

# PROPOSED RULE 1147.1 WORKING GROUP MEETING #4

FEBRUARY 24, 2021  
SOUTH COAST AQMD  
DIAMOND BAR, CA

**Zoom Meeting:**  
**Meeting ID:**  
**Passcode:**  
**Conference Call:**

<https://scaqmd.zoom.us/j/99818986721>  
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**(669) 900-6833**

# Agenda

- ❑ Recap of Previous Working Group
- ❑ Stakeholder Comments and Response
- ❑ Proposed Rule 1147 Carbon Monoxide (CO) Limit Discussion
- ❑ Proposed Rule Implementation Schedule
- ❑ Continuous Emissions Monitoring System (CEMS)
- ❑ Proposed Rule 1147.1 Monitoring, Recordkeeping and Reporting
- ❑ Next Steps

# Recap of Working Group Meeting #3

- ❑ Proposed renaming equipment category from “asphalt manufacturing operations” to “aggregate dryers”
- ❑ Presented results of BARCT assessment and cost-effectiveness analysis for the aggregate dryers category
- ❑ Proposed initial BARCT limit:

Equipment Category	Existing Limit in Rule 1147	Proposed BARCT Limit
Aggregate Dryers	40 ppm	25 ppm

# Stakeholder Comments

## □ **Comment:**

- BARCT limits should not be set by manufacturer guarantee
- Inconsistencies with throughput aggregate might cause source test results to show higher NOx emissions depending on aggregate type

## □ **Response:**

- Proposed BARCT emission limit was determined by source test results and not solely on manufacturer guarantees
- Staff is evaluating provisions for “standard gravel” during source testing to address inconsistencies of emissions from aggregate quality similar to provisions in other air districts

# Stakeholder Comments

## □ **Comment:**

- Rotary Dryers and fluidized bed dryers should be separately evaluated due to differences in process and general equipment size

## □ **Response:**

- Burners used in fluidized bed dryers are identified to be smaller than that of rotary dryers
- Staff is continuing to work with stakeholders on this topic

# Stakeholder Comments

## □ **Comment:**

- Costs used in cost-effective analysis should be based off of actual vendor quotes

## □ **Response:**

- Staff has reviewed one additional equipment cost provided by a stakeholder
- Comparison with estimates presented during Working Group #3 showed staff estimates were more conservative than what the stakeholder provided for equipment cost and installation of the same size unit



# PROPOSED CARBON MONOXIDE (CO) LIMIT



## Discussion on CO Limits for PR 1147.1

- ❑ Rule 1147 does not currently have limit for carbon monoxide (CO)
- ❑ CO Limits for equipment subject to Rule 1147 are set at the time of permitting based off of BACT or Rule 407
- ❑ South Coast AQMD Rule 1146/1146.1 includes CO limit of 400 ppm for industrial boilers, steam generators and process heaters
- ❑ Other air agencies such as San Joaquin Valley APCD and Ventura County APCD have CO limits of 400 ppm for similar equipment
  - San Joaquin APCD Rule 4309 was adopted on December 15, 2005
  - Ventura County APCD Rule 74.34 was adopted on December 13, 2016



# Source Test Analysis of NOx and CO Limits for PR 1147.1

**Table 1 - Source Test Results for Equipment  
<40 ppm NOx and <400 ppm CO**

Test Date (MM/DD/YYYY)	Heat Input (MMBtu/hr)	NOx Results (@ 3% O <sub>2</sub> )	CO Results (@ 3% O <sub>2</sub> )
09/20/2018	50.0	24.0	151.0
09/19/2018	100.0	26.9	251.0
06/29/2010	66.0	35.0	321.0
01/21/2013	100.0	28.3	41.6
09/19/2018	100.0	26.9	251.0
04/06/2017	100.0	26.5	328.1
06/25/2010	109.9	33.3	116.0
02/27/2013	125.0	26.8	11.9
07/31/2007	125.0	28.7	204.0
03/18/2018	35.0	7.6	204.8
06/20/2017	25.0	26.3	285.0
06/16/2006	95.0	18.5	199.5
02/24/2014	100	29.6	119.3
08/16/2017	94.0	34.2	232.7
12/15/2005	125	30.9	255.0

- ❑ Not all permits for Proposed Rule 1147.1 applicable equipment included a limit for CO
- ❑ Evaluated source test results from 26 out of 43 units in the PR 1147.1 universe
- ❑ 15 out of the 26 results demonstrated <40 ppm NOx and <400 ppm CO
  - three of which demonstrated results <25 ppm NOx and <400 ppm CO

Staff proposes to include CO limit of 400 ppm corrected to 3% O<sub>2</sub> in Proposed Rule 1147.1

Implementation schedule for CO limit to be in parallel with NOx limit implementation schedule



# IMPLEMENTATION SCHEDULE



# Implementation Approach

- ❑ Staff is proposing an implementation approach for RECLAIM and non-RECLAIM facilities, that is generally modeled after Rule 1147
- ❑ Two implementation schedules
  - All units, except low-emitting or near-limit units, must submit permit applications to meet the proposed NOx and CO limits when the burner reaches 12 years
  - Low-emitting or near-limit units must submit permit applications to meet the proposed NOx and CO limits when the burner reaches 32 years
- ❑ Regardless of the implementation schedule, the proposed NOx and CO limits must be met if there is a combustion system modification, combustion system or burner replacement, unit relocation, or unit replacement
- ❑ Units that meet the proposed NOx and CO limits through a source test will not be required to replace their burner; however, operators may need to modify their permit to reflect the proposed BARCT limit

## Proposed Compliance for Units Subject to 12 Year Provisions

- ❑ Currently Rule 1147 requires that operators meet NOx emission limits when the “unit” reaches 15 years
- ❑ When the burner reaches 12 years, the operator must:
  1. By the following January 1<sup>st</sup>, submit a permit application to meet the proposed NOx and CO limits
  2. Meet proposed NOx and CO limits 12 months after the permit to construct is issued
- ❑ Assuming an 18-month permit approval process, operators must meet the proposed NOx and CO limits when the burner is about 15 years old – similar to the 15 years allowed under Rule 1147
- ❑ Basing this provision on burner age instead of unit age ensures that all units meet the proposed NOx and CO limits
- ❑ The “two-step” implementation ensures that the operator has the full 12 months to meet the proposed NOx and CO limits once permit to construct is issued

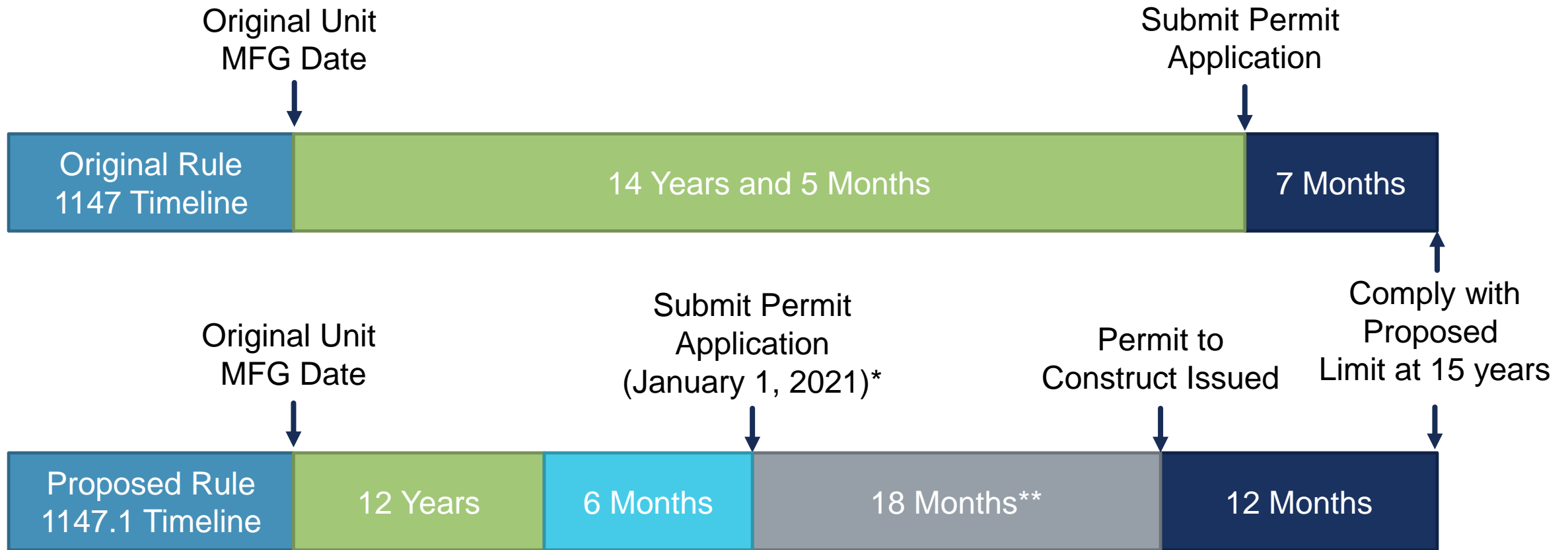
## Proposed Compliance for Units Subject to 32 Year Provisions

- ❑ Currently Rule 1147 requires that operators with units < 1 lb/day meet NOx emission limits when the “unit” reaches 35 years
- ❑ PR 1147.1 expands this concept for low-emitting units to also include units that are near the proposed NOx limit referred to as “near-limit units”
- ❑ For low-emitting and near-limit units, when the burner reaches 32 years the operator must:
  - First: Submit a permit application to meet the proposed NOx and CO limits (6 months to submit permit application)
  - Second: Meet proposed NOx and CO limits 12 months after the permit to construct is issued
- ❑ Operators to meet the proposed NOx and CO limits when the burner is about 35 years old
  - Similar to the 35 years allowed under Rule 1147
- ❑ The “two-step” implementation ensures that the operator has the full 12 months to meet the proposed NOx and CO limits once permit to construct is issued

## Defining Low-Emitting and Near-Limit Units Subject to 32 Year Provision

- ❑ PR 1147.1 will use the same threshold as Rule 1147 for defining low-emitting units at < 1 lb/day
  - Units that qualify as low-emitting to meet proposed NO<sub>x</sub> and CO limits when the burner reaches 35 years
- ❑ Propose near-limit units with a permit limit at or below 36 ppm NO<sub>x</sub> AND <100 MMSCF natural gas usage per year
  - Units that meet this criteria had an average cost-effectiveness of \$478,000 per ton of NO<sub>x</sub> reduced and consistent with findings presented during Working Group #3
  - This approach will address units with high cost-effectiveness values, but still requires that operators to meet the proposed NO<sub>x</sub> limit when the burner reaches 35 years

# Implementation Timelines



\* Failure to submit permit application by appropriate deadline will require that unit to meet BARCT limit when the burner turns 15 or 35 years, as applicable for units < 40 MMBtu/hr

\*\* Permitting timeline subject to vary, assume permit to construct to be issued after 6 months of application submittal

# Summary of Implementation Approach for RECLAIM and Non-RECLAIM

Applicability	Implementation
<p>All Units (Except Low-Emitting and Near Limit Units)</p>	<ul style="list-style-type: none"> <li>Beginning July 1, 2021 and every July thereafter, when a burner reaches 12 years submit a permit application by January 1<sup>st</sup> of the following calendar year that the burner reaches 12 years</li> <li>Must meet proposed NOx and CO limit 12 months after Permit to Construct is issued</li> </ul>
<p><u>Low-Emitting Units</u> Units with NOx emissions below 1 lb/day</p> <p><u>Near-Limit Units</u> Units with permit limit at or below 36 ppm and &lt; 100 MMScf/yr gas usage</p>	<ul style="list-style-type: none"> <li>Beginning July 1, 2021 and every July thereafter, when a burner reaches 32 years submit a permit application by January 1<sup>st</sup> of the following calendar year that the burner reaches 32 years</li> <li>Must meet proposed NOx and CO limit 12 months after Permit to Construct is issued</li> </ul>
<p>All Units</p>	<ul style="list-style-type: none"> <li>Regardless of the implementation schedule above, operators must meet proposed NOx limit if there is a combustion system modification, combustion system or burner replacement, unit relocation, or unit replacement</li> <li>Regardless of the implementation schedule above, operators must meet proposed CO limit at the time of meeting proposed NOx limit</li> </ul>





# CONTINUOUS EMISSIONS MONITORING SYSTEM (CEMS)



## CEMS Requirements in RECLAIM

- ❖ RECLAIM sources are categorized as Major, “Super Compliant” Major, Large and Process units
- ❖ Equipment under the Major Source categorization are required to be equipped with Continuous Emissions Monitoring Systems (CEMS)
- ❖ Some aggregate facilities operating equipment applicable to the Major Source requirements were given the designation of “Super Compliant” and were not subject to CEMS requirements
- ❖ Additional assessment of existing monitoring requirements were conducted for Major and “Super Compliant” Major sources under RECLAIM to avoid backsliding on existing CEMS provisions

# Existing CEMS Requirements

## RECLAIM Major Source

- Units with  $\geq 40$  MMBtu/hr with annual heat input of  $\geq 90$  Billion BTU/year or  $\geq 500$  Million BTU/hr
- Required to install, maintain and operate CEMS or equivalent
- Required to conduct relative accuracy test audit (RATA) every 6 months to demonstrate 20% relative accuracy
  - Facilities meeting more stringent 7.5% relative accuracy to conduct RATA annually

# Super Compliant Major Source

## Super Compliant Major Source

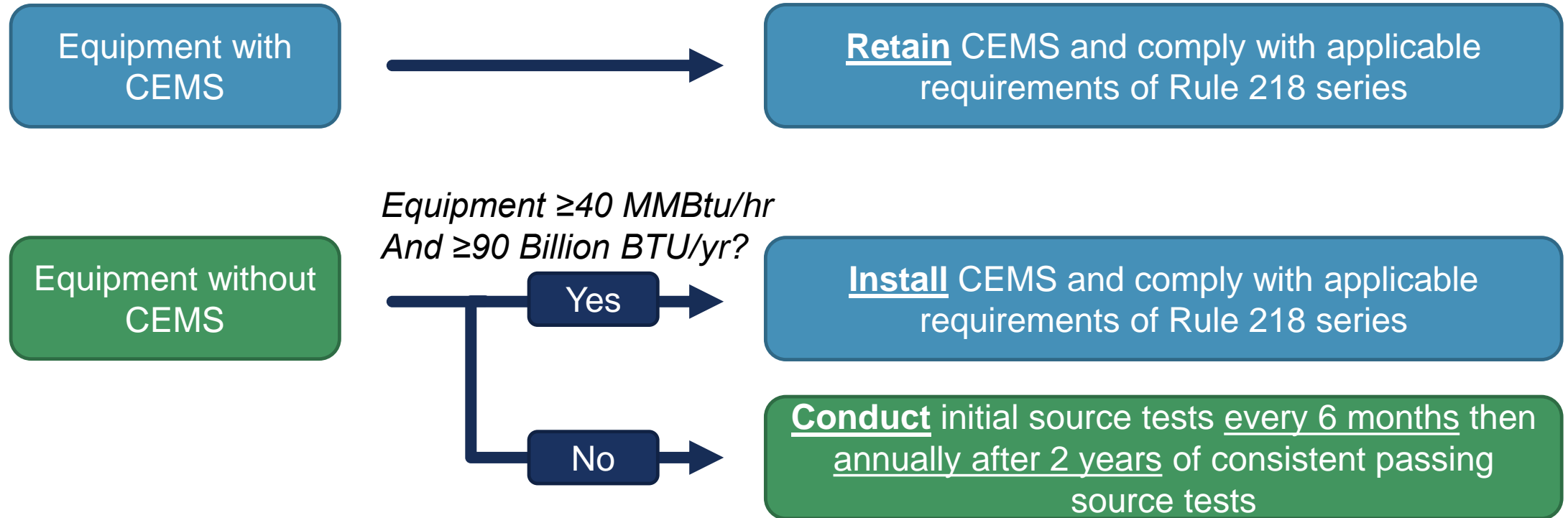
- ❑ Facilities with a major source at or below their adjusted 2003 allocation as of their 1994 compliance year may choose to reclassify into large source
  - Referred to as super compliant major source
- ❑ Must accept equipment specific concentration limit on equipment permit at the time of reclassification
  - Initial source test conducted to demonstrate compliance with concentration limit
- ❑ Periodic source testing requirements:
  - Initial source test interval of every 6 months
  - Extend interval to every four quarters after two years of consistent compliant source test results

# Proposed Rule 1147.1 CEMS Provision

Criteria	RECLAIM Rule 2012	Proposed Rule 1147.1
Size	40 MMBtu/hr	40 MMBtu/hr
Heat Input	90 Billion Btu per year	90 Billion Btu per year

- ❑ CEMS provision for Proposed Rule 1147.1 will mirror qualifications for Major Sources under Rule 2012
- ❑ RECLAIM major sources or units with existing CEMS units will be required to retain their systems and comply with requirements of Rule 218 series
  - Staff has identified two units with existing CEMS within RECLAIM
- ❑ Existing units, including “super compliant” major sources, that meet the CEMS threshold under PR 1147.1 will be required to install CEMS and comply with requirements of Rule 218 series

# Proposed Rule 1147.1 CEMS Provisions Overview



Based off of facilities with AER and RECLAIM reporting, 5 additional units (3 in RECLAIM and 2 in non-RECLAIM) are expected to install CEMS

# Proposed Rule 1147.1 Source Testing Provision

Equipment Size	RECLAIM Rule 2012	Proposed Rule 1147.1
≥40 MMBtu/hr (RECLAIM “Super Compliant” Major Sources that do not meet CEMS applicability)	Initially <u>every 6 months</u> then <u>annually after 2 years</u> of consistent passing source tests	<b>Conduct</b> initial source tests <u>every 6 months</u> then <u>annually after 2 years</u> of consistent passing source tests
<40 MMBtu/hr; and ≥10 MMBtu/hr (RECLAIM Large Sources)	Every 3 years	Every 3 years
<10 MMBtu/hr (RECLAIM Process Sources)	Every 5 years	Every 5 years

- ❑ Source testing provisions for Proposed Rule 1147.1 will mirror requirements of RECLAIM
- ❑ Non-RECLAIM units subject to PR 1147.1 will be required to conduct initial source tests within 12 months of rule adoption

# Next Steps

Present draft rule language during next working group meeting scheduled for early March 2021

Release Draft Rule Language and Draft Staff Report

Public workshop in late March/early April 2021

Stationary Source Committee Meeting on April 16, 2021

Public Hearing on June 4, 2021



# CONTACTS

General RECLAIM Questions	Proposed Amended Rules 1147 and 1100	Proposed Rule 1147.1	Proposed Amended Rules 1147, 1100 and Proposed Rule 1147.2
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