



Proposed Amended Rule 1173 - *Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants*

WORKING GROUP MEETING #4
JULY 11, 2024 – 3:00 PM

Zoom Meeting: <https://scaqmd.zoom.us/j/95683547797>

Meeting ID: 956 8354 7797

Agenda

Recap of Working Group Meeting #3

Responses to Feedback

Refinement of OGI BARCT Assessment

Initial Rule Framework

Next Steps

Recap of Working Group Meeting #3



Source: <https://www.hpc-industrial.com>



Source: <https://flir.com>

- Completed BARCT assessments regarding:
 - Proposed lower leak standards
 - Valves, fittings, and other devices: 100 ppm
 - Compressors and light liquid pumps: 400 ppm
 - Monthly optical gas imaging (OGI) component inspections
- Discussion of other rule concepts
 - Several possible contingency measures identified
 - Delay of repair for essential equipment did not appear to be necessary due to lack of supporting documentation
- Public stakeholder feedback received regarding:
 - Assumptions used for costs and emission reductions
 - Procedures for leaks found using OGI
 - Utility-owned versus facility-owned natural gas equipment

<https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-par-1173-wgm3.pdf>

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Cost Assumptions for OGI Equipment



Feedback

- Some of the cost assumptions for OGI equipment are not consistent with operator experience
 - Maintenance cost is higher and does not appear to factor in shipping and insurance
 - Actual labor costs are twice as high

Response

- Using documentation provided by stakeholder, refinements to the OGI BARCT assessment will be presented later in this presentation

Commercial Natural Gas Equipment

Feedback

- Concerns regarding timeframe of repair
- Repair of commercial natural gas leaks may require unit shutdown, resulting in more VOC emissions
- Leaking equipment may be utility-owned

Response

- Initial rule framework reflects these concerns:
 - 14 days to repair accessible or inaccessible components
 - For essential components requiring unit shutdown, may delay repair to unit turnaround if labeled and tagged
 - For utility-owned equipment, report issue to supplier



Essential Equipment



Feedback

- Stakeholders have concerns that lower leak thresholds may not be feasible without a delay of repair for some equipment, as allowed in other air districts

Response

- Staff is meeting with affected stakeholders to assess need

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Initial OGI BARCT Assessment

Rule	Applicability	Inspection Frequency <i>(Proposed in italics)</i>
PAR 1173	Refineries, chemical plants, re-refiners, marine terminals, oil & gas sites, natural gas plants, pipeline transfer stations	<i>Monthly</i>
Rule 1178	Storage tanks located at petroleum facilities that have emitted more than 20 tons of VOC per year	Weekly
Rule 463	All organic liquid storage tanks located above certain size or potential to emit thresholds	Every two weeks
PAR 1148.1	Wellheads, well cellars, and product handling at oil and gas production facilities	<i>Monthly</i>

Refined OGI Costs

- Capital cost of camera remains unchanged at **\$120,000** after review of current OGI retail pricing
- Operating and maintenance cost, originally estimated at \$1,500 per year per camera, adjusted to **\$4,874** per year per camera
 - Received documentation demonstrating actual costs as well as insured shipping for annual maintenance
- Labor cost, originally estimated at \$400 per day in 2023 rulemaking for Rule 1178, adjusted for inflation to **\$413.88** per operating day
 - Stakeholder reported OGI labor costs are double the \$400 figure, but includes concurrent inspection and repair of components
 - Cost of repair accounted for separately from inspection
- Also detected number of OGI camera required rounded to the nearest whole number, instead of always rounding up
 - Increases OGI cameras required by **1** for “every two weeks” and “weekly” OGI inspection frequencies



Refined Inspection Frequency Costs

<i>Rounded to the nearest thousand</i>	Every Two Months	Monthly	Every Two Weeks	Weekly
OIG cameras required	11	22	48	95
Refined total cost over 10 years (\$)	\$11,282,000	\$23,126,000	\$49,552,000	\$98,071,000
Refined annual cost (\$)	\$1,128,000	\$2,313,000	\$4,955,000	\$9,807,000
Increase in annual cost (\$)	\$62,000	\$224,000	\$369,000	\$635,000

Refined OGI Cost-Effectiveness

	Every Two Months	Monthly	Every Two Weeks	Weekly
Annual Cost (\$)	\$1,128,000	\$2,313,000	\$4,955,000	\$9,807,000
Annual emission reductions (tons per year)	80.3	160.7	203.5	222.3
Cost-Effectiveness (\$/ton)	\$14,000	\$14,400	\$24,300	\$44,100
Incremental Cost-Effectiveness (\$/ton)		\$28,800	\$115,600	\$523,100

- Cost-Effectiveness Threshold: \$40,168/ton VOC
- Monthly OGI inspection **remains both Cost-Effective and Incrementally Cost-Effective**
- OGI inspection every two weeks is **still Cost-Effective and remains not Incrementally Cost-Effective**

Refined OGI BARCT Assessment

Rule	Applicability	Inspection Frequency <i>(Proposed in italics)</i>
PAR 1173	Refineries, chemical plants, re-refiners, marine terminals, oil & gas sites, natural gas plants, pipeline transfer stations	<i>Monthly (unchanged)</i>
Rule 1178	Storage tanks located at petroleum facilities that have emitted more than 20 tons of VOC per year	Weekly
Rule 463	All organic liquid storage tanks located above certain size or potential to emit thresholds	Every two weeks
PAR 1148.1	Wellheads, well cellars, and product handling at oil and gas production facilities	<i>Monthly</i>

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Subdivision (a) *Purpose* & Throughout



Subdivision (a) *Purpose*

- Update to incorporate visible vapors detected using OGI equipment

Throughout the Rule

- Update to align with newer rulewriting style, including:
 - Capitalize defined terms
 - Use of “South Coast AQMD” instead of “District”

Additions and Deletions to (c) *Definitions*

- **10 new definitions to be added**

- *Compressor Seal*
- *Connector*
- *Contingency Measure (CM)*
- *Essential Component*
- *Flange*
- *Optical Gas Imaging (OGI)*
- *Pump Seal*
- *South Coast Air Basin*
- *Visible Leak*
- *Visible Vapors*

- **Three (3) definitions to be deleted**

- *Facility*
- *Field Gas*
- *Process PRD*

Key Modifications to (c) *Definitions*



Key changes:

- Update facility type definitions from older SIC codes to newer NAICS references
- Define *Inspection* more thoroughly, and include audio-visual-olfactory (AVO), OGI, and Analyzer inspection types
- Revise *Refinery* definition to ensure all refining operations including biofuels and other refining included
- Updated *Repair* definition to include a variety of maintenance activity and replacement of component

Subdivision (e)

Identification Requirements



Key change:

- Incorporate best management practice identified at most facilities, commercial natural gas piping to be identified
 - Distinctive paint, labeling, etc.

Subdivision (f)

Self Inspection Requirements



Key changes:

- Update title from *Operator Inspection Requirements*
- AVO inspections to occur once per shift, not to exceed 12 hours, instead of every 8 hours
- AVO inspections for unmanned facilities to be required weekly
- Monthly OGI inspection, beginning July 1, 2025
- Alternative to OGI inspection if approved by U.S. EPA

Subdivision (g)

Leak Standards and Repair Requirements

- Before July 1, 2025:

Component Type	Leak Standard
Compressor or Pump (Light Liquid)	500 ppm
Pressure Relief Device (PRD)	200 ppm
Pump (Heavy Liquid)	100 ppm
Valve, Fitting, or other device (diaphragm, Hatch, sight-glass, meter)	500 ppm

- Beginning July 1, 2025

Component Type	Leak Standard
Compressor or Pump (Light Liquid)	400 ppm
Pressure Relief Device (PRD)	200 ppm
Pump (Heavy Liquid)	100 ppm
Valve, Fitting, or other device (diaphragm, Hatch, sight-glass, meter)	100 ppm

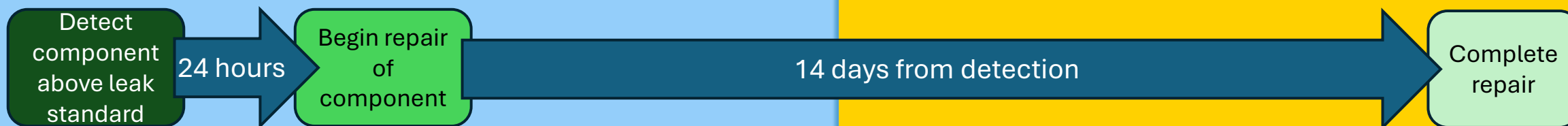
Key changes:

- Update title from *Maintenance Requirements*
- Interim leak standards, consistent with current levels, before July 1, 2025
- Thereafter, lower leak standards:
 - From 500 ppm to **400** ppm for compressors and LL pumps
 - From 500 ppm to **100** ppm for valves, fittings, and others

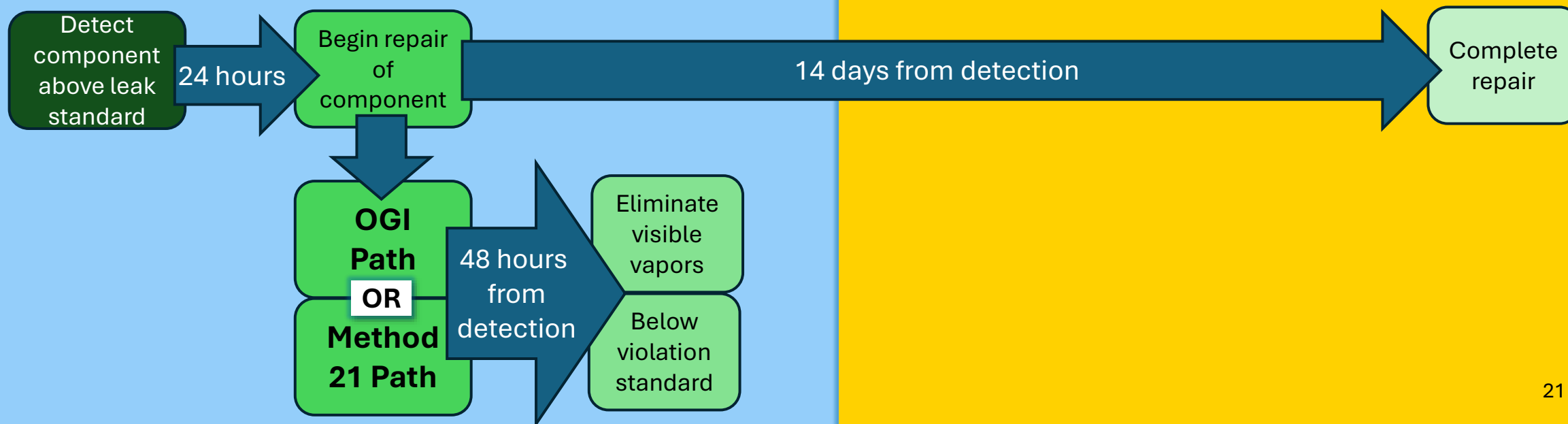
Subdivision (g) continued

Leaks Detected by Analyzer

- Before July 1, 2025:



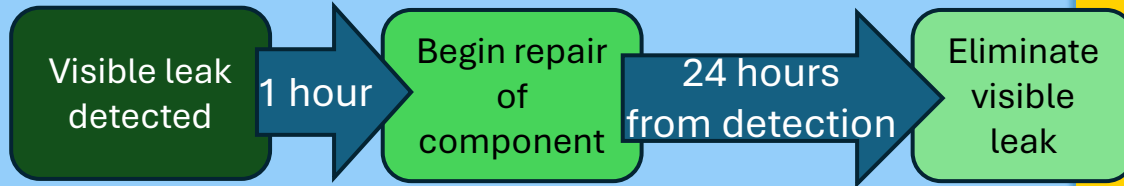
- Beginning July 1, 2025



Subdivision (g) continued

Visible Leaks

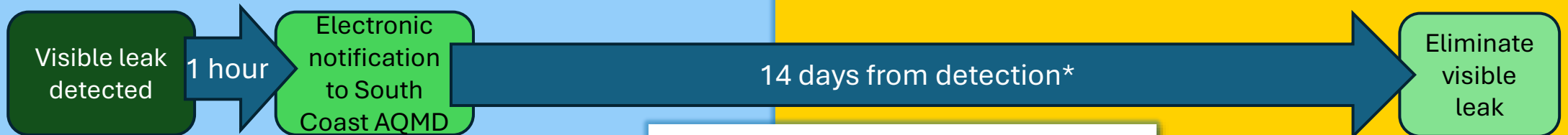
Accessible Components:



Visible Leak

- More than 3 drops of VOC per minute

Inaccessible Components:

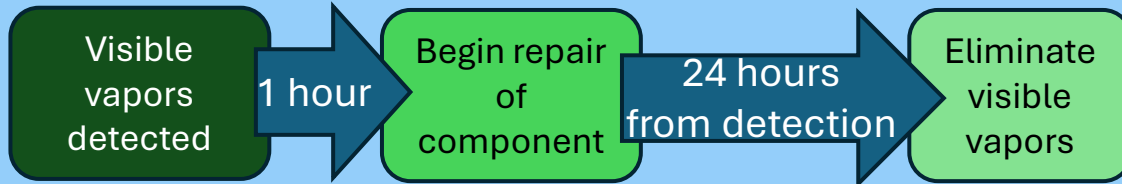


*Begin repair as soon as practicable

Subdivision (g) continued

Visible Vapors

Accessible Components:



Inaccessible Components:



*Begin repair as soon as practicable

Visible Vapors

- Vapors detected using an OGI device

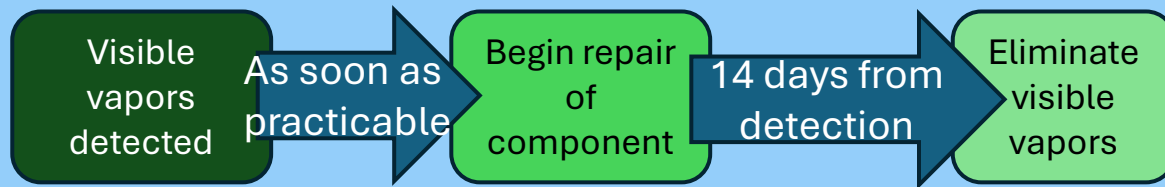
Note: Requirements do not apply until July 1, 2025

Subdivision (g) continued

Commercial Natural Gas

Nonessential Components:

- After July 1, 2025



Utility-owned Components:

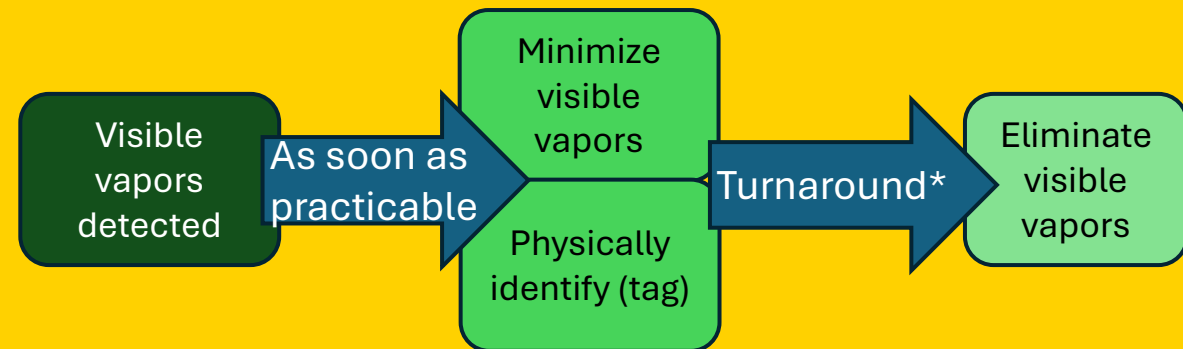
- After July 1, 2025



Essential Components:

- Can only be taken out of service by shutting down process unit it serves

- After July 1, 2025



*Not to exceed one (1) year for non-hydrogen production process units and five (5) year for hydrogen production process units

Subdivision (h)

Atmospheric Process PRD Requirements



Key changes:

- Remove obsolete rule language
- Remove of 500 lbs VOC threshold for releases before performing failure analysis
- Update mitigation fee from \$350,000 to \$625,000 to account for inflation

Subdivision (i)

Recordkeeping and Reporting Requirements



Key changes:

- Electronic records submission required
- Standardized record retention for five (5) years

Subdivision (k)

Ozone Contingency Measures

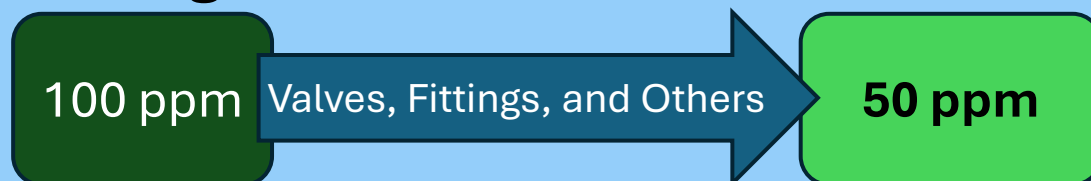
- Stage 1 CM*



- Stage 2 CM*



- Stage 3 CM*



*Triggers are final determinations by U.S. EPA of ozone non-attainment or lack of reasonable further progress (RFP)

Background:

- Contingency measures (CMs) required in air plans by the Clean Air Act
- 2022 Air Quality Management Plan (AQMP) commits to add CMs to rulemaking projects
- Measures found to be cost-effective but not incrementally cost-effective are considered for CMs

Key notes:

- Title changed from *Other Rules and Regulation Applicability*
- CMs are implemented sequentially in order of increasing total annual cost

Subdivision (l)

Exemptions



Key additions:

- Exemption for OGI inspection on days with unsafe conditions, such as for inclement weather or other situations
- Interim measures referenced earlier in presentation, in effect until July 1, 2025

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Milestone	Projected Date
Initial Rule Language	July 2024
Public Workshop	July/August 2024
Stationary Source Committee	August 2024
Set Hearing	September 2024
Public Hearing	October 2024



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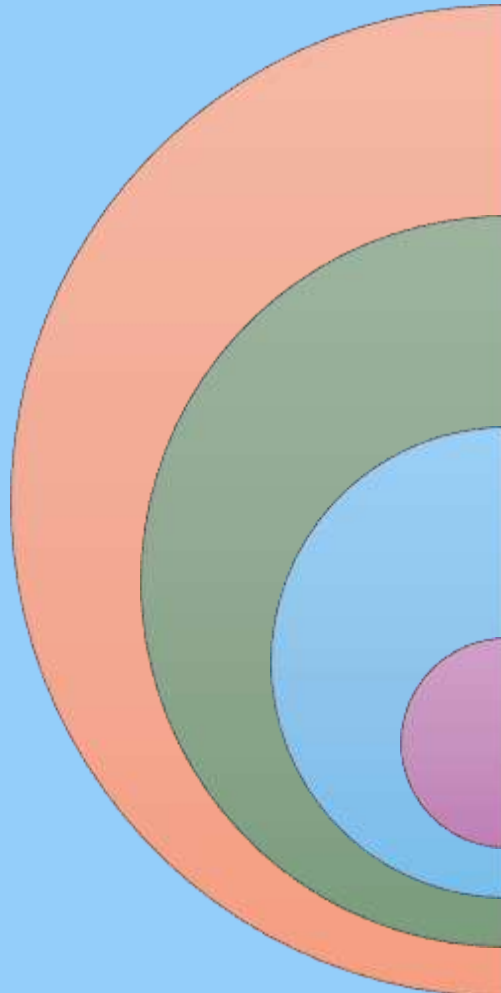


Rule 1173

Email Updates



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