineries. <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	Toxics
Reg. III	<b>Fees</b> Proposed amendments to Regulation III will incorporate the Consumer Price Index adjustment to reflect inflation, pursuant to Rule 320. Other proposed amendments may be needed to update fees associated with existing programs and implementation of new or revised programs. <i>Ian MacMillan 909.396.3244; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	Other
<b>June</b>		
Reg. IX Reg. X	<b>Standards of Performance for New Stationary Sources (NSPS)</b> <b>National Emission Standards for Hazardous Air Pollutants (NESHAPS)</b> Proposed amendments to Regulations IX and X are periodically made to incorporate by reference new or amended federal standards that have been enacted by U.S. EPA for stationary sources. Regulations IX and X provide stationary sources with a single point of reference for determining which federal and local requirements apply to their specific operations. <i>Carol Gomez 909.396.3264; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	Other

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# Part of the transition of RECLAIM to a command-and-control regulatory structure

## 2019 MASTER CALENDAR (Continued)

Month	Title and Description	Type of Rulemaking
<b>June</b> (Continued)		
1480*	<p><b>Toxics Monitoring</b> Proposed Rule 1480 will establish requirements for ambient monitoring of certain metal toxic air contaminants. Proposed rule will establish applicability, on-ramps and off-ramps for ambient monitoring, and provisions to address high ambient levels.</p> <p style="text-align: right;"><i>Jillian Wong 909.396.3176 CEQA: Jillian Wong 909.396.3176 and Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
<b>July</b>		
Reg. XIII*# Reg. XX	<p><b>New Source Review RECLAIM</b> Proposed Amendments to Regulation XIII will revise New Source Review provisions to address facilities that are transitioning from RECLAIM to command-and-control. Staff may be proposing a new rule within Regulation XIII to address offsets for facilities that transition out of RECLAIM. Proposed Amendments to Regulation XX also are needed to coordinate amendments to Regulation XIII.</p> <p style="text-align: right;"><i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
1138*+	<p><b>Control of Emissions from Restaurant Operations</b> Proposed Amended Rule 1138 will reduce NOx emissions from establishments utilizing commercial cooking ovens, ranges, fryers, and charbroilers.</p> <p style="text-align: right;"><i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB 617 BARCT
1450	<p><b>Control of Methylene Chloride Emissions</b> Proposed Rule 1450 will reduce methylene chloride emissions from furniture stripping and establish monitoring, reporting, and recordkeeping requirements.</p> <p style="text-align: right;"><i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; and Socio: Ian MacMillan 909.396.3244</i></p>	Toxics

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# Part of the transition of RECLAIM to a command-and-control regulatory structure

**2019 MASTER CALENDAR (Continued)**

<b>Month</b>	<b>Title and Description</b>	<b>Type of Rulemaking</b>
<b>September</b>		
1110.2*+##	<b>Emissions from Stationary Internal Combustion Engines</b> Rule 1110.2 will update the NOx emission standard to reflect Best Available Retrofit Control Technology for RECLAIM and non-RECLAIM facilities. Proposed Rule 1110.2 will also establish an ammonia emission limit for pollution controls with ammonia emissions, and update monitoring, reporting, and recordkeeping requirements.	AQMP/ AB 617 BARCT
1100	<b>Implementation Schedule for NOx Facilities</b> Proposed Rule 1100 will establish the implementation schedule for NOx RECLAIM facilities that are transitioning to command-and-control. <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	
1147*+## 1147.1	<b>NOx Reductions from Miscellaneous Sources</b> <b>NOx Reductions from Large Miscellaneous Combustion</b> Proposed Rule 1147.1 will establish NOx emission limits to reflect Best Available Retrofit Control Technology for large miscellaneous combustion sources and will apply to RECLAIM and non-RECLAIM facilities. Proposed Amended Rule 1147 will remove equipment that will be regulated under Proposed Rule 1147.1 and evaluate the existing NOx emission limits.	Other/ AB 617 BARCT
1100	<b>Implementation Schedule for NOx Facilities</b> Proposed Rule 1100 will establish the implementation schedule for NOx RECLAIM facilities that are transitioning to command-and-control. <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	
<b>October</b>		
113*##	<b>Monitoring, Reporting, and Recordkeeping (MRR) Requirements for NOx and SOx Sources</b> Proposed Rule 113 will establish MRR requirements for facilities exiting RECLAIM and transitioning to a command-and-control regulatory structure. <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	AQMP
218*## 218.1	<b>Continuous Emission Monitoring</b> <b>Continuous Emission Monitoring Performance Specifications</b> Proposed Amended Rule 218 will revise provisions for continuous emission monitoring systems for facilities exiting RECLAIM and transitioning to a command-and-control regulatory structure. <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i>	AQMP

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# Part of the transition of RECLAIM to a command-and-control regulatory structure

**2019 MASTER CALENDAR (Continued)**

Month	Title and Description	Type of Rulemaking
<b>October</b> (Continued)		
1109*+  1109.1	<p><b>Emissions of Oxides of Nitrogen from Boilers and Process Heaters in Petroleum Refineries</b>  <b>Reduction of Emissions of Oxides of Nitrogen from Refinery Equipment</b>                      Proposed Rule 1109.1 will establish NOx emission limits to reflect Best Available Retrofit Control Technology for NOx emitting equipment at petroleum refineries and related operations. Proposed Rule 1109.1 is an industry-specific rule, will establish an ammonia emission limit for pollution controls with ammonia emissions, and update monitoring, reporting, and recordkeeping requirements. Proposed Rule 1109.1 will replace Rule 1109.</p> <p><i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ BARCT (AB 617)
<b>November</b>		
N/A	<p><b>Airports MOU/Ports MOU/Potential Regulation</b>                      The proposed MOUs with the marine ports and commercial airports will implement the facility-based mobile source measures MOB-01 and MOB-04 from the 2016 AQMP. In the event that the MOU approach with the ports or airports is not agreed on, staff will pursue a regulatory approach.</p> <p><i>Zorik Pirveysian 909.396.2431; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
1147*+ 1147.2	<p><b>NOx Reductions from Miscellaneous Sources</b>  <b>NOx Reductions from Metal Melting and Heat Treating Furnaces</b>                      Proposed Rule 1147.2 will establish NOx emission limits to reflect Best Available Retrofit Control Technology for metal melting and heat treating furnaces and will apply to RECLAIM and non-RECLAIM facilities. Proposed Amended Rule 1147 will remove equipment that will be regulated under Proposed Rule 1147.2.</p> <p><i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB617 BARCT
1435*	<p><b>Control of Emissions from Metal Heat Treating Processes</b>                      Proposed Rule 1435 will establish requirements to reduce point source and fugitive toxic air contaminants including hexavalent chromium emissions from heat treating processes. Proposed Rule 1435 will also include monitoring, reporting, and recordkeeping requirements.</p> <p><i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics

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# Part of the transition of RECLAIM to a command-and-control regulatory structure

**2019 MASTER CALENDAR (Continued)**

Month	Title and Description	Type of Rulemaking
December		
1117 <sup>+#</sup>	<p><b>Emissions of Oxides of Nitrogen from Glass Melting Furnaces</b>                      Proposed Amended Rule 1117 will establish NO<sub>x</sub> emission limits to reflect Best Available Retrofit Control Technology for glass melting furnaces and will apply to RECLAIM and non-RECLAIM facilities.  <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB 617 BARCT
1147 <sup>*+#</sup> 1147.3	<p><b>NO<sub>x</sub> Reductions from Miscellaneous Sources</b>  <b>NO<sub>x</sub> Reductions for Equipment at Aggregate Facilities</b>                      Proposed Rule 1147.3 will establish NO<sub>x</sub> emission limits to reflect Best Available Retrofit Control Technology for NO<sub>x</sub> equipment at aggregate facilities and will apply to RECLAIM and non-RECLAIM facilities. Proposed Amended Rule 1147 will remove equipment that will be regulated under Proposed Rule 1147.3.  <i>Michael Krause 909.396.2706 CEQA: Jillian Wong 909.396.3176 and Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB 617 BARCT
1150.3 <sup>*+</sup>	<p><b>NO<sub>x</sub> Emission Reduction from Combustion Equipment at Landfills</b>                      Proposed Rule 1150.3 will establish NO<sub>x</sub> emission limits for boilers, process heaters, furnaces, and engines to reflect Best Available Retrofit Control Technology at landfills. The proposed rule will also include implementation schedules and monitoring, recordkeeping, and reporting requirements.  <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB 617 BARCT
1179.1 <sup>*+</sup>	<p><b>NO<sub>x</sub> Emission Reduction from Combustion Equipment at Publicly Owned Treatment Work Facilities</b>                      Proposed Rule 1179.1 will establish NO<sub>x</sub> emission limits for boilers, process heaters, furnaces, and engines to reflect Best Available Retrofit Control Technology at publicly owned treatment works. The proposed rule will also include implementation schedules and monitoring, recordkeeping, and reporting requirements.  <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB 617 BARCT
1426 <sup>*</sup>	<p><b>Reduction of Toxic Air Contaminants from Metal Finishing Operations</b>                      Proposed amendments to Rule 1426 will establish requirements to reduce nickel, cadmium, hexavalent chromium, and other air toxics from plating operations. Proposed Amended Rule 1426 will establish requirements to control point source and fugitive toxic air contaminant emissions.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics

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# Part of the transition of RECLAIM to a command-and-control regulatory structure

**2019 MASTER CALENDAR (Continued)**

<b>Month</b>	<b>Title and Description</b>	<b>Type of Rulemaking</b>
<b>December (Continued)</b>		
Reg. XXIII <sup>*+</sup>	<p><b>Facility Based Mobile Sources</b>  Proposed rules within Regulation XXIII would reduce emissions from indirect sources (e.g., mobile sources that visit facilities). The rule or set of rules that would be brought for Board consideration in this month would reduce emissions from warehouses and distribution centers, consistent with Control Measure MOB-03 from the 2016 AQMP.  <i>Ian MacMillan 909.396.3244 CEQA; Jillian Wong 909.396.3176 Socio; Ian MacMillan 909.396.3244</i></p>	AQMP

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# *Part of the transition of RECLAIM to a command-and-control regulatory structure*

## 2019 To-Be-Determined

The following list of proposed or proposed amended rules have not been scheduled for a specific month in 2019 at this time. Monthly revisions to the Rule and Control Measure Forecast will reflect any changes in the status of a rule that is moved from this list of “To-Be-Determined” to a specific month in 2019.

2019	Title and Description	Type of Rulemaking
102	<p><b>Definition of Terms (VOC)</b> Staff may propose amendments to Rule 102 to add or revise definitions in order to support amendments to other Regulation XI rules. <i>Carol Gomez 909.396.3264; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
209 301	<p><b>Transfer and Voiding of Permits; Permitting and Associated Fees</b> Staff may propose amendments to clarify requirements for change of ownership and permits and the assessment of associated fees.</p>	
219	<p><b>Equipment Not Requiring a Written Permit Pursuant to Regulation II</b> Proposed Amended Rule 219 will add or revise equipment not requiring a written permit. <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
222	<p><b>Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II</b> Proposed Amended Rule 222 will add or revise equipment subject to filing requirements. <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
223 1133.3	<p><b>Emission Reduction Permits for Large Confined Animal Facilities</b> Proposed Amended Rules 223 and 1133.3 will seek additional emission reductions from large confined animal facilities by lowering the applicability threshold. <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
416	<p><b>Odors from Kitchen Grease Processing</b> Proposed Rule 416 will reduce odors from kitchen grease processing operations. The proposed rule will establish best management practices, and examine enclosure requirements for wastewater treatment operations and filter cake storage. <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
425	<p><b>Odors from Cannabis Processing</b> Proposed Rule 425 will establish requirements to control the odors from cannabis processing. <i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
429	<p><b>Start-Up and Shutdown Exemption Provisions for Oxides of Nitrogen</b> Proposed Amendments to Rule 429 to address start-up/shutdown provisions related to the transition of NOx RECLAIM to a command-and-control regulatory program and if U.S. EPA requires updates to such provisions. <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other

**2019 To-Be-Determined (Continued)**

2019	Title and Description	Type of Rulemaking
430	<p><b>Breakdown Provisions</b>            This rule will be amended or replaced to address specific issues raised by U.S. EPA regarding start-ups or shutdowns associated with breakdowns.  <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
445	<p><b>Wood Burning Devices (PM 2.5 Contingency)</b>            Proposed Amendments to Rule 445 will include provisions for contingency in the event of failure to attain, or make reasonable further progress toward, the PM2.5 federal ambient air quality standards and other provisions.  <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
461	<p><b>Gasoline Transfer and Dispensing</b>            Proposed Amendments to Rule 461 will reflect information from the California Air Resources Board, corrections, revisions and additions to improve the effectiveness, enforceability, and clarity of the rule.  <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ Toxics
462	<p><b>Organic Liquid Loading</b>            Proposed Amendments to Rule 462 will improve the effectiveness, enforceability, and clarity of the rule.  <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
463	<p><b>Organic Liquid Storage</b>            Proposed Amendments to Rule 463 will address the current test method and improve the effectiveness, enforceability, and clarity of the rule.  <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
464	<p><b>Wastewater Separators</b>            Proposed Amendments to Rule 464 will improve the effectiveness, enforceability, and clarity of the rule.  <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1107	<p><b>Coating of Metal Parts and Products</b>            Proposed Amended Rule 1107 will lower VOC emission limits for certain categories of coatings for metal parts and products and improve rule clarity and enforceability.  <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
1111.1	<p><b>Reduction of NOx Emissions from Natural Gas Fired Commercial Furnaces (CMB-01)</b>            Proposed Rule 1111.1 will establish equipment-specific NOx emission limits and other requirements for the operation of commercial furnaces.  <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP Other
1113	<p><b>Architectural Coatings</b>            Proposed Amended Rule 1113 may be needed to remove the tBAC exemption and pCBtF as a VOC exempt compound based on guidance from the Stationary Source Committee.  <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other

**2019 To-Be-Determined (Continued)**

2019	Title and Description	Type of Rulemaking
1118	<p><b>Refinery Flares</b>  Proposed Amended Rule 1118 will revise provisions to improve the enforceability of the rule.  <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	
1123	<p><b>Refinery Process Turnarounds</b>  Proposed Amended Rule 1123 will establish procedures that better quantify emission impacts from start-up, shutdown or turnaround activities.  <i>Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
1135	<p><b>Emissions of Oxides of Nitrogen from Electricity Generating Facilities</b>  Proposed Amended Rule 1135 will revise monitoring, reporting, and recordkeeping provisions to reflect amendments to Proposed Rule 113 and possibly other amendments to address comments from U.S. EPA.  <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1136	<p><b>Wood Products Coatings</b>  Proposed Amended Rule 1136 will revise VOC limits for wood product coatings and other clarifications.  <i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP
1142	<p><b>Marine Tank Vessel Operations</b>  Proposed Amended Rule 1142 will address VOC emissions from marine tank vessel operations and provide clarifications.  <i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1146.2	<p><b>Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters</b>  Proposed Amended Rule 1146.2 may be revised to lower the NO<sub>x</sub> emission limit to reflect a Best Available Retrofit Control Technology assessment.  <i>Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB617 BARCT
1148.1 1148.2	<p><b>Oil and Gas Production Wells  Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers</b>  Proposed Amended Rules 1148.1 and 1148.2 may be revised to address community notification procedures, the inclusion of water injection wells, and potentially other measures based on an evaluation of information collected since the last rule adoption. Possibly other amendments to improve the enforceability.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1149	<p><b>Tank Degassing</b>  Proposed Amended Rule 1149 will improve the effectiveness, enforceability, and clarity of the rule.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other

**2019 To-Be-Determined (Continued)**

2019	Title and Description	Type of Rulemaking
1148.3	<p><b>Requirements for Natural Gas Underground Storage Facilities</b>  Proposed Rule 1148.3 will establish requirements to address public nuisance and VOC emissions from underground natural gas storage facilities.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1150.1	<p><b>Control of Gaseous Emissions from Municipal Solid Waste Landfills</b>  Proposed Amended Rule 1150.1 will address U.S. EPA revisions to the New Source Performance Standards for Municipal Solid Waste Landfills and Existing Guidelines and Compliance Timelines for Municipal Solid Waste Landfills, as well as CARB GHG requirements.  <i>Ian MacMillan 909.396.3244; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1151	<p><b>Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations</b>  Proposed Amended Rule 1151 is considering removing the tBac exemption and is evaluating the impact from removing pCBtF as a VOC exempt compound based on guidance from the Stationary Source Committee.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1153.1	<p><b>Emissions of Oxides of Nitrogen from Commercial Food Ovens</b>  Proposed Amendments to Rule 1153.1 may be needed to address applicability and technological feasibility of low-NOx burner technologies for new commercial food ovens.  <i>Michael Krause 909.396.2706 CEQA: Jillian Wong 909.396.3176 and Socio: Ian MacMillan 909.396.3244</i></p>	AQMP/ AB 617 BARCT
1157	<p><b>PM10 Emission Reductions from Aggregate Related Operations</b>  Proposed Amended Rule 1157 will remove outdated language, revise opacity requirements, improve the effectiveness, enforceability, and clarity of the rule.  <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1159.1	<p><b>Nitric Acid Units – Oxides of Nitrogen</b>  Proposed Rule 1159.1 will address NOx emissions from processes using nitric acid and is needed as part of the transition of RECLAIM to command-and-control.  <i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP AB 617 BARCT
1166	<p><b>VOC Emissions from Decontamination of Soil</b>  Proposed Amended Rule 1166 will revise notification provisions, improve the effectiveness, enforceability, and clarity of the rule.  <i>Michael Morris 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1173	<p><b>Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants</b>  Proposed revisions to Rule 1173 are being considered based on recent U.S. EPA regulations and CARB oil and gas regulations and revisions to improve the effectiveness, enforceability, and clarity of the rule.  <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other

**2019 To-Be-Determined (Continued)**

2019	Title and Description	Type of Rulemaking
1190, 1191, 1192, 1193, 1194, 1195, 1196, & 1186.1	<p><b>Fleet Vehicle Requirements</b>  Proposed amendments to fleet rules may be necessary to improve rule implementation. In addition, the current fleet rules may be expanded to achieve criteria pollutant and air toxic emission reductions pending new legislative authority.  <i>Zorik Pirveysian 909.396.2431; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1304.2  1304.3	<p><b>California Public Utilities Commission Regulated Electrical Local Publicly Owned Electrical Utility Fee for Use of SO<sub>x</sub>, PM<sub>10</sub> and NO<sub>x</sub> Offsets</b>  <b>Local Publicly Owned Electrical Generating Facility Fee for Use of SO<sub>x</sub>, PM<sub>10</sub> and NO<sub>x</sub> Offsets</b>  Proposed Rules 1304.2 and 1304.3 would allow new greenfield facilities and additions to existing electricity generating facilities conditional access to SCAQMD internal offset accounts for a fee, for subsequent funding of qualifying improvement projects consistent with the AQMP.  <i>TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other  Other
1401	<p><b>New Source Review of Toxic Air Contaminants</b>  Proposed Amended Rule 1401 may be revised to add, remove, or revise toxic air contaminants based on changes from OEHHA.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
1402	<p><b>Control of Toxic Air Contaminant Emissions from Existing Sources</b>  Proposed Amended Rule 1402 may be revised based on implementation of other toxic rules or programs.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
1407.1	<p><b>Control of Toxic Air Contaminant Emissions from Chromium Alloy Melting Operations</b>  Proposed Rule 1407.1 will establish requirements to reduce point source and fugitive toxic air contaminant emissions from metal melting operations.  <i>Michael Morris 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
1415 1415.1	<p><b>Reduction of Refrigerant Emissions from Stationary Air Conditioning Systems, and Reduction of Refrigerant Emissions from Stationary Refrigeration Systems</b>  Amendments will align with the proposed CARB Refrigerant Management Program and U.S. EPA's Significant New Alternatives Policy Rule provisions relative to prohibitions on specific hydrofluorocarbons.  <i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1426	<p><b>Emissions from Metal Finishing Operations</b>  Proposed Amended Rule 1426 will establish requirements to control point and fugitive toxic air contaminant emissions from metal finishing operations.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics

**2019 To-Be-Determined (Continued)**

2019	Title and Description	Type of Rulemaking
1430	<p><b>Control of Emissions from Metal Grinding Operations at Metal Forging Facilities</b>  Proposed Amended Rule 1430 may be needed to establish requirements to reduce toxic air contaminant emissions from metal forging operations.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
1445	<p><b>Control of Toxic Emissions from Laser Arc Cutting</b>  Proposed Rule 1445 will establish requirements to reduce toxic metal particulate emissions from laser arc cutting.  <i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
1469.1	<p><b>Spraying Operations Using Coatings Containing Chromium</b>  Proposed Amended Rule 1469.1 will establish additional requirements to address fugitive emissions from facilities that are conducting spraying operations using chromium primers or coatings to further reduce hexavalent chromium emissions.  <i>Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
1470	<p><b>Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines</b>  Proposed Amended Rule 1470 will establish additional provisions to reduce the exposure to diesel particulate from new and existing small (<math>\leq 50</math> brake horsepower) diesel engines located near sensitive receptors.  <i>David DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Toxics
1902	<p><b>Transportation Conformity</b>  Proposed Amended Rule 1902 may be necessary to align the rule with current U.S. EPA requirements.  <i>Ian MacMillan 909.396.3244; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
1905	<p><b>Pollution Controls for Automotive Tunnel Vents</b>  Proposed Rule 1905 will address emissions from proposed roadway tunnel projects that could have air quality impacts.  <i>Ian MacMillan 909.396.3244; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
2202	<p><b>On-Road Motor Vehicle Mitigation Options</b>  Proposed Rule 2202 may be amended to address program streamlining for regulated entities, as well as reduce review and administration time for SCAQMD staff. Proposed Rule amendment concepts may include program components to facilitate the obtainment of average vehicle ridership (AVR) targets.  <i>Carol Gomez 909.396.3264; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
Reg. XVI	<p><b>Mobile Source Offset Programs</b>  Proposed Amendments to Regulation XVI rules will allow generation of criteria pollutant Mobile Source Emission Reduction Credits (MSERCs) from various on-road and off-road sources, such as on-road heavy-duty trucks, off-road equipment, locomotives, and marine vessels. Credits will be generated by retrofitting existing engines or replacing the engines with new lower-emitting or zero-emission engines.  <i>Zorik Pirveysian 909.396.2431; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	AQMP

**2019 To-Be-Determined (Continued)**

2019	Title and Description	Type of Rulemaking
Reg. XVII	<p><b>Prevention of Significant Deterioration(PSD)</b>                      Proposed Amendments to Regulation XVII are being considered for possible revisions based on information from U.S. EPA.  <i>Carol Gomez 909.396.3264; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
Reg. XXVII	<p><b>Climate Change</b>                      Changes may be needed to Regulation XXVII to add or update protocols for GHG reductions, and other changes.  <i>Zorik Pirveysian 909.396.2431; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244</i></p>	Other
Reg. II, IV, XIV, XI, XXIII, XXIV, XXX and XXXV	<p>Various rule amendments may be needed to meet the requirements of state and federal laws, implement OEHHA’s 2015 revised risk assessment guidance, address variance issues/ technology-forcing limits, to abate a substantial endangerment to public health or additional reductions to meet the SIP short-term measure commitment. The associated rule development or amendments include, but are not limited to, SCAQMD existing rules, new or amended rules to implement the 2012 or 2016 AQMP measures. This includes measures in the 2010 Clean Communities Plan (CCP) or 2016 AQMP to reduce toxic air contaminants or reduce exposure to air toxics from stationary, mobile, and area sources. Rule adoption amendments may include updates to provide consistency with CARB Statewide Air Toxic Control Measures, U.S. EPA’s National Emission Standards for Hazardous Air Pollutants, or implementation of AB 617.</p>	Other/ AQMP

## ATTACHMENT 1

### **AB 617 Expedited BARCT Implementation Schedule**

On July 26, 2017, Assembly Bill (AB) 617 authored by Assembly Member Cristina Garcia was signed into law with the objective to address the disproportionate impacts of air pollution in disadvantaged communities. AB 617 requires air districts to take specific actions to reduce air pollutants and toxic air contaminants from commercial and industrial sources within and affecting communities most impacted by air pollution. The SCAQMD is actively conducting comprehensive community-based efforts that focus on improving air quality and public health in environmental justice communities. SCAQMD is closely working with CARB, community groups, community members, environmental organizations, and regulated industries, to develop community air monitoring and community emissions reduction programs pursuant to AB 617 requirements.

Other aspects of AB 617 and related bills appropriate funding to incentivize deployment of cleaner technologies in disadvantaged communities, grants for community participation, higher penalty fees, and greater transparency and availability of air quality and emissions data. Additionally, AB 617 requires each air district that is in nonattainment for one or more air pollutants to adopt, by January 1, 2019, an expedited schedule for the implementation of Best Available Retrofit Control Technology (BARCT) no later than December 31, 2023 for facilities that are in the state's greenhouse gas cap-and-trade program. The schedule shall give the highest priority to older, higher polluting units that have not modified emissions-related equipment for the greatest period of time.

The South Coast Air Basin is currently in federal non-attainment for annual and 24-hour PM<sub>2.5</sub> and 1-hour and 8-hour ozone. It is also in non-attainment of state air quality standards for PM<sub>2.5</sub>, PM<sub>10</sub>, and ozone. The Coachella Valley is also in non-attainment for 8-hour ozone and PM<sub>10</sub>. As required by state and federal law, the SCAQMD develops and adopts Air Quality Management Plans (AQMPs) that describe the measures that will bring the region into attainment by applicable deadlines. Federal law requires that these plans implement all Reasonably Available Control Technologies and Measures (RACT and RACM). State law requires that districts in non-attainment areas implement BARCT. Therefore, the SCAQMD is already required to adopt rules to implement the best pollution controls in order to meet federal and state air quality standards. AB 617 adds an additional deadline (December 31, 2023) for a subset of pollution sources in the region to these other pre-existing other requirements.

Since the early 1990s, SCAQMD has implemented a market-based alternative to direct command-and-control regulations that require BARCT-level controls on individual pieces of equipment. The RECLAIM program, which addressed NO<sub>x</sub> and SO<sub>x</sub> emissions, was required to be at least as stringent as command-and control regulations in terms of overall emission reductions achieved. When the 2016 AQMP was adopted, the Board directed staff to sunset the NO<sub>x</sub> RECLAIM program and return to a command-

and-control regulatory structure. The sunset is to occur as soon as practicable, and achieve an additional five tons of NO<sub>x</sub> reductions per day by 2025. Thus, prior to the passage of AB 617, the SCAQMD was already in the process of developing command-and-control BARCT on all NO<sub>x</sub> sources (not just those in the state's GHG cap-and-trade program). AB 617 requirements have expedited the transition by moving up the target implementation date to December 2023, given statutory feasibility and cost-effectiveness constraints. The suite of NO<sub>x</sub> rules scheduled for adoption in the coming years to complete the NO<sub>x</sub> RECLAIM transition (and thus comply with AB 617) is provided in the table below. Note that these rules will cover all NO<sub>x</sub> sources, including those currently within and outside of RECLAIM, whether they are in the state's GHG cap-and-trade program or not, and include electrical generating facilities. In other words, AB 617's narrow applicability does not preclude SCAQMD's other obligations under state law to require BARCT.

Current efforts are focused on requiring BARCT for NO<sub>x</sub> given this pollutant's primary role leading to PM and ozone non-attainment. However, VOC emissions also lead to ozone formation, and VOCs, SO<sub>x</sub>, ammonia, and direct PM emissions also lead to ambient PM. Federal RACT/RACM and state BARCT requirements also apply to these other precursors and pollutants. These requirements are satisfied through the AQMP process. Each AQMP includes an analysis of the best available controls for all pollutants and precursors. Based on that analysis, measures are proposed and rules developed or amended to require BARCT, and in some cases, technology-forcing rules are adopted that go beyond existing BARCT. The evaluation of BARCT is continual to reflect the progress in technology development. Thus, for VOC, direct PM, and ammonia, current SCAQMD regulatory requirements largely require BARCT on all sources already. Future updates to BARCT requirements will be considered within the AQMP process. A few rules in the table below are intended to address PM and VOC BARCT prior to the next AQMP cycle.

Like NO<sub>x</sub>, SO<sub>x</sub> emissions from larger sources are addressed through the RECLAIM program. The last BARCT assessment was conducted in 2005, led to a significant SO<sub>x</sub> "shave" in the RECLAIM market, and led to the installation of controls at most of the RECLAIM SO<sub>x</sub> sources. While not yet directed by the Board, and not necessarily required by AB 617, a full assessment of the SO<sub>x</sub> RECLAIM program, and whether it too should be transitioned to command-and-control, will occur subsequent to the adoption of the major rules for the RECLAIM NO<sub>x</sub> transition (likely 2020). The priority on NO<sub>x</sub> is necessary given its importance for both PM<sub>2.5</sub> and ozone attainment and the need for an integrated and efficient control strategy.

**Table 1**  
**Proposed Schedule for AB617 BARCT Implementation Rules**

<b>AB 617 BARCT Implementation Rules<sup>1</sup></b>		<b>Proposed Rulemaking Schedule</b>	<b>Pollutant</b>	<b>Air Quality Benefits (tpd)<sup>2</sup></b>
1146 <sup>3</sup>	Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters	December 2018	NOx	0.27
1118.1	Control of Emissions from Non-Refinery Flares	January 2019	NOx	0.20
1106.1	Pleasure Craft Coatings	Q1 2019	VOC	TBD
1134	Emissions of Oxides of Nitrogen from Stationary Gas Turbines	Q2 2019	NOx	TBD
1110.2	Emissions from Stationary Internal Combustion Engines	Q3 2019	NOx	TBD
1138	Emissions Control from Restaurant Operations	Q3 2019	PM	TBD
1147	NOx Reductions from Miscellaneous Sources	Q3 2019	NOx	TBD
1147.1	NOx Reductions from Large Miscellaneous Sources	Q3 2019	NOx	TBD
445	Wood Burning Devices	Q4 2019	PM	TBD
1109.1	Refinery Equipment	Q4 2019	NOx	TBD
1117	Glass Melting Furnaces	Q4 2019	NOx	TBD
1147.2	NOx Reductions from Metal Melting Sources	Q4 2019	NOx	TBD
1147.3	NOx Reductions from Aggregate Facilities	Q4 2019	NOx	TBD
1150.3	NOx Reductions from Combustion Equipment at Landfills	Q1 2020	NOx	TBD
1179.1	NOx Reductions from Combustion Equipment at Publicly Owned Treatment Works	Q1 2020	NOx	TBD
1159.1	Nitric Acid Units - Oxides of Nitrogen	Q1 2020	NOx	TBD
1153.1	NOx Reductions from Commercial Food Ovens	Q1 2020	NOx	TBD
1146.2	NOx Reductions from Large Water Heaters and Small Boilers and Process Heaters	Q1 2022	NOx	TBD

The expedited BARCT implementation schedule will be adopted pursuant to the requirements in paragraph (d)(1)-(3) of California H&SC 40920.6:

*(d) Prior to adopting the schedule pursuant to paragraph (1) of subdivision (c), a district shall hold a public meeting and take into account:*

*(1) The local public health and clean air benefits to the surrounding community.*

*(2) The cost-effectiveness of each control option.*

*(3) The air quality and attainment benefits of each control option.*

<sup>1</sup> The listed AB 617 BARCT Implementation Rules, in addition to Rule 1135 (Emissions of Oxides of Nitrogen from Electric Power Generating Facilities) and Rule 1153.1 (Emissions of Oxides of Nitrogen from Commercial Food Ovens) are rulemakings for the transition of the RECLAIM program to a command-and-control regulatory structure.

<sup>2</sup> Reductions to be determined once the technical assessment is complete, and inventory and control approach are identified.

<sup>3</sup> The rulemaking for Rule 1146 includes amendments to Rule 1146.1 (Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters) and Rule 1146.2 (Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters).

## **Local Public Health and Clean Air Benefits**

Although there are compliance costs for implementing controls to achieve the necessary emission reductions, there will be significant savings in public health and clean air benefits both locally and regionally by lowering health risks. These necessary emission reductions needed to attain the ozone and PM<sub>2.5</sub> air quality standards are not only required by federal law, but will also improve public health with cleaner air quality across the region, which will lower the health risks described below<sup>4</sup>.

### *Ozone*

Individuals working outdoors, children (including teenagers), older adults, people with preexisting lung disease, such as asthma, and individuals with certain nutritional deficiencies are considered to be the subgroups most susceptible to 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. Elevated ozone levels are associated with increased school absences and daily hospital admission rates, as well as increased mortality. An increased risk for asthma has been found in children who participate in multiple sports and live in high-ozone communities. Ozone exposure under exercising conditions is known to increase the severity of respiratory symptoms. Although lung volume and airway 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.

### *PM<sub>2.5</sub> and PM<sub>10</sub>*

Several studies have found correlations between elevated ambient particulate matter levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks, and the number of hospital admissions in different parts of the United States and in various areas around the world. In recent years, studies have reported an association between long-term exposure to PM<sub>2.5</sub> and increased total mortality (reduction in life-span and increased mortality from lung cancer). Higher levels of PM<sub>2.5</sub> have also been related to increased mortality due to cardiovascular or respiratory diseases, hospital admissions for acute respiratory conditions, school absences, lost work days, a decrease in respiratory function in children, and increased medication use in children and adults with asthma. Long-term exposure to PM has been found to be associated with reduced lung function growth in children, and increased risk of cardiovascular diseases in adults. Elderly persons, young children, and people with pre-existing respiratory and/or cardiovascular disease appear to be more susceptible to the effects of PM<sub>10</sub> and PM<sub>2.5</sub>.

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<sup>4</sup> An expanded discussion and additional references of studies relating to exposures to air pollutants and the health effects can be found in Appendix I of the 2016 AQMP.

## *NO2*

Evidence of the health effects of NO<sub>2</sub> is derived from human and animal studies, which link NO<sub>2</sub> with respiratory effects such as decreased lung function and increases in airway responsiveness, pulmonary inflammation, and oxidative stress, and can lead to the development of allergic responses. These biological responses provide evidence of a plausible mechanism for NO<sub>2</sub> to cause asthma. Additionally, results from controlled exposure studies of asthmatics demonstrate an increase in the tendency of airways to contract in response to a chemical stimulus (airway responsiveness) or after inhaled allergens. Animal studies also provide evidence that NO<sub>2</sub> exposures have negative effects on the immune system, and therefore increase the host's susceptibility to respiratory infections. Epidemiological studies showing associations between NO<sub>2</sub> levels and hospital admissions for respiratory infections support such a link, although the studies examining respiratory infections in children are less consistent.

### **Cost-Effectiveness**

Consistent with Health & Safety Code Section 40920.6, a cost-effectiveness analysis is performed when establishing BARCT emission limits. Cost-effectiveness is measured in terms of the control cost in dollars per ton of air pollutant reduced. The costs for the control technology includes purchasing, installing, operating, and maintaining the control technology. The 2016 AQMP established a cost-effectiveness threshold of \$50,000 per ton of NO<sub>x</sub> reduced<sup>5</sup> for each control measure considered in the 2016 AQMP and for subsequent rule developments when more detailed information is available. When the cost-effectiveness of a rule or control option is higher than this threshold, additional analysis should be performed. An integrated control strategy addressing multiple objectives provides for a more efficient path in meeting all clean air standards, including the federal ozone and PM<sub>2.5</sub> standards. For example, the NO<sub>x</sub> emission reductions that are needed for ozone attainment will also reduce PM<sub>2.5</sub> attainment levels, since NO<sub>x</sub> is an important precursor to ozone and PM<sub>2.5</sub> formation. Therefore, allocating resources towards NO<sub>x</sub> reductions is a more cost-effective strategy than separately implementing controls that only benefit PM<sub>2.5</sub>. Furthermore, in designing an integrated control strategy to achieve the ozone and PM<sub>2.5</sub> air quality standards, consideration must be given to the health of the public, the economic well-being of the region, and challenges for local business.

### **Attainment Benefits**

In order to assist in the attainment of the 1997 and 2008 8-hour ozone standards (80 ppb and 75 ppb respectively), CMB-05 seeks to reduce 5 tpd of NO<sub>x</sub> emissions by transitioning RECLAIM facilities to a command-and-control regulatory structure. Projected creditable emission reductions from the implementation of CMB-05 are expected to generate 5 tpd NO<sub>x</sub> emission reductions by 2025. The 2016 AQMP includes

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<sup>5</sup> Although, the cost-effectiveness threshold was not developed for particulate matter, it provides a useful framework for evaluating control strategies for particulate matter.

10 stationary source control measures designed to reduce PM<sub>2.5</sub> levels that are to be adopted and implemented in the next several years. These measures involve Best Available Control Measures (BACM) as required and would see reductions from a variety of sources (such as restaurants, industrial cooling towers, road dust sources, ammonia emissions and more) and will seek to assist in meeting the annual (12 µg/m<sup>3</sup>) and 24-hour (35 µg/m<sup>3</sup>) PM<sub>2.5</sub> standards.