SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Staff Report

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

October 2024

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EXECUTIVE SUMMARY

Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants (Rule 1173) controls volatile organic compound (VOC) leaks from components and releases from atmospheric process pressure relief devices. Rule 1173 applies to refineries, chemical plants, lubricating oil and grease re-refiners, marine terminals, oil and gas production fields, natural gas processing plants, and pipeline transfer stations.

Proposed Amended Rule (PAR) 1173 was developed to implement the Wilmington, Carson, West Long Beach (WCWLB) Community Emission Reductions Plan (CERP) and the 2022 Air Quality Management Plan Control Measure FUG-01: Improved Leak Detection and Repair. The objective of PAR 1173 is to further reduce VOC emissions from components by 1) lowering VOC leak standards for light liquid pumps and compressors as well as fittings, valves, and other devices; 2) formalizing inspection requirements and lower leak standards for fin fans; and 3) requiring optical gas imaging (OGI) inspections monthly. PAR 1173 affects approximately 2.6 million components and points of fugitive VOC emissions at approximately 203 facilities. The control strategies are expected to reduce VOC emissions by 740.1 tons per year or 2.03 tons per day. The overall cost-effectiveness of PAR 1173 is $18,800 per ton of VOC reduced.

Additionally, PAR 1173 will introduce three contingency measures to partially satisfy Clean Air Act contingency requirements for applicable ozone National Ambient Air Quality Standards in the South Coast AQMD's jurisdiction. The contingency measures, if all triggered, are expected to further reduce VOC emissions by 217.9 tons per year or 0.60 tons per day.

Development of PAR 1173 was conducted through a public process. Four Working Group meetings were held on February 28, 2024, April 24, 2024, June 12, 2024, and July 11, 2024. The Working Group is composed of representatives from businesses, environmental groups, public agencies, and consultants. A Public Workshop was held on July 26, 2024, where the proposed amended rule language was presented to the general public and stakeholders, and comments were received. Staff also conducted multiple site visits as part of this rulemaking process.

CHAPTER 1: BACKGROUND

INTRODUCTION

Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants applies to refineries, chemical plants, lubricating oil and grease re-refiners, marine terminals, oil and gas production fields, natural gas processing plants and pipeline transfer stations. The purpose of Rule 1173 is to reduce and control volatile organic compound (VOC) from leaks from components and from releases from atmospheric process pressure relief devices (PRDs). Proposed Amended Rule (PAR) 1173 is needed to further reduce VOC from components using new smart leak detection and repair (LDAR) technology and through other practical and innovative strategies.

OVERVIEW OF COMPONENTS

Components are used throughout facilities that extract, process, transmit, and store fluids, including fluids that contain VOCs. As opposed to piping, components may be assembled from parts and often contain moving parts and other points of failure and thus are more likely to develop leaks to allow the escape of VOC to atmosphere. Components are grouped together by design and purpose:

Fittings

A fitting is a device used to terminate, attach, or connect pipes or piping details. Fittings may be divided into two types: connectors or flanges. Facilities reported to South Coast AQMD that they conducted more than 1.7 million inspections of fittings during the fourth quarter of calendar year 2023.

Connectors are nonwelded connections of pipes or piping details, typically threaded and screwed together. Another type of connector is a compression fitting. Examples of connector-type fittings are couplings, elbows, tees, plugs, or caps. See Figure 1-1.

Figure 1-1 - Connector

Flanges are nonwelded connections of pipes or piping details with flanged ends that do not fit inside one another, unlike connectors. Instead, flanges are joined together by bolting and are equipped with a gasket, seal, or other means to provide a barrier from leakage. See Figure 1-2.

Figure 1-2 - Two flanges

Valves

A valve is a device that regulates or isolates the flow of fluid in a pipe, tube, or conduit by means of an external actuator, and includes all associated connectors and flanges. Figure 1-3 shows a photo of a typical valve used in industrial applications with two potential sources of leakage: one at the valve stem and a second at the associated flange. Based on submitted reports, staff estimated that there are approximately a half-million valves in South Coast AQMD in light liquid or gas/vapor VOC service.

Figure 1-3 - Valve

Pumps and Compressors

Pumps and compressors are devices used to move fluids with the addition of energy. Devices used to move liquids, including light liquids and heavy liquids, are referred to as pumps and devices used to move gas/vapor are referred to as compressors. These devices increase the pressure of the fluid to facilitate movement and to overcome friction. Pumps and compressors use seals to minimize introduction of atmosphere into the fluid stream on the suction side and minimize loss of VOC to atmosphere on the pressure side. Pumps and compressors may also have associated connectors and flanges to join to the fluid stream. Per industry reports, staff estimated that there are approximately 8,000 pumps in light liquid service, 2,200 pumps in heavy liquid service, and 600 compressors in South Coast AQMD. See Figure 1-4.

Figure 1-4 - Pump

Pressure Relief Devices (PRDs)

A pressure relief device, or PRD, is a device, used in situations to rapidly decrease pressure in fluid streams by venting to atmosphere or venting to a control device such as a flare or a vapor recovery system. Typically, PRDs are used as safety devices and are not supposed to be operated on a continuous basis. PRDs operate automatically, either actuated by an upstream static pressure that exceeds a predetermined value or through the rupturing of a membrane disc by excess pressure. PRDs comprise a pressure relief valve (PRV), one or more rupture discs, or some combination of these. PRDs also include all associated connectors or flanges. Figure 1-5 shows a PRD with associated threaded connectors. Facilities subject to Rule 1173 reported a total of approximately 6,300 PRDs in service, venting to atmosphere or venting to control devices.

Figure 1-5 - PRD

Fin Fans

A fin fan is a form of an air-cooled heat exchanger, used to reduce the temperature of a fluid stream by forcing ambient air over an array of tubes containing a fluid. See Figure 1-6. Many fin fan heat exchangers can be found installed in elevated settings to allow for unobstructed air flow.

Figure 1-6 - Fin Fan (Source: linkedin.com)

Access to the tubes to perform maintenance is provided by fin fan plugs, located on opposite ends of each tube. Fin fan plugs are identified by their row and column on a fin fan. See Figure 1-7. Previously, a fin fan plug, a type of threaded plug, was considered a component, specifically as a type of fitting, by South Coast AQMD. To improve clarity, fin fans themselves are now identified as a type of component, and includes fin fan plugs and all other associated connectors and flanges. Based on reported data and estimation, staff believes that there are approximately 450 fin fans in VOC service in South Coast AQMD and estimates that there are approximately 252,000 fin fan plugs.

Figure 1-7 - Fin Fan Plugs

Other Devices

In addition to these types of components previously discussed, four (4) other component types are identified in Rule 1173 and are collectively referred to as "other": 1) diaphragm; 2) hatch; 3) sight-glass; and 4) meter. Staff estimates that "other" devices make up approximately 122,000 components in South Coast AQMD. See Figure 1-8

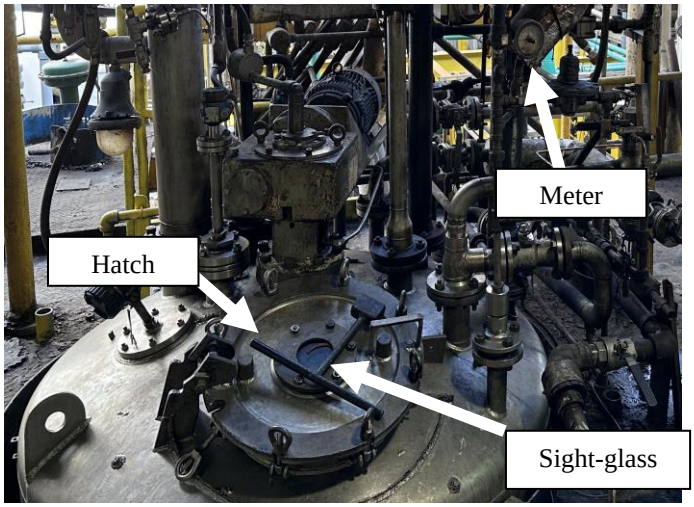


Figure 1-8 – Several other devices (hatch, sight-glass, meter)

BACKGROUND

Contingency Measure SIP Revision

The U.S. Environmental Protection Agency (U.S. EPA) requires areas that do not meet a National Ambient Air Quality Standard (NAAQS or standard) to develop and submit a State Implementation Plan (SIP) for approval. SIPs are used to show how the region will meet the standard. Regions must attain NAAQS by specific dates or face the possibility of sanctions by the federal government and other consequences under the Clean Air Act (CAA). This can result in

stricter restrictions for permitting new projects and the loss of federal highway funds. The South Coast AQMD SIPs are developed within the agency's Air Quality Management Plans (AQMPs).

In August 2018, the U.S. EPA designated the Basin as "extreme" nonattainment and the Coachella Valley as "severe-15" nonattainment for the 2015 8-hour ozone standard. The South Coast Air Basin (Basin) includes large areas of Los Angeles, Orange, Riverside, and San Bernardino counties. The Coachella Valley is the desert portion of Riverside County in the Salton Sea Air Basin. "Extreme" nonattainment areas must attain this standard by August 2038 and "severe" nonattainment areas must attain by August 2033.

Control Measures in the 2012, 2016, and 2022 Final AQMPs

On December 2, 2022, the South Coast AQMD Governing Board adopted the 2022 AQMP to achieve attainment for ozone. The 2022 AQMP is focused on attaining the 2015 8-hour ozone standard of 70 parts per billion (ppb) by 2037 for the Basin and 2032 for the Coachella Valley. The 2022 AQMP contains five proposed VOC measures for stationary sources, including FUG-01: Improved Leak Detection and Repair. FUG-01 proposes implementing the use of advanced LDAR technologies including optical gas imaging (OGI) devices, open path detection devices, and gas sensors for earlier detection of VOC emission from leaks.

The 2022 AQMD also made reference to incorporate co-benefits with reductions in greenhouse gas (GHG) emissions, such as methane and ethane, in order provide climate change assistance.

California Assembly Bill 617 and Community Emission Reductions Plans

In addition, Assembly Bill (AB) 617 was signed into California law in July 2017 and focuses on addressing local air pollution in environmental justice (EJ) communities. On September 27, 2018, the California Air Resources Board (CARB) designated 10 communities across the state to implement community plans for the first year of the AB 617 program. One of those communities was the Wilmington, Carson, West Long Beach (WCWLB) community.

In September 2019, the South Coast AQMD Governing Board adopted the Community Emission Reductions Plan (CERP) for the WCWLB community, outlining the actions and commitments by the Community Steering Committee (CSC), the South Coast AQMD, and the CARB, to reduce air pollution in the WCWLB community. Among the objectives of the WCWLB CERP include reducing fugitive VOC emissions as described in Chapter 5b Action 2. The WCWLB CERP identifies Rule 1173 and proposes reductions be achieved through rule amendments to detect and address VOC leaks. The CERP considered more rapid leak detection and response enabled by advanced air measurements and lowering allowable emissions from on-site equipment, such as emission concentrations.

REGULATORY HISTORY

Rule 1173 was originally adopted on July 7, 1989 and subsequently amended on several occasions:

1989 Rule Adoption

Rule 1173 was developed to reduce fugitive emissions from certain components, specifically valves, pumps, compressors, pressure relief devices (PRDs), diaphragms, fittings, sight-glasses, and meters located at certain facilities, specifically refineries, chemical plants, oil and gas fields, natural gas processing plants, and pipeline transfer stations. Rule 1173 was intended to phase out then-Rules 466, 466.1, and 467, which had been applicable to a more limited number of

components at some of the target facilities. Rule 1173 implemented the 1988 AQMP Control Measure #88-B-13.

1990 Amendments

The 1990 amendments to Rule 1173 were primarily administrative in nature. Upon notification by U.S. EPA that certain rules submitted to the State Implementation Plan (SIP), including Rule 1173, controlling emissions of VOC contain provisions that are not consistent with federal policies, the South Coast AQMD initiated rulemaking to correct 34 of the 90 identified deficiencies in 24 different rules. The 1990 amendments modified Rule 1173's VOC definition and deleted outdated compliance dates.

1994 Amendments

The 1994 amendments to Rule 1173 were also administrative changes. U.S. EPA identified three rules submitted to the SIP, including Rule 1173, with deficiencies. South Coast AQMD initiated rulemaking to correct these SIP deficiencies and PAR 1173 (1994) modified the definition for inaccessible components, modified approval of equivalent test methods, revised unsafe component exemption, added definition for exempt compounds, and made other minor clarifications.

2002 Amendments

The 2002 amendments to Rule 1173 proposed further reductions of fugitive VOC emissions from components at facilities by requiring an inspection and repair program for heavy liquids, reducing the leak threshold and time to repair components in light liquid service, and requiring capture and control of PRD releases or payment of a mitigation fee. This amendment implemented portions of 1997/99 AQMP Control Measures FUG-04 and FUG-05.

2007 Amendments

The 2007 amendments to Rule 1173 expanded the number of facilities subject to the rule by including lubricating oil and grease re-refiners and marine terminals. The amendment also required the implementation of an enhanced atmospheric PRD monitoring program at refineries. It implemented portions of Control Measure FUG-05 – Emission Reductions from Fugitive VOC Sources, of the 2003 AQMP.

2009 Amendments

The 2009 amendments to Rule 1173 were administrative in nature correcting internal rule references to address the installation schedule for continuous monitors for atmospheric process PRDs and exemptions.

AFFECTED FACILITIES AND EQUIPMENT

PAR 1173 affects approximately 2.6 million components and points of fugitive VOC emissions at approximately 203 facilities operating as refineries, chemical plants, lubricating oil and grease re-refiners, marine terminals, oil and gas production fields, natural gas processing plants and pipeline transfer stations.

PUBLIC PROCESS

Development of PAR 1173 was conducted through a public process. Four Working Group meetings were held on February 28, 2024, April 24, 2024, June 12, 2024, and July 11, 2024. The Working Group is composed of representatives from businesses, environmental groups, public agencies, and consultants. The purpose of the Working Group meetings is to discuss proposed

concepts and work through the details of South Coast AQMD's proposal. Additionally, a Public Workshop was held on July 26, 2024. The purpose of the Public Workshop was to present the proposed amended rule language to the general public and stakeholders, and to solicit comments. Staff also conducted multiple site visits as part of this rulemaking process.

COMMERCIAL NATURAL GAS DISCUSSION

As noted earlier in *Background*, staff is tasked with looking for co-benefits with GHG programs. Currently in Rule 1173, commercial natural gas, comprising methane and ethane with trace amounts of odorant gases, is exempted under Rule 1173, despite methane being a known greenhouse gas. Throughout working group meetings, site visits, and other meetings, staff exchanged with a variety of representatives to find common ground and build consensus around best management practices to reduce emissions of this GHG. After careful consideration and deliberation, staff concluded that requirements for commercial natural gas, comprised almost exclusively as methane and ethane and defined in Rule 102 as not to be considered VOCs, are not within the scope of Rule 1173 regarding VOC leaks and releases and left in place the existing exemption for commercial natural gas.

CHAPTER 2: BARCT ASSESSMENT

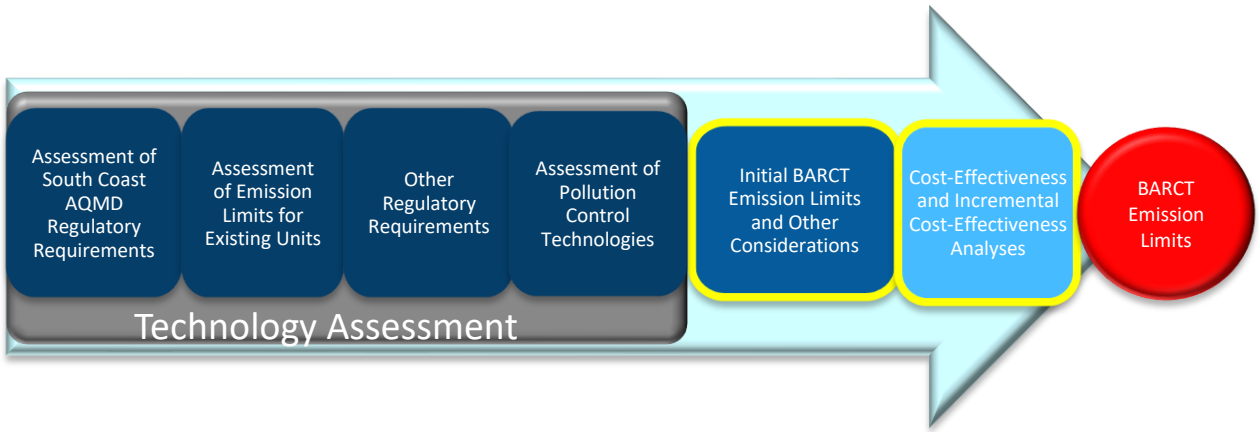
BARCT ANALYSIS APPROACH

PAR 1173 rule development was initiated in response to objectives in the WCWLB CERP for enhanced leak detection and to partially implement Control Measure FUG-01 in the 2022 Final AQMP. Additionally, South Coast AQMD periodically assesses rules to ensure that Best Available Retrofit Control Technology (BARCT) is reflected in rule requirements. To address community member objectives, partially implement Control Measure FUG-01, and ensure that Rule 1173 reflects BARCT, a BARCT assessment was conducted to identify the potential to further reduce emissions from components.

BARCT is defined in the Health & Safety Code Section 40406 as "an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source." Consistent with state law, BARCT emission limits take into consideration environmental impacts, energy impacts, and economic impacts. The BARCT analysis approach follows a series of steps conducted for each equipment category.

The steps for BARCT analysis consist of:

- Assessment of South Coast AQMD Regulatory Requirements
- Assessment of Emissions Limits for Existing Units
- Other Regulatory Requirements
- Assessment of Pollution Control Technologies
- Initial BARCT Emission Limits and Other Considerations
- Cost-Effectiveness and Incremental Cost-Effectiveness Analyses
- BARCT Emission Limit



The BARCT assessment included a review of leak detection technologies and emission reduction strategies. Newer leak detection technologies were reviewed including OGI devices, gas sensors, and open path detection. Leak detection methods were also analyzed with varying inspection frequencies. Lower leak standards for various types of components were also reviewed. Staff analyzed the potential to reduce emissions from leaks with enhanced leak detection technologies and reduce emissions from facility operations by establishing more stringent requirements for existing components.

As part of the technology assessment, a cost-effectiveness analysis was conducted for technologies with potential to reduce emissions. A cost-effectiveness analysis determines the cost per ton of pollutant reduced. In the 2022 AQMP, a cost-effectiveness threshold of $36,000 per ton of VOC reduced was established. After adjusting for inflation, the cost-effectiveness threshold is $40,170 per ton of VOC reduced (2023 U.S. Dollars). An incremental cost-effectiveness analysis was also conducted for proposed controls and monitoring methods to establish BARCT, if applicable, and is discussed in Chapter 4.

ASSESSMENT OF SOUTH COAST AQMD REGULATORY REQUIREMENTS

Rule 1173 applies to specific types of components at seven categories of facilities. Leaking components emit VOC through openings such as threaded connections, gaskets, seals, and other points of contact that degrade over time and require periodic monitoring to identify leakage, performance maintenance, and possible replacement of components to minimize emissions. Rule 1173 currently requires audio-visual inspections of certain components every 8 hours, quarterly analyzer leak checks for accessible components and annual analyzer leak checks for inaccessible components in accordance with U.S. EPA Method 21. Since the last non-administrative amendments to Rule 1173 in 2007, there have been advancements in the availability of leak monitoring technology including OGI devices, gas sensors, and open path detection. These technologies are included in the BARCT assessment.

ASSESSMENT OF EMISSION LIMITS FOR EXISTING UNITS

Rule 1173 currently has a variety of emission limits based on the type of component and type of service of the component. In addition, South Coast AQMD also completed an evaluation of the federal Lowest Achievable Emission Rate (LAER) requirement for major polluting facilities as well as the Best Available Control Technology (BACT) for new or modified petroleum refineries regarding fugitive VOC emission sources. Known as a LAER/BACT Determination, those emission limits, expressed in ppm, are also summarized in the Table 2-1 below:

Table 2-1 Emission Limits

Regulation	Rule 1173 (ppm)		LAER/BACT (ppm)
Service Type	Light Liquid or Gas/Vapor	Heavy Liquid	Light Liquid or Gas/Vapor
Valve, Fitting, Other*	500	100	200
PRDs	200	100	200
Pump, Compressor	500	100	N/A

*Fitting also includes fin fan plugs. Other includes diaphragms, hatches, sight-glasses, and meters

Regarding advanced leak monitoring technologies, Rule 1173 currently does not have an advanced leak monitoring requirement, such as OGI. Other South Coast AQMD rules, specifically Rules 1178, 463, and 1148.1 have advanced monitoring frequencies summarized in the Table 2-2 below:

Table 2-2 Monitoring Requirements in Other South Coast AQMD Rules			
Regulation	Rule 1178	Rule 463	Rule 1148.1
OGI Monitoring Requirement	Every two weeks	Monthly	Monthly

OTHER REGULATORY REQUIREMENTS

Staff reviewed rules and regulations from other air districts including Bay Area AQMD, San Joaquin Valley Air Pollution Control District (APCD), and Santa Barbara County APCD. The inspections are conducted with analyzers and no rule in other air districts requires the use of advanced monitoring equipment like OGI. Those emission limits, expressed in ppm, are summarized in the Table 2-3 below:

Table 2-3 Leak Standards in Other Air Districts (expressed in ppm)						
Air District	Bay Area	San Joaquin Valley			Santa Barbara County	
Regulation	Rule 8-18	Rule 4409	Rule 4455	BACT	Rule 331	BACT
Valve, Fitting	100	500	L: 200 G/V: 400	100	1,000	100
Other*	100	500	L: 500 G/V: 1,000	100	1,000	100
Pump, Compressor	500	500	L: 500 G/V: 1,000	100	1,000	100
PRD	500	L: 200 G/V: 400	L: 100 G/V: 200	100	1,000	100
*Other includes diaphragms, hatches, sight-glasses, and meters (L = liquid, G/V = gas/vapor)						

On November 20, 2023, Bay Area AQMD released a draft with proposed amendments to their Rule 8-18, including lowering some leak standards to 50 ppm. On September 4, 2024, amendments to Bay Area AQMD Rule 8-18 were adopted that do not include a 50 ppm leak standard.

ASSESSMENT OF POLLUTION CONTROL TECHNOLOGIES

Multiple leak detection technologies and methods were considered to reduce the emissions impact from leaks from components. A review of continuous monitoring technologies including fixed gas

sensor networks and open path device systems was conducted. Periodic monitoring with handheld optical gas imaging devices was also reviewed.

Continuous monitoring solutions using open path detection and fixed gas sensor networks were assessed in 2023 for PAR 1178 rulemaking and again in 2024 for PAR 463 rulemaking regarding tanks. It was determined that the best solution for monitoring tanks is to require periodic monitoring with handheld OGI devices due to their ability to detect small and large leaks at varying distances. In regard to monitoring components, the advantage of handheld OGI devices versus open path and gas sensor methods is accentuated. Continuous monitoring systems are limited in their ability to detect smaller leaks because they are installed at a distance from the source of emissions. Depending on the detection technology of the continuous monitoring system, a leak may go undetected unless the leak is significantly large at the source . With gas sensors or open path devices, the leak may go undetected if it does not make contact with the fixed sensor or emitted open path beam. Therefore, continuous monitoring systems with sensors that must come in contact with the VOC vapor may not be the most effective technologies to reduce the emissions impact from component leaks. Another drawback to requiring continuous monitoring systems is delayed implementation due to plan approval and installation timeframes. Staff assessed that the advanced monitoring technology most suitable to identify sources of leaks at the component level is handheld OGI devices.

Periodic Monitoring with Optical Gas Imaging

An optical gas imaging camera uses infrared technology capable of visualizing vapors. Optical gas imaging cameras have different detectors capable of visualizing a variety of gas wavelengths. VOC wavelengths are in the 3.2-3.4 micrometer waveband. The difference in views is shown in Figure 2-1.

Figure 2-1: View with naked eye compared to view with an OGI camera

OGI cameras with the ability to detect or visualize in this waveband range contain a cryocooler that is integrated into the sensor and increases the sensitivity of the camera to detect smaller leaks. OGI cameras are widely used as a screening tool for leak detection purposes and have continuous monitoring capability. Fixed OGI systems have been implemented at well sites and compression stations for continuous emissions monitoring. Handheld OGI cameras, as seen in Figure 2-2, are used widely by leak detection service providers as well as facilities for periodic monitoring.

Figure 2-2- OGI camera

Fixed OGI cameras may not catch all leaks that can be identified during an inspection where a portable OGI device is manually operated. Fixed OGI cameras are limited in the number of angles viewed and would likely be stationed further away from an emissions source compared to a person conducting an inspection with a portable OGI device. Stationary and portable devices both have the capability to detect large leaks, however, there is greater chance that smaller leaks would be identified with a manual field inspection than with a stationary camera because components can be monitored in close proximity using portable devices such as handheld OGI cameras and toxic vapor analyzers (TVA).

INITIAL BARCT EMISSION LIMIT AND OTHER CONSIDERATIONS

Leak Standards

After review of other pending and finalized leak standards in other air districts, staff considered the following leak standards as initial BARCT emission limits with several other incremental leak standards for determination of cost-effectiveness and incremental cost-effectiveness, summarized in the Table 2-4 below. As noted in Chapter 1, to ensure clarity, staff has bifurcated fin fan plugs from other types of fittings and classified these under a newly-defined component type “Fin Fan”.

Table 2-4 Initial BARCT Limits

Component Type	Initial BARCT Leak Standard (ppm)
Valve, Fitting, Other*	50
Pump (Light Liquid), Compressor	50
PRD	50
Fin Fan	50
*Other includes diaphragms, hatches, sight-glasses, and meters	

OGI Inspection Frequency

After review of other South Coast AQMD rules requiring OGI device inspection, staff considered weekly OGI inspection as the initial BARCT limit with several other less frequent inspection schedules for determination of cost-effectiveness and incremental cost-effectiveness.

COST-EFFECTIVENESS AND INCREMENTAL COST-EFFECTIVENESS ANALYSES

Leak Standards

Lower leak standards are expected to increase the number of leaks detected above the leak standard, leading to increased maintenance and repair cost. Lower leak standards are also expected to decrease the baseline fugitive VOC emissions from components in compliance with the leak standards. To understand how many more leaks are to be expected and the VOC emission rate of components in compliance, staff studied Rule 1173 leak reports submitted to South Coast AQMD.

Rule 1173 requires recordkeeping of component leaks and repairs, and further requires facilities to submit these records quarterly, as Rule 1173 Component Leak Report (Form C) and Rule 1173 Statistics Summary Sheet (Form D). Staff examined all leak reports submitted for calendar year 2023, 4th quarter. For each grouping of components, the distribution of leak values above the leak standard was counted. The component groups demonstrated certain trends when examined for power trendlines, as demonstrated in the Figures 2-3, 2-4, 2-5, and 2-6 below. For component type fin fan, leak reports regarding fittings were used for trends.

Figure 2-3 Distribution of Valve, Fitting, Other Leaks

Range: 500 ppm to 11,000 ppm, Grouping: by 100

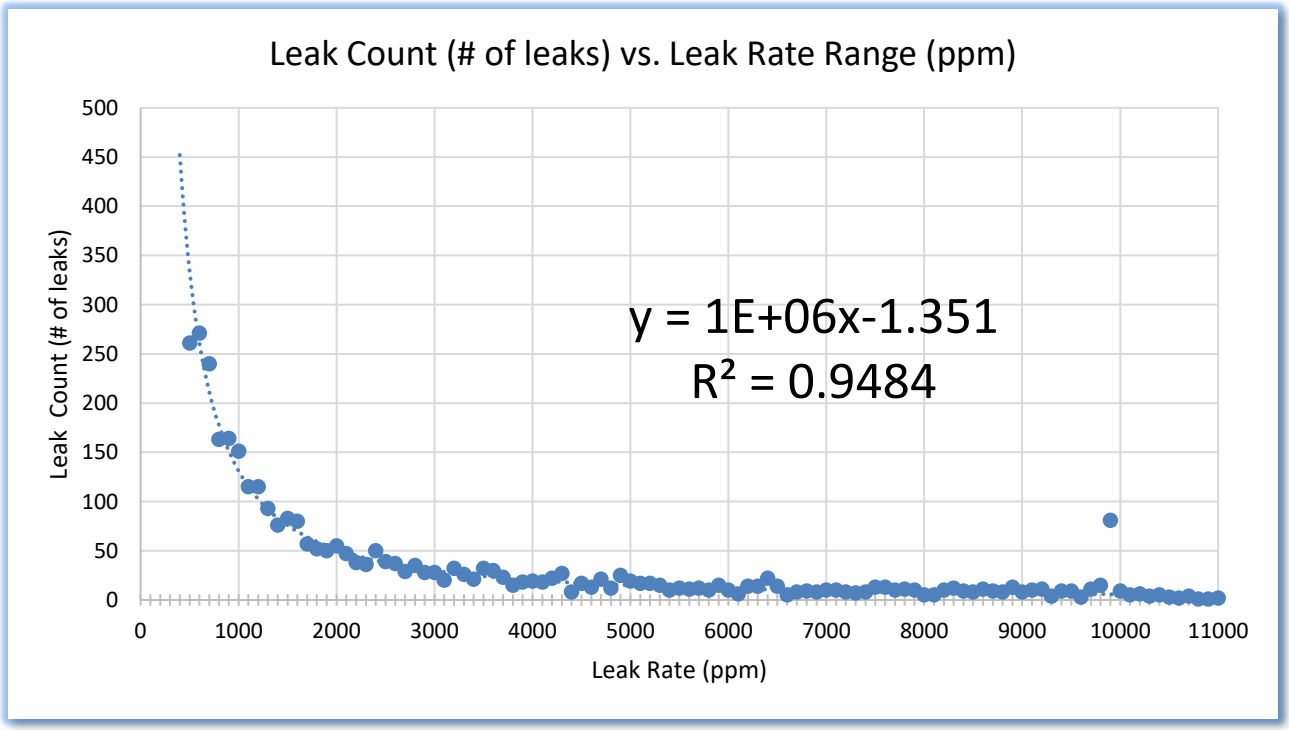


Figure 2-4 Distribution of Pump (Light Liquid), Compressor Leaks

Range: 500 ppm to 11,000 ppm, Grouping: by 250

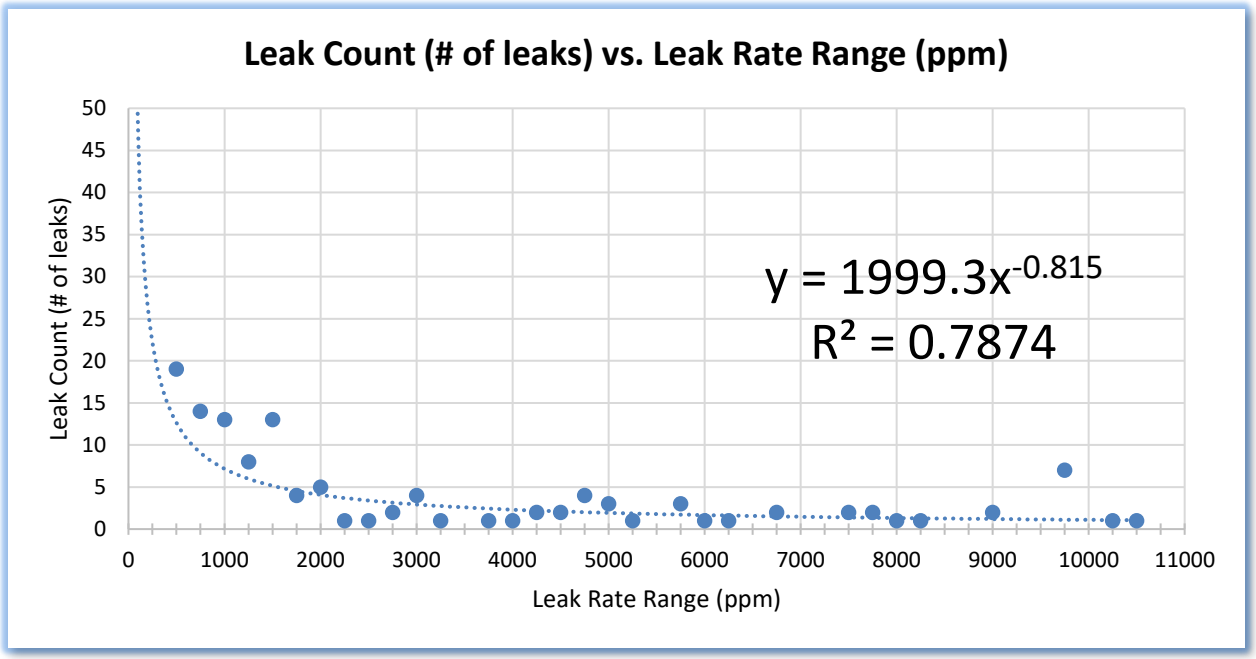


Figure 2-5 Distribution of PRD Leaks

Range: 200 ppm to 11,000 ppm, Grouping: by 500

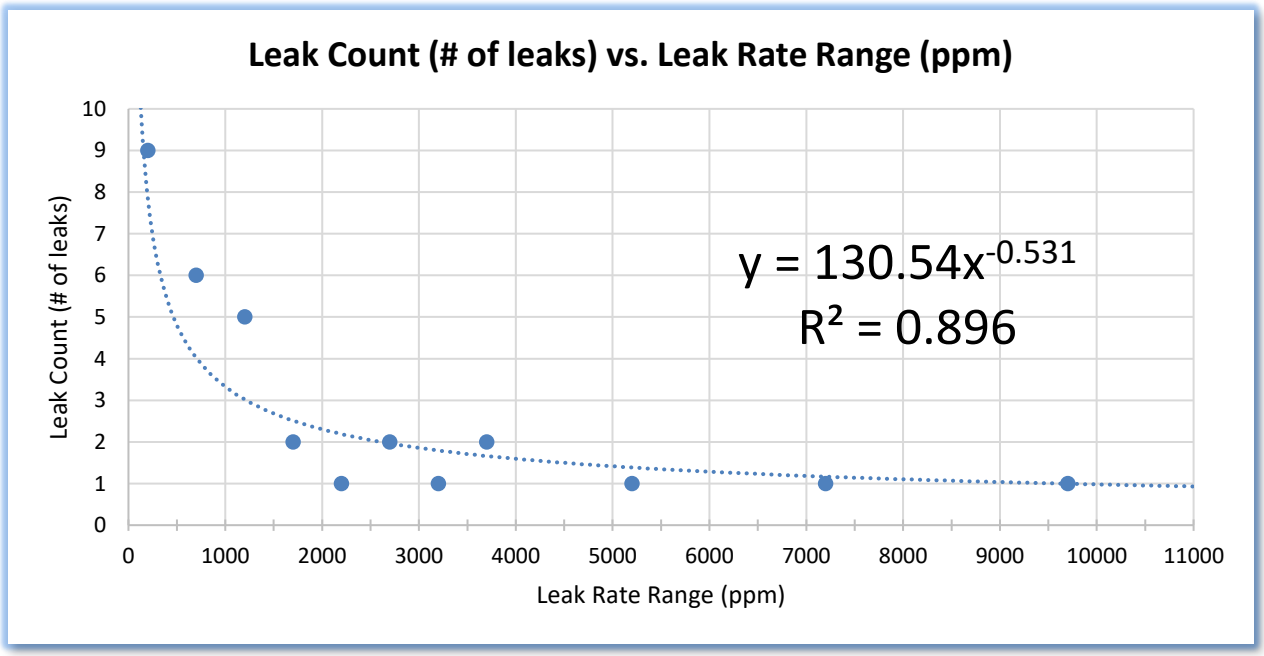
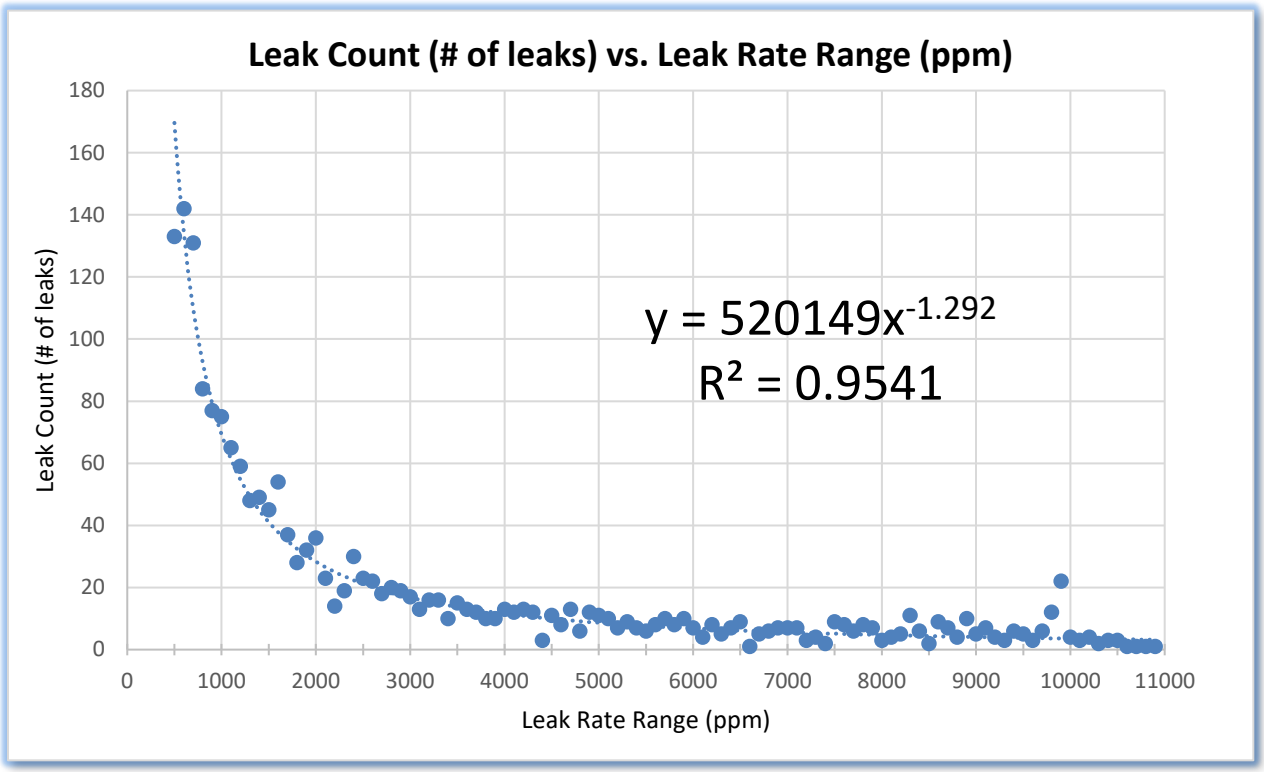


Figure 2-6 Distribution of Fin Fan Leaks (from Fitting data)

Range: 500 ppm to 11,000 ppm, Grouping: by 100



These curves and power trendlines are able to predict, with relatively high confidence, the number of additional leaks estimated above a leak standard at differing leak values:

Fitting, Valve, Other:

$$Additional\ quarterly\ leaks\ at\ leak\ value = 10^6 \times (leak\ value)^{-1.351}$$

Pump (Light Liquid) and Compressor:

$$Additional\ quarterly\ leaks\ at\ leak\ value = 1999.3 \times (leak\ value)^{-0.815}$$

PRD:

$$Additional\ quarterly\ leaks\ at\ leak\ value = 130.54 \times (leak\ value)^{-0.531}$$

Fin Fan:

$$Additional\ quarterly\ leaks\ at\ leak\ value = 520{,}149 \times (leak\ value)^{-1.292}$$

For example, for component type fitting, valve, other, at a leak value of 400 ppm, 305 additional leaks are estimated each quarter at that leak value range. Therefore, 1,220 additional leaks are

estimated each year at a leak standard of 400 ppm. At a leak value of 300 ppm, 455 additional leaks are estimated each quarter at that leak value range. At a leak value of 300 ppm, 305 + 405 = 755 additional leaks are expected in the 300 and 400 leak value range. Thus, 3,020 additional leaks are estimated each year at a leak standard of 300 ppm. Additional leak estimates are listed below in Table 2-5 for various lower leak standards:

Table 2-5 Estimated Additional Leaks Per Year

Leak Standard (ppm)	Fitting, Valve, Other	Pump (Light Liquid), Compressor	PRD	Fin Fan (as expressed in Fin Fan Plugs)
500	Current leak standard	Current leak standard		Current leak standard
400	1,220	60		106
300	3,020	136		325
200	6,136	244	Current leak standard	649
100	14,080	432	44	1,444
50	34,344	760	76	4,547

Each of these estimated additional leaks has a cost associated with its repair. In 2023, San Joaquin Valley APCD amended their VOC component rules, including Rules 4409 and 4455. The Staff Report[1] for that rulemaking contains Table C-4: *Constant in Quantifying Repairing and Replacing Components* which itemized component replacement costs, percentage needing repair versus replacement, repair labor costs, and average repair or replacement times. To determine if the San Joaquin Valley APCD method is appropriate for South Coast AQMD, staff compared prevailing wage rates in Los Angeles County for various crafts and classifications as published by the California Department of Industrial Relations and found all average hourly wages for trade groups expected to perform repair to be less than the hourly rate used by San Joaquin Valley APCD ($133/hour). Cost of materials is expected to be similar statewide. These costs were shared with stakeholders to receive feedback. Applying the San Joaquin Valley APCD method to the distribution of leaks detected in South Coast AQMD for calendar year 2023, 4th quarter yields a cost for each component type of repair as seen in Table 2-6 below. For repair of fin fan plugs, staff spoke with stakeholders and industry sources and determined average repair cost for a fin fan plug while in operation. For repair of fin fan plugs during process unit shutdown, staff employed the same repair cost as component type Fitting, Valve, Other:

[1] https://ww2.valleyair.org/media/vptf4eg2/gb-item.pdf

Table 2-6 Repair Cost by Component Type				
Fitting, Valve, Other	Pump (Light Liquid), Compressor	PRD	Fin Fan, during operation	Fin Fan, during shutdown
$711.56	$5,486.10	$5,541.40	$10,000.00	$711.56

Multiplying the number of estimated leaks by the cost of repair for each leak yields the annual additional cost of implementing each lower leak standard, summarized in the Table 2-7 below. For fin fans, staff assumed that additional leaks detected would be repaired during periods of process unit shutdown:

Table 2-7 Estimated Annual Cost of Lower Leak Standards				
Leak Standard (ppm)	Fitting, Valve, Other	Pump (Light Liquid), Compressor	PRD	Fin Fan
500	Current leak standard	Current leak standard		Current leak standard
400	$868,000	$329,000		$75,000
300	$2,149,000	$746,000		$231,000
200	$4,366,000	$1,339,000	Current leak standard	$462,000
100	$10,019,000	$2,370,000	$244,000	$1,027,000
50	$24,438,000	$4,169,000	$598,000	$2,411,000

To determine baseline fugitive VOC emissions from components in compliance with PAR 1173, staff estimated VOC emissions using methods in South Coast AQMD Annual Emission Reporting (AER) document *Guidelines for Reporting VOC Emissions from Component Leaks*, revised February 2015[2], specifically Method 2 – Correlation Equation Method. Based on California Air Pollution Control Officers Association (CAPCOA)-revised 1995 U.S. EPA correlation equations and factors for refineries and marketing terminals, it provides a method to estimate VOC emissions based on component type and screening value in ppm.

Similar to the estimated annual cost at various leak standards, estimate average screening values at various leak standards should be developed. Looking again at the estimated additional leaks at

[2] http://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/guidelreportvocemiscomleaks.pdf

each leak standard, staff developed an estimated average screening value based on a weighted average of estimated leak counts at each leak standard by the formula:

$$Estimated\ Average\ Screening\ Value\ @\ Leak\ Standard\ (ppm) = \frac{\sum(leak\ value \times number\ of\ leaks\ at\ leak\ value)}{\sum number\ of\ leaks\ at\ leak\ value}$$

For example, for component type fitting, valve, other, at a leak value of 500 ppm, there were 261 actual leaks at that leak value range in calendar year 2023, 4th quarter. At a leak value of 400 ppm, 305 additional leaks are estimated each quarter at that leak value range. At 300 ppm, 450 additional leaks are estimated. And at 200, 100, and 50 ppm, 779, 1,986, and 5,066 leaks are estimated, respectively. Thus, the estimated average screening value for a 500 ppm leak standard is 112 ppm as calculated below:

$$Estimated\ Average\ Screening\ Value\ @\ 500\ ppm = \frac{(500 \times 261) + (400 \times 305) + (300 \times 450) + (200 \times 779) + (100 \times 1{,}986) + (50 \times 5{,}066)}{261 + 305 + 450 + 779 + 1{,}986 + 5{,}066}$$

For the lowest leak standard considered, 50 ppm, the leak standard is used at the estimated average screening value. Estimated average screening values associated with each leak standard are listed in Table 2-8 below:

Table 2-8 Estimated Average Screening Value

Leak Standard (ppm)	Fitting, Valve, Other (ppm)	Pump (Light Liquid), Compressor (ppm)	PRD (ppm)	Fin Fan (ppm)
500	112	169		113
400	101	136		104
300	90	114		92
200	78	91	103	79
100	64	68	70	63
50	50	50	50	50

The number of components reported to South Coast AQMD in calendar year 2023, 4th quarter are or are estimated to be as listed in Table 2-9:

Table 2-9 Number of Components by Type	
Component Type	Components in South Coast AQMD
Valve	498,640
Fitting (Connectors and Flanges)	1,720,410
• Connector (assumed 90% of Fittings)	*1,548,370 (estimated)*
• Flange (assumed 10% of Fittings)	*172,040 (estimated)*
Other (diaphragms, hatches, sight-glasses, and meters)	122,390
Pump (Light Liquid)	7,950
Compressor	640
PRD	6,350
• Fin Fan Plug (assumed 560 fin fan plugs per fin fan and 450 estimated fin fans)	*252,000 (estimated)*

Estimating baseline fugitive VOC emissions from each component category at various leak standards using AER Method 2 yields the following table, Table 2-10:

Table 2-10 Baseline Annual VOC emissions (in tons)				
Leak Standard (ppm)	Fitting, Valve, Other	Pump (Light Liquid), Compressor	PRD	Fin Fan (as expressed in Plugs)
500	1,529.2	96.3		120.7
400	1,419.3	84.1		113.5
300	1,306.0	75.4		103.7
200	1,177.0	65.5	10.5	92.7
100	1,021.4	54.7	8.2	78.5
50	855.0	45.1	6.6	66.2

With estimated annual cost for each leak standard and estimated emission reductions derived from the difference between baseline annual VOC emissions, the following tables, Tables 2-11 through 2-14, present cost-effectiveness and incremental cost-effectiveness for each category of component:

Table 2-11 Cost-effectiveness and Incremental Cost-effectiveness for Fitting, Valve, Other					
	400 ppm	300 ppm	200 ppm	100 ppm	50 ppm
Estimated cost per year	$868,000	$2,149,000	$4,366,000	$10,019,000	$24,438,000
VOC Emission Reduction (tons)	109.9	223.2	351.2	507.8	674.2
Cost-Effectiveness (per ton VOC)	$7,900	$9,600	$12,400	$19,700	$36,200
Incremental Cost-Effectiveness (per ton VOC)		$11,300	$17,300	$36,100	$86,600

Table 2-12 Cost-effectiveness and Incremental Cost-effectiveness for Pump (Light Liquid), Compressor					
	400 ppm	300 ppm	200 ppm	100 ppm	50 ppm
Estimated cost per year	$329,000	$746,000	$1,339,000	$2,370,000	$4,169,000
VOC Emission Reduction (tons)	12.2	20.9	30.8	41.6	51.2
Cost-Effectiveness (per ton VOC)	$27,000	$35,600	$43,500	$56,900	$81,500
Incremental Cost-Effectiveness (per ton VOC)		$47,700	$60,100	$94,900	$189,000

Table 2-13 Cost-effectiveness and Incremental Cost-effectiveness for PRD		
	100 ppm	50 ppm
Estimated cost per year	$244,000	$598,000
VOC Emission Reduction (tons)	2.3	3.9
Cost-Effectiveness (per ton VOC)	$106,500	$154,200
Incremental Cost-Effectiveness (per ton VOC)		$223,100

Table 2-14 Cost-effectiveness and Incremental Cost-effectiveness for Fin Fan					
	400 ppm	300 ppm	200 ppm	100 ppm	50 ppm
Estimated cost per year	$75,000	$231,000	$462,000	$1,027,000	$2,411,000
VOC Emission Reduction (tons)	7.2	16.9	27.9	42.2	54.5
Cost-Effectiveness (per ton VOC)	$10,500	$13,700	$16,500	$24,400	$44,300
Incremental Cost-Effectiveness (per ton VOC)		$15,900	$21,000	$39,800	$112,700

Based on leak standards that are both cost-effective and incrementally cost-effective, the proposed BARCT limits are as follows in Table 2-15:

Table 2-15 Proposed Component Leak Standards			
Component Type	Leak Standard (ppm)	Cost-Effectiveness (per ton VOC)	Incremental Cost-Effectiveness (per ton VOC)
Fitting, Valve, Other	100	$19,700	$36,100
Pump	400	$27,000	$0
Pressure Relief Device	200	$0	$0
Fin Fan	100	$24,400	$39,800

OGI Inspection Frequency

Frequent OGI inspections are expected to increase capital costs as more cameras are likely to be needed, and further increase recurring costs for maintenance of the camera and labor by trained operators. However, frequent OGI inspections are expected to catch more leaks and reduce VOC emissions associated with larger leaks.

To build a model to determine cost-effectiveness and incremental cost-effectiveness, staff used several assumptions regarding OGI cameras. First, manufacturers of OGI cameras claim that they are capable of inspecting 10,000 components per day. While some facilities may approach that efficiency, some may not. Thus, staff conservatively estimated that each OGI camera will be used

to inspect 5,000 components per operating day. For South Coast AQMD's 2.6 million components, including an estimated 252,000 fin fan plugs, the number of OGI cameras needed to implement the inspection schedule is listed in the table 2-15 below:

Table 2-16 OGI Camera Needed for PAR 1173				
	Every 2 Months	Monthly	Every 2 Weeks	Weekly
OGI cameras	13	25	53	105

Regarding capital costs, staff assumed the average cost per camera to be $120,000, consistent with rulemaking for Rule 463, amended in June 2024. OGI cameras have an expected life span of 10 years, and annual maintenance and associated shipping costs are documented to be $4,874. Labor costs for implementation are $413.88 per operating day, inflation-adjusted from a $400 figure used in the PAR 1178 rulemaking. In accordance with South Coast AQMD practice to use the Discounted Cash Flow method to account for capital costs, with an interest rate of 4% and life of equipment of 10 years yields $PVF_{(4,10)} = 8.11$. Thus, the Present Value of each OGI camera over 10 years is calculated at $1,005,478, or $100,548 per year. The cost associated with various inspection frequencies is listed in the table 2-16 below:

Table 2-17 OGI Inspection Cost by Frequency				
	Every 2 Months	Monthly	Every 2 Weeks	Weekly
Total Cost over 10 years	$13,333,000	$25,137,000	$54,713,000	$108,394,000
Annual Cost	$1,333,000	$2,514,000	$5,471,000	$10,839,000

To estimate emissions associated with leaks detectable with an OGI device, staff reviewed again the calendar year 2023, 4th quarter leak reports. Manufacturers of OGI cameras report that their devices are capable of detecting leaks in the 2,000 ppm to 5,000 ppm range. Staff took a conservative approach and determined the number of leaks at or above 5,000 ppm extrapolated per year. To determine the emissions associated with these leaks, staff again referred to the South Coast AQMD AER guidance document and employed the specific leak emission factor based on component type. There are two leak emission factors: one based on a pegged factor at 10,000 ppm and one based on a pegged factor at 100,000 ppm. Staff used the lower, more conservative factor in calculations.

At present, leaks are detected using U.S. EPA Method 21 equipment at a frequency of once per calendar quarter. Assuming these leaks persist for one-half of the time between inspections, or 45 days, estimates of current annual emissions from larger leaks that could detected by OGI cameras are listed below in Table 2-17. For leaks associated with fin fan plugs, persistence time is estimated to be a half-year as most fin fan plugs are considered inaccessible components and thus are inspected annually instead of quarterly.

Table 2-18 Estimated Leaks and Emissions Reductions from Use of OGI								
	Connector	Flange	Valve	Pump Seal	Other	Compressor	PRD	Fin Fan
Annual Leaks	2,286	254	928	100	436	44	28	268
Emission Factor (lb/hr)	0.066	0.209	0.141	0.196	0.181	0.181	0.181	0.066
Emissions (tons/year)	81.5	28.7	70.7	10.6	42.6	4.3	2.7	38.7

The total amount of VOC emissions associated with leaks greater than 5,000 ppm is estimated at 279.8 tons per year.

VOC emissions associated with these larger leaks can be reduced with more frequent inspections using OGI devices. The emissions and associated reductions with each OGI inspection schedule are listed in the Table 2-19 below:

Table 2-19 OGI Emission Reductions by Inspection Frequency				
	Every 2 Months	Monthly	Every 2 Weeks	Weekly
Leak Emissions (tons/year)	167.1	83.5	39.0	19.5
Emission Reduction (tons/year)	112.7	196.2	240.8	260.3

Combining the costs with the associated emission reduction, Table 2-20 presents cost-effectiveness and incremental cost-effectiveness of each implementation schedule:

Table 2-20 OGI Cost-Effectiveness and Incremental Cost-Effectiveness by Inspection Frequency				
	Every 2 Months	Monthly	Every 2 Weeks	Weekly
Annual Cost	$1,333,000	$2,514,000	$5,471,000	$10,839,000
Emission Reduction (tons/year)	112.7	196.2	240.8	260.3
Cost-Effectiveness (per ton VOC)	$11,800	$12,800	$22,700	$41,600
Incremental Cost-Effectiveness (per ton VOC)		$14,100	$66,400	$275,400

OGI component inspection frequency every month was found to be cost-effective and incrementally cost-effective.

BARCT EMISSION LIMIT RECOMMENDATION SUMMARY

Based on the BARCT assessment, staff proposes to lower the leak standard for component category fitting, valve, other to 100 ppm, lower the leak standard for component category pump (light liquid), compressor to 400 ppm, set leak standards for fin fans to 100 ppm, and set an OGI inspection frequency of monthly. Table 2-21 below shows the cost-effectiveness for proposed requirements:

Table 2-21 BARCT Assessment Summary	
Proposed Requirement	Cost-Effectiveness ($/ton)
100 ppm leak standard for component type fitting, valve, other	$19,700
200 ppm leak standard for pressure relief devices	$0 (No change)
400 ppm leak standard for component type pump (light liquid), compressor	$27,000
100 ppm leak standard for component type fin fan	$24,400
OGI component inspection frequency every month	$12,800

CHAPTER 3: SUMMARY OF PROPOSALS

INTRODUCTION

PROPOSED AMENDED RULE STRUCTURE

PROPOSED AMENDED RULE 1173

INTRODUCTION

PAR 1173 lowers leak standards for certain types of components and adds OGI inspection requirements on components. PAR 1173 also includes ozone contingencies measures to comply with federal requirements.

The following information describes the structure of PAR 1173 and explains the provisions incorporated from other source-specific rules. New provisions and any modifications to provisions that have been incorporated are also explained. PAR 1173 also includes grammatical and editorial changes for clarity.

PROPOSED AMENDED RULE STRUCTURE

PAR 1173 will contain the following subdivisions:

(a) Purpose
(b) Applicability
(c) Definitions
(d) South Coast AQMD Inspection Procedures
(e) Identification Requirements
(f) Self Inspection Requirements
(g) Leak Standards and Repair Requirements
(h) Atmospheric Process PRD Requirements
(i) Recordkeeping and Reporting Requirements
(j) Test Methods
(k) Ozone Contingency Measures
(l) Exemptions
(m) Interim Procedures and Requirements

PROPOSED AMENDED RULE 1173

Subdivision (a) *Purpose*

The purpose of this rule is expanded to include reference to contingency measures to fulfill federal requirements and partial implementation of the 2022 AQMP.

Subdivision (b) *Applicability*

The types of facilities applicable to this rule are not changed as a result of PAR 1173. Additional language was added to ensure subdivision (k) *Ozone Contingency Measures* is applicable upon approval by U.S. EPA.

Subdivision (c) *Definitions*

Several definitions were added, deleted, or substantially modified for clarity and consistency. Subdivision-wide, definitions of each applicable facility type have been updated from older Standard Industrial Classification (SIC) code references to newer North American Industry Classification System (NAICS) code references. Note: NAICS codes are included for guidance only and are not meant to be a criterion for determining applicability. Other key definition changes are discussed below:

- *Atmospheric Process PRD* – replaces existing definition for Process PRD for consistency with usage in rule language.
- *Component* – modified to incorporate newly-defined "Fin Fan" component type.
- *Compressor Seal* – added to fully explain the part of a compressor used for sealing purposes.
- *Connector* – added to fully explain a type of fitting connection and part of other components.
- *Contingency Measure* – added to implement federal requirements.
- *Essential Component* – added to implement limited delay of repair provision for certain types of components that cannot be isolated.
- *Facility* – definition deleted.
- *Field Gas* – definition deleted.
- *Fin Fan* – added to increase clarity and ensure accurate reporting.
- *Fin Fan Plug* – added to increase clarity and ensure accurate reporting.
- *Fitting* – modified to increase clarity and include examples.
- *Flange* – added to fully explain a type of fitting connection and parts of other components or other equipment for connection and access for cleaning, inspection, and modification.
- *Inspection* – modified to trifurcate existing "Operator Inspection" sub-definition into three new sub-definitions:
    - Audio-Visual-Olfactory (AVO) Inspection, by hearing, by sight, and by smell,
    - Optical Gas Imaging (OGI) Inspection, of multiple components simultaneously from a platform, ground level, or a vantage point, and
    - Analyzer Inspection, of individual components potential sources of leaks. Some elements of components, such as piping itself or fin fan tubes, are not considered potential sources of leaks.
- *Leak* – modified to remove reference to liquid leaks.
- *Optical Gas Imaging (OGI) Device* – added to implement OGI inspection requirements.
- *Outage* – added to implement limited delay of repair and fin fan repair schedule, complementing defined term "turnaround". A process unit temporarily in suspense and not in shutdown, with a fluid stream in recirculation such as in "hot standby mode", does not meet the definition of an outage. In addition, a process unit shutdown lasting less than 24 hours does not meet the definition of an outage, consistent with federal regulations.
- *Process PRD* – definition deleted and replaced by Atmospheric Process PRD definition.
- *Process Unit* – added to ensure clarity and implement limited delay of repair and fin fan repair schedule
- *Pump Seal* – added to fully explain the part of a pump used for sealing purposes.
- *Refinery* – modified to ensure refineries that produce refined products but may use non-petroleum-based feedstock be and continue to be considered refineries.
- *Repair* – modified to include newly-defined visible leaks and visible vapors and clarify that Repair may include replacing components and other actions.
- *South Coast Air Basin* – added to implement federal requirements related to contingency measures.
- *Visible Leak* – added by bifurcation from existing leak definition and clarified.
- *Visible Vapors* – added to implement OGI inspection requirements.

Note: On October 24, 2008, South Coast AQMD issued a compliance advisory regarding Rule 1173 providing guidance regarding the term "encrypted" used within the definition of *tamper-proof*. In that context, encrypted was explained to include transmission and handling of the signal from the field device to the base radio. If the handling of the data from the base radio to the data storage device is wireless, that transmission shall be encrypted, and the data transmitted and stored within the data storage unit shall be labeled by date and time (i.e., data are date stamped). If the handling of the data from the base radio to the data storage device is transmitted through a hard-wired communication connection, then such equipment shall be considered *tamper-proof* as required by Rule 1173 if the data transmitted and stored within the data storage unit is labeled by date and time (i.e., data are date stamped). In addition, all changes to data transmitted from field device to the base radio and from the base radio to the data storage unit must be documented and available to the Executive Officer upon request.

Subdivision (d) *South Coast AQMD Inspection Procedures*

Formerly titled *Leak Standards*, PAR 1173 modifies existing South Coast AQMD (formerly referred to as "District" in rule language) inspection procedures. The former provisions have been moved to subdivision (m) – *Interim Procedures and Requirements*. Effective January 1, 2026, PAR 1173 reduces the violation standard for components in light liquid and gas/vapor service from the existing 50,000 ppm violation standard to a new 10,000 ppm violation standard and places this new violation standard and the existing 500 ppm violation standard for heavy liquids in new Table 1 – *Violation Standards*.

PAR 1173 also clearly identifies visible leaks, both light liquid and heavy liquid, as subject to Notice of Violation. Further, PAR 1173 replaces the existing Table 1 – *Leak Thresholds* violation pathway with a new OGI-based violation pathway pertaining to visible vapors from components in VOC service. Upon detection of visible vapors by South Coast AQMD personnel using an OGI device, PAR 1173 provides a pathway for the owner or operator to not be subject to a Notice of Violation for these visible vapors if able to concurrently demonstrate, using a Method 21 analyzer, that the component is emitting below the violation standard at the time of the visible vapors.

For inaccessible components, the owner or operator may demonstrate that the component is emitting below the violation standard within one (1) day. Staff believes with the use of extension probes, ladders, and lifts, one (1) day is sufficient to access inaccessible components with an analyzer for the purpose of determining VOC leak rate of components with visible vapors. In that demonstration, South Coast AQMD personnel need not be present, but the owner or operator must comply with U.S. EPA Method 21 procedures using an analyzer in calibration with proper documentation, such as monitoring logs and photographs. In either case, an owner or operator will

still be subject to a Notice of Violation if South Coast AQMD personnel, using an analyzer, finds that the leak exceeds violation standards, despite the findings from an owner or operator analyzer.

Note: The term *inaccessible component* is defined within Rule 1173 and refers to "permanent support surfaces" in that definition. Temporary scaffolding, as shown in Figure 3-1, or various forms of personnel lifts do not meet the definition of a "permanent support surface", even if scaffolding remains onsite unconstructed or if lifts are available onsite.

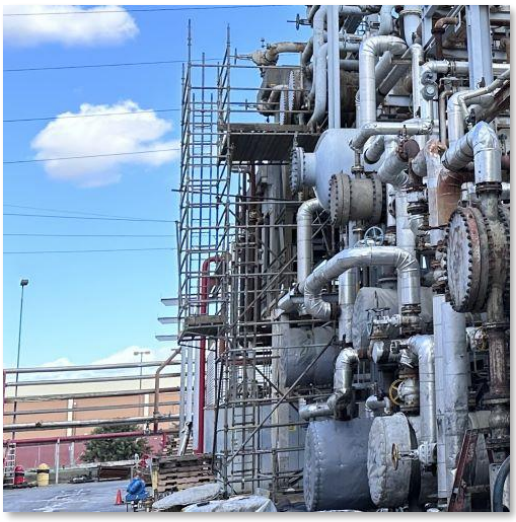


Figure 3-1 - Temporary scaffolding

The provisions in the former paragraph (d)(2), which allowed a facility to adjust a leak measurement to exclude methane and ethane, have been removed.

Subdivision (e) *Identification Requirements*

PAR 1173 requires all major components, including fin fans, be tagged clearly and visibly and minor components to be identified in piping and instrumentation flow diagrams. PAR 1173 adds an additional tagging requirement for leaking components under repair. Individual fin fan plugs are not required to be tagged unless leaking.

Subdivision (f) *Self Inspection Requirements*

Formerly titled *Operator Inspection Requirements*, PAR 1173 sets and revises inspection schedules for the owner or operator.

AVO inspections of pumps, compressors, and atmospheric PRDs are required once per operating shift and are to occur no more than 12 hours apart, except at unmanned oil and gas production fields and pipeline transfer stations, those that are typically without onsite personnel during operations. Those unmanned facilities are now required to perform AVO inspections at least weekly. Previously, audio-visual inspection was required every eight hours and there was no requirement for those unmanned facilities.

Beginning January 1, 2026, OGI inspection of components in VOC service is required monthly, unless a component will be out of VOC service for more than 14 days of the month due to outage or turnaround. As noted in Chapter 2, the manufacturers of OGI devices report these are capable of inspecting up to 10,000 components per operating day. The nature of inspection with an OGI device differs from that with a Method 21 analyzer. While a Method 21 analyzer uses a component-by-component approach, OGI devices inspect multiple components at once. Staff does not expect operators to take a component-by-component approach with OGI devices. The operator of the OGI device must be trained to operate and maintain the device in accordance with manufacturer's specifications. Visible vapors detected shall be repaired per subdivision (g) and recorded per subdivision (i).

In lieu of an OGI inspection, an alternative inspection method may be used if approved by U.S. EPA and the Executive Officer. Other agencies, such as the state of Colorado Department of Public Health & Environment (CDPHE), have several approved alternative inspection methods. Referred to as an Alternative Approved Instrument Monitoring Method (AIMM)[1], they are for use by oil and gas facilities in that jurisdiction. If one of the methods were also approved by U.S. EPA, they may also be used in South Coast AQMD jurisdiction if approved.

Analyzer inspections by U.S. EPA Method 21 will continue to be conducted quarterly, with inaccessible components inspected annually. Beginning January 1, 2026, fin fans, including fin fan plugs, will be inspected with a Method 21 analyzer annually. Facilities may also continue to seek an alternative annual inspection schedule for certain categories of components. Existing rule language provides a path of relaxation of quarterly analyzer inspection towards annual analyzer inspection if certain analyzer and AVO inspection performance metrics are met and maintained. This rule language has been updated to include visible vapors detected with OGI camera in the same performance metrics and are now a criterion for approval or disapproval of an alternative annual inspection schedule. Staff also considered a path towards relaxation of monthly OGI inspection, as suggested by stakeholders. After careful consideration, staff did not include a path towards relaxation of monthly OGI inspection in these rule amendments because there is insufficient data to demonstrate relaxation is warranted.

Staff was also asked to consider alternative inspection schedules for certain types of "leakless" components, such as bellow-seal valves or magnetically-driven, or "mag-drive", pumps. Staff encourages the use of these technologies in replacement of components, but, similar to OGI inspection, staff does not have data regarding the performance of these under an LDAR program. In future amendments, with sufficient data, relaxation of inspection frequencies of so-called "leakless" components may be justified.

Subdivision (g) *Leaks Standards and Repair Requirements*

Formerly titled *Maintenance Requirements*, PAR 1173 revises leak standards at which the owner or operator must repair a component, effective January 1, 2026. The component category comprising types valve, fitting, and other device (diaphragm, hatch, sight-glass, or meter) must be repaired when above 100 ppm, formerly 500 ppm. Pumps in light liquid service and compressors must be repaired when above 400 ppm, also formerly 500 ppm. Two other categories of component, PRD and pump in heavy liquid service, remain at their existing leak standard of 200 ppm and 100 ppm, respectively. In addition, a new category of component is identified, fin fan, with a leak standard of 100 ppm. Leak standards are listed in Table 2 – *Component Leak Standards*.

Staff received feedback, data, and reports from several stakeholders regarding the impacts of lowering leak standards. Stakeholders reported that lowering leak standards would result in additional shutdowns to fix leaks. Minimizing additional startups and shutdowns is a key concern for South Coast AQMD, as evident by Rule 429.1 regarding Startup and Shutdown Provisions at Petroleum Refineries and Related Operations. In jurisdictions with a 100 ppm leak standard such as Bay Area AQMD, San Joaquin Valley APCD, or Santa Barbara County APCD, those jurisdictions allow for a delay of repair until the next scheduled shutdown to minimize additional

[1] https://cdphe.colorado.gov/oil-and-gas-compliance-and-recordkeeping/approved-instrument-monitoring-method-aimm-for-oil-gas

shutdowns. Staff is sensitive to impacts of additional shutdowns, not only for excess VOC emissions associated with shutdown and startup, but also oxides of nitrogen (NOx), carbon monoxide (CO), particulate matter (PM), oxides of sulfur (SOx), and other air contaminants. The impacts of recent shutdowns and startups reported to staff are summarized below:

Table 3-1 Impacts of Recent Shutdowns and Startups

Occurrence	VOC (tons)	PM (tons)	NOx (tons)	CO (tons)	SOx (tons)	Opacity
2020Q3 Event	2.86	0.10	0.29	1.58	0.99	N/A
2020Q3 Event	3.35	0.11	0.18	1.57	0.32	N/A
2023Q1 Event	0.31	0.01	0.03	0.15	0.06	N/A
2023Q1 Event	N/A	N/A	2.32	8.04	1.05	> 140 hrs over 20%
2024Q2 Event	0.01	0.01	0.22	2.34	N/A	N/A
2024Q2 Event	N/A	N/A	0.20	N/A	0.07	N/A
Average	1.09	0.04	0.54	2.28	0.41	In excess of 20%

To minimize the possibility of PAR 1173 resulting in additional shutdowns and excess emissions associated with startup and shutdown, PAR 1173 allows for a limited number of valves and fittings, and pumps (light liquid) and compressors, to delay repair until the next shutdown of process unit that includes the component, expressed in Table 3 – *Limited Delay of Repair*. The allowable percentage of valves and fittings, and pumps (light liquid) and compressors, is 0.05%, respectively, lower than other jurisdictions. The allowable leak rate for both component categories is 500 ppm, also lower than other jurisdictions. The allowable period of delay for both component categories is until scheduled shutdown or unscheduled shutdowns longer than 24 hours, which is also stricter than other jurisdictions.

To determine unrealized VOC reductions associated with delay of repair, staff calculated VOC emission factors using Method 2 – Correlation Equation Method from the South Coast AQMD AER document. Using this method, staff determined the worst case scenario for valves and fittings: a flange component type emitting VOC at 500 ppm instead of 100 ppm. In this scenario, the component would emit 4.75 lbs of VOC per year. If each reporting facility were to allow 0.05% of valves and fittings, calculated to be 1,256 for all of South Coast AQMD, exclusively in the form of flanges to emit at 500 ppm instead of 100 ppm, unrealized VOC reductions are expected to be

3.0 tons of VOC per year or less than 0.01 tons of VOC per day. Using the same approach, the worst case scenario for a pump (light liquid) or compressor is a pump emitting VOC at 500 ppm instead of 400 ppm. The pump would emit 6.07 lbs of additional VOC per year. If each reporting facility were to allow 0.05% of its pumps or compressors to leak, there would be 178 for all of South Coast AQMD. For 178 pumps allowed to leak at 500 ppm instead of 400 ppm, unrealized VOC reductions are expected to be 0.54 tons VOC per year or about 0.001 tons VOC per day.

In comparison, a single startup/shutdown event on average generates 1.09 tons of VOC, 0.04 tons of PM, 0.54 tons of NOx, 2.28 tons of CO, 0.41 tons of SOx, and excess visible emissions. In the worst case, a startup/shutdown event was shown to generate 3.35 tons of VOC.

Staff also received feedback regarding applicable leak standards to different potential leak points, sometimes referred to as "subcomponents". Components may contain multiple points of potential leakage. As noted in Chapter 1, a valve should be checked for leaks in at least two locations: at the valve stem and at the associated flange, and the 100 ppm leak standard for "Valve, Fitting, or other device" would apply. For a compressor or light liquid pump, each associated seal, connector, and flange should be checked for leaks and the 400 ppm leak standard for "Compressor or Pump (Light Liquid)" would apply for each of those potential leak sources. Lastly, for a PRD, each associated PRV, rupture disc, connector, and flange should be checked for leaks and the 200 ppm leak standard for "Pressure Relief Device (PRD)" would apply for each of these.

PAR 1173 deletes existing Table 2 – *Repair Periods*, reorganized as Table 6 – *Interim Repair Periods*, and adds repair schedules for leaks above a leak standard, visible leaks, and visible vapors with special consideration for fin fans. For components in VOC service, other than fin fans, above the applicable leak standard, the component must be repaired below the Table 2 – *Component Leak Standard* within 14 days of detection. For components above the applicable violation standard (10,000 ppm for light liquid or gas/vapor service, 500 ppm for heavy liquid service), within 1 calendar day, the leak must be reduced below the violation standard in Table 1 – *Violation Standards* or no longer be visible using an OGI camera. The component must be completely repaired below the applicable leak standard in Table 2 - *Component Leak Standards* within 14 days of detection, as shown below.

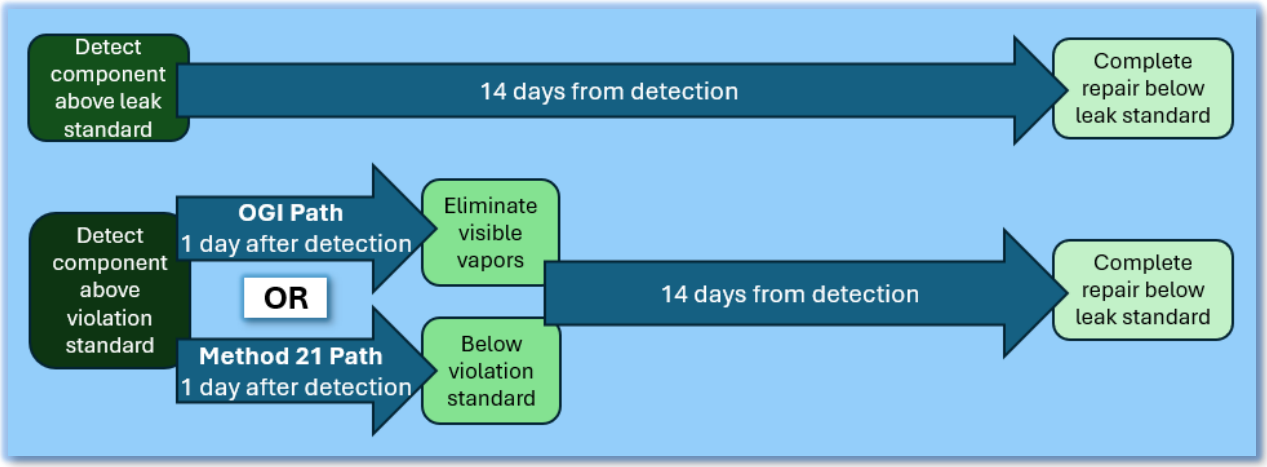


Figure 3-2 – Repair pathways for leaks above standard detected via analyzer inspection

For components in VOC service with visible leaks, other than fin fans, the visible leak must be eliminated by the next day. An operator finding a visible leak from an inaccessible component shall electronically notify the South Coast AQMD via Rule1173Reports@aqmd.gov within 24 hours, and eliminate the visible leak within 14 days, as shown below.

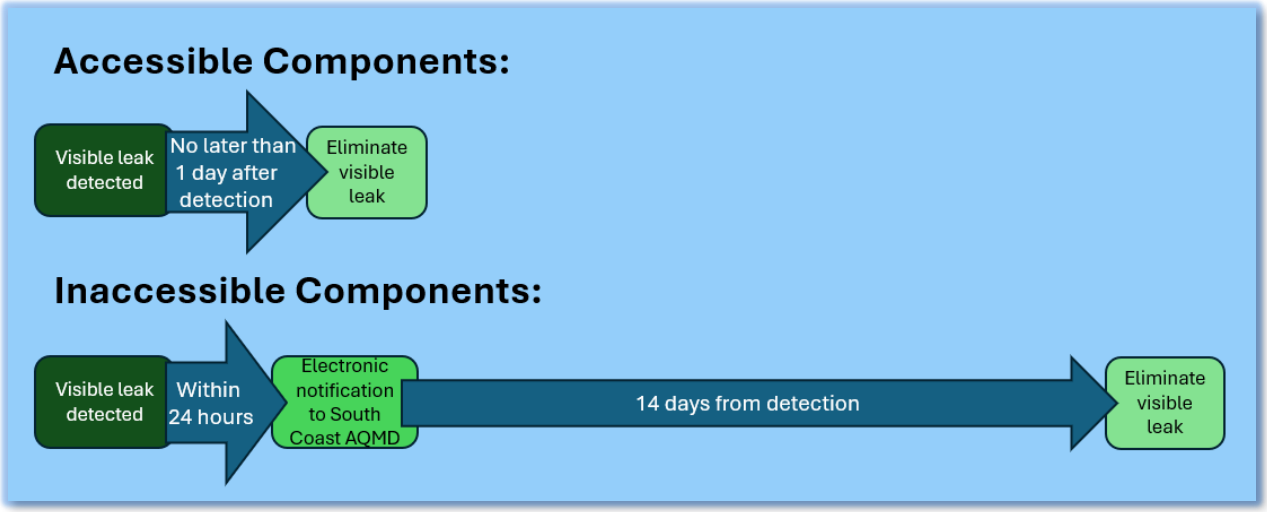


Figure 3-3 – Repair pathway for accessible and inaccessible visible leaks detected via AVO inspection or other means

For components in VOC service with visible vapors, other than fin fans, the visible vapors must be eliminated by the next day. Alternatively, if visible vapor is determined to be below the violation standard in Table 1 – *Violation Standards*, repair instead must be completed within 14 days. An operator detecting visible vapors from an inaccessible component shall eliminate visible vapors within 14 days. If visible vapors are not eliminated within seven (7) calendar days of detection, the operator shall notify South Coast AQMD within eight (8) calendar days of detection electronically, or to Rule1173Reports@aqmd.gov if approved, as shown below.

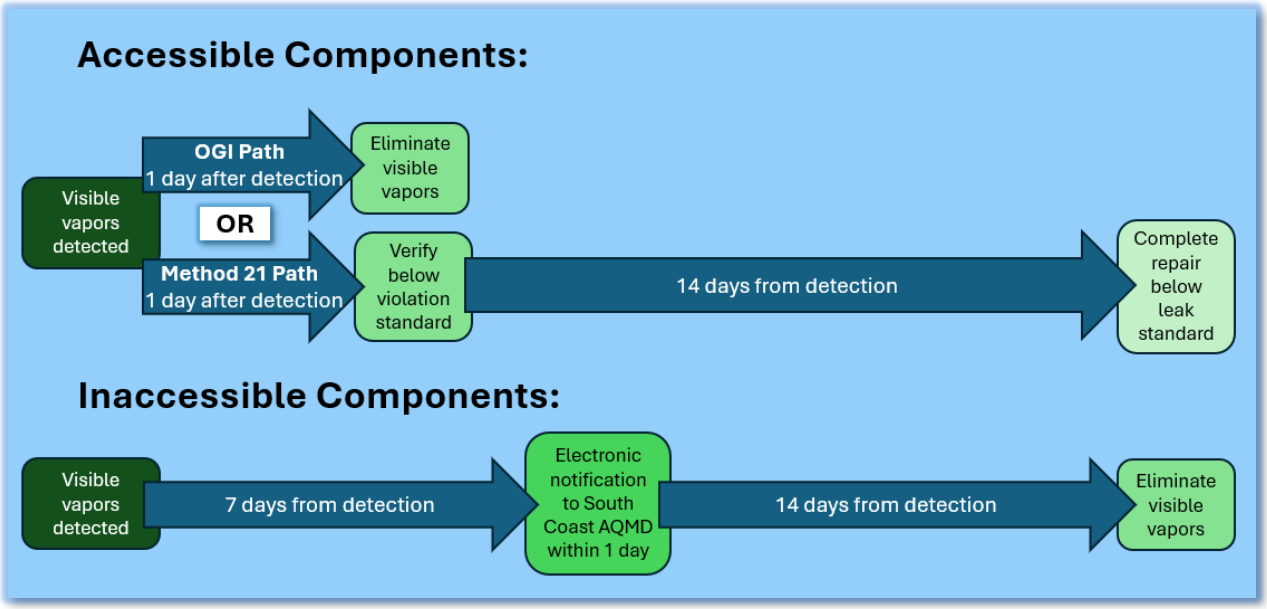


Figure 3-4 – Repair pathways for accessible and inaccessible visible vapors detected via OGI inspection

Lastly, for fin fans, because of the unique nature of fin fan plugs, PAR 1173 proposes a different approach to the repair schedule of fin fans. Stakeholders reported that to safely repair a fin fan plug while in operation, an engineered clamp must be designed and manufactured over several days to fit around the leaking fin fan plug. A heat-resistant sealant is injected and forms a seal around the plug, reducing leakage. The number of clamps that can be installed is limited by other clamps and other equipment nearby. Additionally, fin fans are often inaccessible, high off of ground level with access only by ladders, scaffolding, or lifts. By their nature as air-cooled heat exchangers, the surrounding air has elevated temperatures, posing additional challenges.

Staff is sensitive to these valid concerns. PAR 1173 requires repair of fin fans within 14 days to reduce leaks to below 5,000 ppm or eliminate visible vapors. For leaks between 100 ppm and 5,000 ppm, repair may be delayed until the next outage or turnaround, but these may not exceed 1% of all facility fin fan plugs. In the worst case scenario, delaying repair on 1% of fin fan plugs at 5,000 ppm, estimated to be as many as 2,520 out of 252,000 operating fin fan plugs, results in unrealized VOC emission reductions above the 100 ppm leak standard of 14.7 tons of VOC per year (0.04 tons per day). As shown in Chapter 2, a fin fan leak standard of 100 ppm results in VOC reductions of 42.2 tons per year.

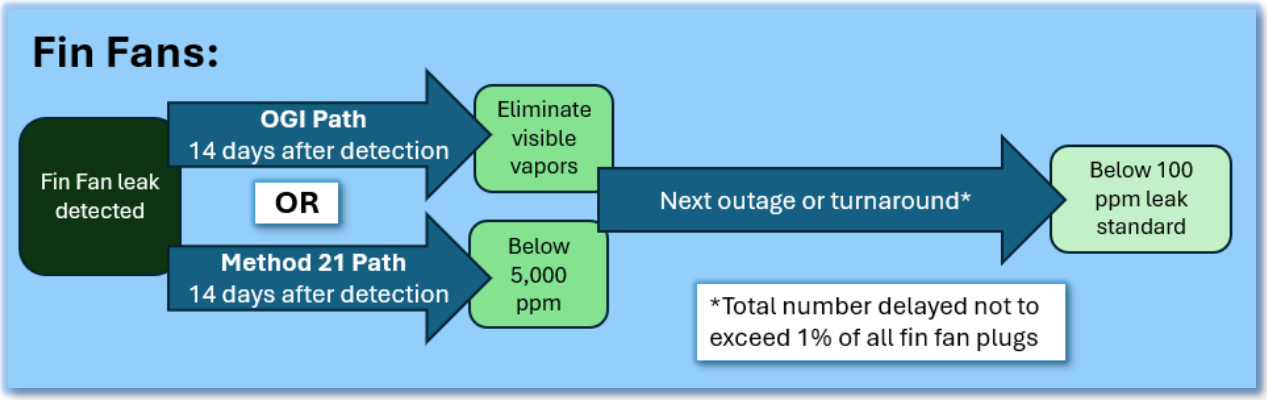


Figure 3-5 – Repair pathway for fin fan leaks detected

Subdivision (h) ***Atmospheric Process PRD Requirements***

PAR 1173 removes obsolete rule language with achievement dates in the past. PAR 1173 also removes the 500 lbs VOC emission threshold for releases from atmospheric process PRDs to conduct a failure analysis and implement corrective actions, in order to align with federal requirements. PAR 1173 also updates the existing mitigation fee, added in 2002 at $350,000, to account for inflation. The mitigation fee is now set at $625,000 with annual adjustment for inflation based on the California Consumer Price Index (CPI), similar to the mechanism in Rule 320. The amount of the mitigation fee would be determined based on the date of the release event that triggered the mitigation fee. For releases that occur prior to July 1, the mitigation fee will be the revised fee as calculated on July 1 of the preceding year. For releases that occurred prior to the date of rule amendment, the original mitigation fee of $350,000 would apply. The California CPI for the current year may be found here: https://www.dir.ca.gov/oprl/CPI/PresentCCPI.PDF. Historic California CPI from years 1955 to present may be found here: https://www.dir.ca.gov/OPRL/CPI/EntireCCPI.PDF.

For example, if a release triggering a mitigation fee were to occur on August 15, 2027, the owner or operator would refer to the annual average California CPI for All Urban Consumers for calendar year 2026, typically published in early 2027. Hypothetically, assume a value of 348.601. Next, obtain the annual average California CPI for All Urban Consumers for calendar year 2024. Assume a value of 335.122 for this example. Next, calculate a conversion factor by dividing the current value against the 2024 valve, per the formula:

$$Conversion\ Factor = \frac{Most\ recent\ annual\ average\ California\ CPI}{Calendar\ year\ 2024\ annual\ average\ California\ CPI}$$

For the example, the value would be (348.601 / 335.122) or 1.040. Multiple the mitigation fee by the conversion factor to obtain the current mitigation fee. For this example, the adjusted mitigation fee would be (1.040 * $625,000) or $650,000.

Subdivision (i) ***Recordkeeping and Reporting Requirements***

PAR 1173 requires electronic reporting, including via email to Rule1173Reports@aqmd.gov as the default method or web-based submission portals to be developed by South Coast AQMD

similar to U.S. EPA's Central Data Exchange (CDX) or CARB's California Electronic Greenhouse Gas Reporting Tool (Cal e-GGRT). Electronic reporting applies to all notifications and reports including leaks from inaccessible components, OGI inspection reporting, and reports regarding delay of repair. PAR 1173 also now requires five years of recordkeeping to be maintained to align with federal requirements. In addition, existing rule language regarding applicability of reporting of equipment breakdowns pursuant to Rule 430 has been moved from subdivision (g).

Subdivision (j) *Test Methods*

PAR 1173 updates the acceptable test methods to determine VOC content of gases by allowing ASTM Methods D 7833 and D 2163, along with the existing approved ASTM Method D 1945.

Subdivision (k) *Ozone Contingency Measures*

PAR 1173 deletes the entirety of the existing obsolete subdivision, formerly titled *Other Rules and Regulation Applicability*, and repurposes it for ozone contingency measures in the South Coast Air Basin to comply with federal requirements.

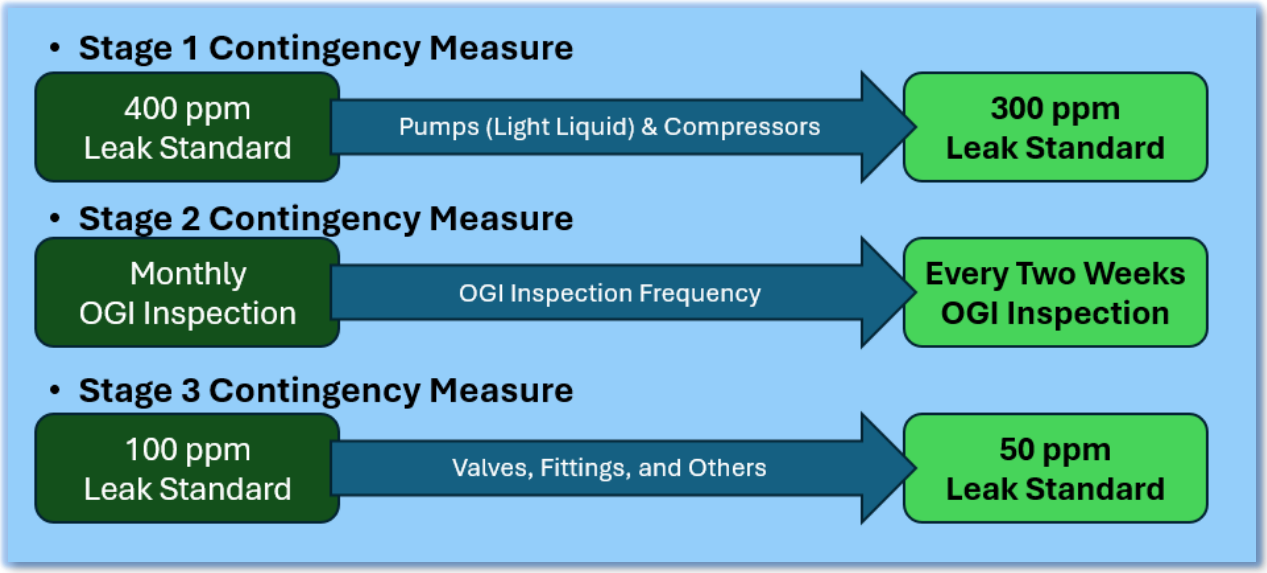


Figure 3-6 – Ozone contingency measure pathway

These contingency measures would only be implemented in the event that the U.S. EPA determines that the South Coast AQMD has failed to meet a reasonable further progress (RFP) milestone or to attain an ozone NAAQS, after amendments to Rule 1173 are approved by U.S. EPA to be included into the SIP. These contingency control measures are necessary as part of comprehensive efforts to timely attain ozone standards. The contingency measures would be triggered upon the issuance of a final determination by the U.S. EPA that the South Coast AQMD has failed to comply with either of the following requirements:

1. Meet any ozone RFP requirement in an attainment plan approved in accordance with section 51.1012; or
2. Attain the applicable ozone NAAQS by the applicable attainment date.

PAR 1173 includes three contingency measures for the South Coast Air Basin. The measures shall be implemented sequentially, starting with the Stage 1 contingency measure, then layering the Stage 2 contingency measure and then Stage 3 contingency measure if triggered, effective 60 days after issuance of each final determination. The first contingency measure reduces the leak standard of pumps to 300 ppm. Triggering the first contingency measure will result in an estimated additional 8.8 tons per year of VOC reduction. The second contingency measure will increase the frequency of OGI inspections to every two calendar weeks. Triggering the second contingency measure will result in an estimated additional 44.5 tons per year of VOC reduction. The third contingency measure will reduce the leak standard for valves, fittings, and other devices to 50 ppm. Triggering the third contingency measure will result in an estimated additional 166.4 tons per year of VOC reduction.

Contingency measures should provide for emission reductions approximately equivalent to either one year's worth of air quality improvement or one year's worth (OYW) of reductions needed for RFP in the years following RFP milestone and attainment years. While the proposed amendments in Rule 1173 satisfy a 'triggering mechanism' requirement set by the U.S. EPA, the reductions from the rule alone are not adequate to satisfy the OYW of progress, which is calculated as the percentage of the base year emission inventory (EI) the annual rate of reductions represents of either NOx or VOC (or combined) per year. See the equation below for an example.

$$\frac{(base\ year\ EI - attainment\ year\ EI)}{(attainment\ year - base\ year)} \div base\ year\ EI \times attainment\ year\ EI = OYW\ of\ Progress$$

Contingency measures are required to result in emission reductions within one year of a final action by the U.S. EPA. It would be challenging to implement more stringent requirements, achieving additional NOx or VOC reductions, in rules involving other traditional sources within the mandated one-year time period. Retrofitting or replacement of existing equipment with newer technologies or equipment, or any permitting provisions would likely take more than one year to effectively implement. Conversely, the proposed amendment to Rule 1173 does not require permitting of units, does not require units be retrofitted or replaced, and does not require reformulation or development of new products. Consequently, Rule 1173 is well suited for contingency provisions since implementing lower leak standards or higher frequency OGI monitoring could be implemented in less than 60 days following the triggering of a contingency measure with resulting emission reductions occurring in less than one year.

Based on the above analysis, the South Coast AQMD will satisfy the contingency requirements for set in CAA section 172(c)(9) and the U.S. EPA's Ozone Implementation Rule with these proposed amendments to Rule 1173. PAR 1173 provides contingency measures to be triggered if the South Coast Air Basin fails to meet RFP or attain the applicable ozone standards by the applicable date. The emission reductions anticipated from PAR 1173, in conjunction with reductions from existing rules and regulations, are expected to achieve the reductions equivalent to or more than OYW of progress. PAR 1173 addresses the contingency measures for RFP and attainment for the applicable ozone standards (2008 & 2015 8-hour ozone NAAQS).

Subdivision (l) *Exemptions*

PAR 1173 expands on an existing exemption for safety to exempt unsafe repairs and clarifies that the schedule for repair does not begin until the component is safe to repair. PAR 1173 also adds

an exemption for unsafe OGI inspections. If the owner or operator conducting an OGI inspection at a facility determines that it is unsafe to climb a platform or other area due to safety concerns such as wind or slippery surfaces from rain, the facility is not required to conduct an inspection from the area. An OGI inspection must be conducted the first day the owner or operator determines it safe to do so. An owner or operator is required to document the date that a required inspection was not completed and the reason.

Subdivision (m) ***Interim Procedures and Requirements***

PAR 1173 adds interim procedures and requirements from the date of rule amendment until January 1, 2026, for what leaks are subject to a Notice of Violation and when to repair components, expressed as Table 4 – *Interim Violation Standards*, Table 5 – *Interim Leak Standards*, and Table 6 – *Interim Repair Periods*, respectively. These interim procedures and requirements largely reflect existing procedures and requirements in Rule 1173.

CHAPTER 4: IMPACT ASSESSMENTS

INTRODUCTION

Impact assessments were conducted as part of PAR 1173 rule development to assess the environmental and socioeconomic implications. These impact assessments include emission reduction calculations, cost-effectiveness and incremental cost-effectiveness analyses, a socioeconomic impact assessment, and a California Environmental Quality Act (CEQA) analysis. Staff prepared draft findings and a comparative analysis pursuant to Health and Safety Code Sections 40727 and 40727.2, respectively.

EMISSION REDUCTIONS

PAR 1173 achieves VOC emission reductions largely through two strategies: 1) lowering VOC leak standards for components to reduce baseline VOC emissions associated with components in compliance with the rule; and 2) reducing the persistence of larger VOC leaks by requiring OGI inspections more frequently than current analyzer inspections to reduce VOC emissions associated with components not in compliance with the rule.

For a detailed analysis of the projected VOC emission reductions, please refer to Chapter 2 and Chapter 3. Total VOC emission reductions from the proposed rule are 2.03 tons per day. A summary of the expected VOC emission reductions is listed in Table 4-1.

Table 4-1 Emission Reductions from Proposed Rule

Proposed Requirement	VOC Emission Reduction (tons per year)	VOC Emission Reduction (tons per day)
Lower leak standard for component type valve, fitting, other to 100 ppm	507.8	1.39
Valve, fitting delay of repair offset	(3.0)	(0.01)
Lower leak standard for component type fin fan to 100 ppm	42.2	0.12
Fin Fan delay of repair offset	(14.7)	(0.04)
Lower leak standard for component type pump (light liquid), compressor to 400 ppm	12.2	0.03
Pump (light liquid), compressor delay of repair offset	(0.5)	(< 0.01)
Monthly OGI Inspection of all components in VOC service	196.2	0.54
Overall	740.1	2.03

Below is a summary of expected additional VOC emission reductions for contingency measures:

Table 4-2 Emission Reductions from Contingency Measures		
Contingency Measure	Additional VOC Emission Reduction (tons per year)	Additional VOC Emission Reduction (tons per day)
Lower leak standard for component type pump (light liquid), compressor from 400 ppm to 300 ppm	8.8	0.02
OGI Inspection every two weeks of all components in VOC service	44.5	0.12
Lower leak standard for component type valve, fitting, other from 100 ppm to 50 ppm	166.4	0.46
Overall	219.8	0.60

COST-EFFECTIVENESS

Health and Safety Code Section 40920.6 requires a cost-effectiveness analysis when establishing BARCT requirements. The cost-effectiveness of a control is measured in terms of the control cost in dollars per ton of air pollutant reduced. The costs for the control technology include purchasing, installation, operation, maintenance, and permitting. Emission reductions were calculated for each requirement and based on estimated baseline emissions. The 2022 AQMP established a cost-effectiveness threshold of $36,000 per ton of VOC reduced. After adjusting for inflation, the cost-effectiveness threshold is $40,170 per ton of VOC reduced (2023 U.S. Dollars). A cost-effectiveness that is greater than the threshold of $40,170 per ton of VOC reduced requires additional analysis and a hearing before the Governing Board on costs.

The cost-effectiveness is estimated based on the present value of the retrofit cost, which was calculated according to the capital cost (initial one-time equipment and installation costs) plus the annual operating cost (recurring expenses over the useful life of the control equipment multiplied by a present worth factor). Capital costs are one-time costs that cover the components required to assemble a project. Annual costs are any recurring costs required to operate equipment. Costs for this proposal were obtained from available literature, vendors, and facilities.

Details regarding costs and cost-effectiveness determinations are included in Chapter 2. The overall cost-effectiveness of the proposed rule is $18,800 per ton of VOC reduced. The cost-effectiveness for each proposed requirement and the overall cost-effectiveness is summarized in the Table 4-3 below.

Table 4-3 Summary of Cost-Effectiveness			
Proposed Requirement	Annualized Cost	Annual VOC Reductions (tons per year)	Cost-Effectiveness ($/ton)
Lower leak standard for component type valve, fitting, other to 100 ppm	$10,019,000	507.8	$19,700
Lower leak standard for component type pump (light liquid), compressor to 400 ppm	$329,000	12.2	$27,000
Lower leak standard for component type fin fan to 100 ppm	$1,027,000	42.2	$24,400
Monthly OGI Inspection of all components in VOC service	$2,514,000	196.2	$12,800
Delay of repair offsets	$0	(18.2)	$0
Overall	$13,889,000	740.1	$18,800

INCREMENTAL COST-EFFECTIVENESS

Health and Safety Code Section 40920.6 requires an incremental cost-effectiveness analysis for BARCT rules or emission reduction strategies when there is more than one control option which would achieve the emission reduction objective of the proposed amendments, relative to ozone, CO, SOx, NOx, and their precursors. Since volatile organic compounds are precursors to ozone, an incremental cost-effectiveness analysis is required for controls proposed to limit VOC emissions. Incremental cost-effectiveness is the difference in the dollar costs divided by the difference in the emission reduction potentials between each progressively more stringent potential control options as compared to the next less expensive control option.

Incremental cost-effectiveness is calculated as following:

$$Incremental\ Cost \cdot Effectiveness = \frac{Cost\ of\ Option\ 2 - Cost\ of\ Option\ 1}{Benefit\ of\ Option\ 2 - Benefit\ of\ Option\ 1}$$

Details regarding costs and incremental cost-effectiveness determinations are included in Chapter 2. The incremental cost-effectiveness for each next more stringent proposed requirement is summarized in the Table 4-4 below.

Table 4-4 Summary of Incremental Cost-Effectiveness			
Next More Stringent Proposed Requirement	Incremental Annualized Cost	Incremental Annual VOC Reductions (tons per year)	Incremental Cost-Effectiveness ($/ton)
Further lowering leak standard for component type valve, fitting, other from 100 ppm to 50 ppm	$14,419,000	166.5	$86,600
Further lowering leak standard for component type fin fan from 100 ppm to 50 ppm	$1,384,000	12.3	$112,700
Further lowering leak standard for component type pump (light liquid), compressor from 400 ppm to 300 ppm	$417,000	8.8	$47,700
More frequent OGI Inspection, from monthly to every two weeks	$2,958,000	44.5	$66,400

SOCIOECONOMIC IMPACT ASSESSMENT

A socioeconomic impact assessment has been conducted and was released for public review and comment as a separate document at least 30 days prior to the South Coast AQMD Governing Board Hearing for PAR 1173, which is scheduled for November 1, 2024 (subject to change).

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project (PAR 1173) is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3). A Notice of Exemption will be prepared pursuant to CEQA Guidelines Section 15062, and if the proposed project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties, and with the State Clearinghouse of the Governor's Office of Planning and Research.

DRAFT FINDINGS UNDER HEALTH & SAFETY CODE SECTION 40727

Requirements to Make Findings

Health and Safety Code Section 40727 requires that the Governing Board make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report. In order to determine compliance with Health and Safety Code Section 40727, Health and Safety Code Section 40727.2 requires a written analysis comparing the proposed amended rule with existing regulations, if the rule meets certain requirements.

Necessity

A need exists to amend PAR 1173 to implement best available retrofit control technology, emission reduction strategies recommended in the WCWLB CERP as part of the AB 617 commitment, and Control Measure FUG-01 in the 2022 Final AQMP, and contingency measures for the 2008 and 2015 ozone NAAQS.

Authority

The South Coast AQMD obtains its authority to adopt, amend, or repeal rules and regulations pursuant to Health and Safety Code Sections 39002, 40000, 40001, 40440, 40702, 40725 through 40728, 40920.6, and 41508.

Clarity

PAR 1173 is written or displayed so that its meaning can be easily understood by the persons directly affected by them.

Consistency

PAR 1173 is in harmony with and not in conflict with or contradictory to existing statutes, court decisions, or state or federal regulations.

Non-Duplication

PAR 1173 will not impose the same requirements as any existing state or federal regulations. The proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD.

Reference

In amending this rule, the following statutes which the South Coast AQMD hereby implements, interprets or makes specific are referenced: Health and Safety Code Sections 39002, 40001, 40406, 40702, 40440(a), and 40725 through 40728.5.

COMPARATIVE ANALYSIS

Under Health and Safety Code Section 40727.2, the South Coast AQMD is required to perform a comparative written analysis when adopting, amending, or repealing a rule or regulation. The comparative analysis is relative to existing federal requirements, existing or proposed South Coast AQMD rules and air pollution control requirements and guidelines which are applicable to components.

Rule	**PAR 1173**	**8-18**	**4409**	**4455**	**331**
Jurisdiction	South Coast AQMD	Bay Area AQMD	San Joaquin Valley APCD		Santa Barbara APCD
Applicability	• Refineries • Chemical Plants • Re-refiners • Marine Terminals • Oil and Gas Production Fields • Natural Gas Processing Plants • Pipeline Transfer Stations	• Refineries • Chemical Plants • Bulk Plants • Bulk Terminals	• Light crude Production Facilities • Natural Gas Production Facilities • Natural Gas Processing Facilities	• Petroleum Refineries • Gas Liquids Processing Facilities • Chemical Plants	• Refineries • Chemical Plants • Oil and Gas Production Fields • Oil and Gas Processing Plants • Pipeline Transfer Stations
Requirements					
Leak Standard					
Valve & Fitting	100 ppm	100 ppm	500 ppm	200-400 ppm	1,000 ppm
Other devices	100 ppm	100 ppm	500 ppm	500-1,000 ppm	1,000 ppm
Pump (Light) & Compressor	400 ppm	500 ppm	500 ppm	500-1,000 ppm	1,000 ppm
Pump (Heavy)	100 ppm				
PRD	200 ppm	500 ppm	200-400 ppm	100-200 ppm	1,000 ppm
Fin Fan	100 ppm	None	None	None	None
Repair Schedule	1-14 days	7-15 days	1-7 days	1-14 days	1-14 days
Liquid Leak Repair Schedule	1 day	7 days	1 day	1 day	1 day
OGI Inspection	Required	Not required	Referenced	Referenced	Not required
OGI Inspection Frequency	Monthly	N/A	Not required	Not required	N/A
Delay of Repair					
Valve & Fitting	Allowed until outage or turnaround • 0.05% of total • 500 ppm max	Allowed until turnaround, 5 years max • 0.15% of total • 10,000 ppm max	Allowed until turnaround, 1 year max • No cap • No max	Allowed until turnaround, 1 year max • No cap • No max	Allowed until turnaround, 1 year max • No cap • No max

Other devices	Not allowed	Not allowed			
Pump (Light) & Compressor	Allowed until outage or turnaround • 0.05% of total • 500 ppm max	Allowed until turnaround, 5 years max • 0.5% of total • 10,000 ppm max			
Pump (Heavy)	Not allowed				
PRD	Not allowed	Allowed until turnaround, 5 years max • 0.5% of total • 10,000 ppm max			
Fin Fan	Allowed until outage or turnaround • 1% of total • 5,000 ppm max	N/A	N/A	N/A	N/A
Recordkeeping and Reporting	• Inspection, leak, and PRD reporting • 5 year retention	• Inspection, leak, and PRD reporting • 5 year retention	• Limited leak reporting only • 5 year retention	• PRD release reporting only • 5 year retention	• Reporting not required • 2 year retention
Ozone Contingency Measures	Yes	No	No	No	No

APPENDIX A: RESPONSE TO COMMENTS

PUBLIC WORKSHOP COMMENTS

COMMENT LETTERS

Public Workshop Comments

Public Workshop Commenter #1 – Neal Davenport, Davenport Engineering

The commentor requested the following:

1-A) Clarity regarding cost effectiveness for OGI for facilities with fewer than 5,000 components.

1-B) Consideration for exemption or other consideration for facilities with fewer than 5,000 components.

Staff Response to Public Workshop Commenter #1

1-A) For facilities with fewer than 5,000 components, staff expects these facilities to contract OGI inspection to a third-party or, if multiple smaller facilities are all under common ownership, they may choose to purchase their own OGI camera and inspect multiple facilities in one operating day.

1-B) Staff is sensitive to the concerns of small business and facilities with fewer than 5,000 components. PAR 1173 does not require facilities to own or to maintain an OGI camera onsite and make a large capital investment over $100,000. Staff has identified several contractors already performing OGI inspection in the South Coast air basin which may be more appropriate for the needs of a small operator. Additionally, the same leak detection equipment can be utilized over several rules (Rule 463, Rule 1148.1, Rule 1178) to help reduce costs.

Public Workshop Commenter #2 – Jessica Paquette, Matrix Oil

The commentor expressed the following:

2-A) Concerns regarding cost assumptions, especially those from San Joaquin Valley APCD.

2-B) Interest in pilot study using laser detection for methane leaks instead of OGI inspection.

Staff Response to Public Workshop Commenter #2

2-A) Staff has evaluated cost assumptions from San Joaquin Valley APCD and refined several cost assumptions. First, staff has compared prevailing wage rates in Los Angeles County for various crafts and classifications as published by the California Department of Industrial Relations and found all average hourly wages for trade groups expected to perform repair to be less than the hourly rate used by San Joaquin Valley APCD ($133/hour). Second, several cost assumptions have been refined as a result of stakeholder feedback, including adjusting the cost of annual OGI maintenance, the daily labor cost to operate OGI devices, and the cost of fin fan plug repair while in operation.

2-B) This rulemaking project evaluated several “smart LDAR” technologies, including open path laser detection, gas sensors, and OGI. For the purpose of detecting leaks from the more than 2.6 million components in South Coast AQMD, OGI was found to be the most appropriate. PAR 1173 does contain a provision that in lieu of OGI inspection, another approach may be used if approved by U.S. EPA and the Executive Officer.

Public Workshop Commenter #3 – Derek Marin, Vista Paint Corporation

The commentor requested the following:

3-A) Correct the NAICS code associated with facility type Chemical Plant to 3252.

3-B) Ensure that non-VOCs like water are not captured within the definition of heavy liquid, which is defined as less than ten (10) percent VOC by volume.

Staff Response to Public Workshop Commenter #3

3-A) Rule language has been updated to reflect NAICS code 3252 - Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing.

3-B) PAR 1173 exempts components handling fluids with a VOC content of ten (10) percent by weight or less, thus a non-VOC liquid like water would not be considered a heavy liquid.

Public Workshop Commenter #4 – Alok Das, World Oil Recycling

The commentor expressed the following:

4-A) Eliminate the requirement for OGI monitoring in months when quarterly analyzer inspection will also be taking place as it is redundant.

4-B) More transparency regarding rule changes with side-by-side rule language comparison between existing rule language and new rule language in presentations.

Staff Response to Public Workshop Commenter #4

4-A) Staff leaves in place monthly OGI inspection without exemption. Monthly OGI inspection without exemption was found to be cost-effective and incremental cost-effective. Many, but not all, facilities have inaccessible components which are inspected annually, not quarterly, and those specific components would require OGI inspection if they were not inspected by analyzer in a given calendar month. This increases the complexity and burden of compliance on facilities to keep track of which components need and do not need OGI inspection each month. In addition, staff has noted many contractors routinely carry an OGI device to help locate leaks when performing analyzer inspections, so staff feels monthly OGI inspection requirements reflects existing best management work practice and performed a BARCT assessment on this practice.

4-B) Staff appreciates this feedback regarding presentations and already incorporates side-by-side rule language comparison between existing rule language and new rule language in drafts of rule language with tracked changes.

Public Workshop Commenter #5 – Oscar Espino-Padron, Earth Justice

The commentor requested the following:

5-A) For staff to respond to written recommendations regarding PAR 1173 submitted by Earth Justice together with Communities for a Better Environment, Center for Biological Diversity, California Communities Against Toxics, and the Del Amo Action Committee.

5-B) Clarification regarding the triggering of ozone contingency measures.

Staff Response to Public Workshop Commenter #5

5-A) The comment letter from Earth Justice and others along with associated responses to those written comments are located later in this Appendix.

5-B) Ozone contingency measures (CMs) come into effect after publication by U.S. EPA of that the South Coast Air Basin has failed to comply with the 2008 or 2015 ozone NAAQS, either by not making RFP, failing to attain either NAAQS, or failing to meet a milestone. Three (3) ozone CMs are listed in PAR 1173 and CMs are triggered sequentially with the Stage 1 CM occurring first, Stage 2 CM second (with Stage 1 CM still in effect), and lastly Stage 3 CM last (with all CMs in effect).

Public Workshop Commenter #6 – Greg Busch, AltAir Paramount

The commentor expressed the following:

6-A) Consideration for flexibility for OGI inspection for smaller facilities with fewer components.

Staff Response to Public Workshop Commenter #6

6-A) See Response 1-2.

Public Workshop Commenter #7 – "Pearl", Resident of West Long Beach

The commentor expressed the following:

7-A) Concerns about fuels transition plans and phase out infrastructure.

Staff Response to Public Workshop Commenter #7

7-A) PAR 1173 does not address fuels transitions plans or phase out infrastructure. Details regarding fuels transition plans and related infrastructure can be found in the 2022 Air Quality Management Plan.

Public Workshop Commenter #8 – Ramine Ross, Western States Petroleum Association (WSPA)

The commentor requested the following:

8-A) Clarification of expectations of newly defined term "OGI Inspection".

8-B) Additional time for discussion of key issues.

Staff Response to Public Workshop Commenter #7

8-A) Staff expects OGI inspections to differ from analyzer inspections. While analyzer inspections utilize U.S. EPA Method 21 and are performed component-by-component, OGI inspections are expected to observe multiple components simultaneously and not individual components.

8-B) South Coast AQMD has rescheduled this project from its original October 2024 Governing Board meeting to the November 2024 Governing Board meeting to allow additional discussion.

Public Workshop Commenter #9 – Kristy Monji-Chung, NV5

The commentor requested the following:

9-A) Additional information regarding CARB OGI training.

9-B) Costs associated with ongoing OGI training.

Staff Response to Public Workshop Commenter #9

9-A) At the present time, the California Air Resources Board offers OGI training to regulators only, such as CARB or South Coast AQMD staff, and not to the regulated community.

9-B) According to OGI device manufacturers, the cost of operator training is included in the capital cost of the OGI device. PAR 1173 does not require annual or periodic operator training and as such, costs associated with OGI training are not included in the analysis.

Public Workshop Commenter #10 – Julia May, Communities for a Better Environment (CBE)

The commentor expressed the following:

10-A) Support for previous comments by Earth Justice and "Pearl". Commentor also expressed, based on monitoring, that actual VOC emissions may be underreported and U.S. EPA emission factors may be underestimating VOC emissions. Commentor also stated costs associated with repair may be overestimated and operators may save money by reducing leaks and reducing product loss.

10-B) Possible cost savings associated with OGI inspection versus analyzer inspection.

10-C) Evaluation of impact of reduction of benzene and other toxics associated with leak reduction.

Staff Response to Public Workshop Commenter #10

10-A) Staff appreciates these comments. Regarding VOC calculations, staff did not rely on original U.S. EPA factors and equations and instead relied on the most current and best available factors and correlation equations available, consistent with past rulemaking projects concerning Rule 1173. The methods employed were from document "Guidelines for Reporting VOC Emissions from Component Leaks" last revised in 2015 for the purposes of South Coast AQMD Annual Emission Reporting. The document comprises refinements of "California Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities", dated February 1999, prepared by the California Air Pollution Control Officers Association (CAPCOA) and CARB. In turn, many of that document's factors and correlation equations are derived with refinements from U.S. EPA Protocol, dated November 1995, entitled "1995 Protocol for Equipment Leak Emission Estimates".

10-B) As staff is leaving in place the existing analyzer inspection requirements, staff did not identify a cost reduction associated with OGI inspection versus analyzer inspection. In future rulemaking, if supported by data and technology improvements, OGI inspection may someday reduce or replace analyzer inspection and realize cost savings.

10-C) Staff expects some co-benefits in the form of reduction of benzene and other toxics by reducing VOC emissions. Toxic emission reductions are not subject to cost-effectiveness and are not including in the cost-effectiveness or incremental cost-effectiveness analyses.

Public Workshop Commenter #1 – Mr. Davenport

The commentor requested the following:

1-C) Clarity regarding possible trigger dates for ozone contingency measures.

Staff Response to Public Workshop Commenter #1

1-C) These contingency measures would only be implemented in the event that U.S. EPA determines that South Coast AQMD has failed to meet an RFP milestone or has failed to attain an ozone NAAQS. Staff expects U.S. EPA to issue a final determination regarding attainment with the 2008 ozone NAAQS no sooner than 2032 and a determination for the 2015 ozone NAAQS no sooner than 2037. In addition, while contingency measures could also be triggered for failure to meet an RFP milestone, South Coast AQMD has never failed to meet an RFP milestone in its history and remains confident it will not in the foreseeable future.

Comment Letters

Comment Letter #1

WSPA

Ramine Ross
Senior Manager, Southern California Region

July 10, 2024

Michael Morris
Planning and Rules Manager
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Via e-mail at: mmorris@aqmd.gov

Re: SCAQMD Proposed Amended Rule 1173, Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants: WSPA Comments on Working Group Meeting #3 & Working Group Meeting #4

Dear Mr. Morris,

Western States Petroleum Association (WSPA) appreciates the opportunity to participate in the rulemaking process for the South Coast Air Quality Management District (SCAQMD or District) Proposed Amended Rule 1173, Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants (PAR 1173). The stated purpose of this rulemaking is to revise the current leak standards and leak detection and repair (LDAR) program requirements established in Rule 1173 in response to control measures proposed in the 2022 Air Quality Management Plan (AQMP) and objectives listed in the State Assembly Bill 617 (AB 617) Community Emission Reduction Plan for the Wilmington, Carson, West Long Beach (WCWLB) community.[1,2]

WSPA is a non-profit trade association representing companies that explore for, produce, refine, transport, and market petroleum, petroleum products, natural gas, renewable fuels, and other energy supplies in five western states including California. WSPA has been an active participant in air quality planning issues for over 30 years. WSPA member companies operate petroleum refineries and other facilities in the South Coast Air Basin that are within the purview of the SCAQMD and thus will be impacted by PAR 1173.

WSPA offers the following comments following the third Working Group Meeting held on June 12, 2024.[3] WSPA is also providing comment in advance of the fourth Working Group Meeting, which is scheduled for July 11, 2024.[4]

[1] SCAQMD PAR 1173 Working Group Meeting #1. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-par-1173-wgm-1.pdf?sfvrsn=12.
[2] Community Emissions Reduction Plan, Wilmington, Carson, West Long Beach. Available at: https://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/wilmington/cerp/final-cerp-wcwlb.pdf?sfvrsn=6
[3] SCAQMD PAR 1173 Working Group Meeting #3. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-par-1173-wgm3.pdf?sfvrsn=8.
[4] SCAQMD PAR 1173 Working Group Meeting #4. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-par-1173-wgm4.pdf?sfvrsn=6.

Western States Petroleum Association 970 West 190th Street, Suite 304, Torrance, CA 90502 310.808.2146 wspa.org

Comment 1-1)

1. **WSPA remains concerned about the District's intended use of Optical Gas Imaging (OGI) technologies with the proposed amended rule and seeks additional clarity on how OGI inspections will be utilized.**

   While WSPA supports the use of OGI as a sensor technology for enhanced leak detection, the technology has operability concerns, including but not limited to:

   - Wide and varied detection thresholds, currently ranging between 2,000 and 5,000 parts per million (ppm). Note that OGI only sees VOC as "smoke" above the detection threshold, it cannot quantify the concentration.
   - Sensitive to environmental factors such as wind, heat, and humidity.
   - Does not work in low light conditions, limiting monitoring time during winter.
   - Varied reading quality as the technology is generally dependent on the ability and judgement of the operator, which impacts the reliability and repeatability of results.
   - In a congested piping complex, it could be difficult to locate the leak source.

   Because of these concerns, WSPA seeks additional discussion on how these considerations will be addressed as part of the proposed OGI inspection program.

   The presentation slides for Working Group Meeting #4 detail an initial rule framework. Under Subdivision (g), Staff is proposing a 1-hour requirement for electronic notification to SCAQMD following the detection of visible leaks and vapors.[5] After a detection, facilities must undergo a number of activities immediately following to help address the detection, and notification within 1 hour of detection may not be feasible. WSPA recommends that PAR 1173 notification provisions be consistent with those in the recently adopted Rule 1178, which state that an owner/operator notify SCAQMD within 24 hours after the inspection is completed.[6]

Comment 1-2)

2. **SCAQMD has proposed revised leak standards for components, repair of which may need to be delayed depending on the component. Additionally, as touched upon in Working Group Meeting #3, the detection of leaks by OGI in unsafe or otherwise inaccessible areas could necessitate a delay of repairs until proper scaffolding and support infrastructure can be erected. The rule must include language that allows for delay of repair in such situations.**

   SCAQMD has proposed revised leak standards as follows:[7]

Table 1. Leak Standards		
Component Type	**Current Rule 1173 Standard (ppm)**	**Proposed Amended Rule 1173 Standard (ppm)**
Valves and Fittings	500	100
Pumps and Compressors	500	400
Pressure Relief Devices	200	200

[5] Ibid.
[6] SCAQMD Rule 1178(h)(2)(A). Available at: https://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1178.pdf?sfvrsn=4.
[7] SCAQMD PAR 1173 Working Group Meeting #3. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-par-1173-wgm3.pdf?sfvrsn=8.

SCAQMD has acknowledged that delay of repair for components is allowed in other air districts in order to reduce emissions associated with shutdown and startup operations.[8] SCAQMD reported it had conducted an evaluation of variance petitions and concluded that delay of repair for components appears unnecessary.[9] This evaluation has not been presented to stakeholders so the scope or methodology used is unknown. Furthermore, the District's analysis was inherently based on the current leak standard (i.e., not the current proposal). Staff have not considered whether a lower leak standard would impact the necessity for delay of repair provisions.

In Working Group Meeting #3, SCAQMD noted that scaffolding is in place for required Method 21 inspections.[10] However, OGI cameras may find leaks in locations where there is a lack of safe access to the component. Time would be needed to safely erect scaffolding before such a repair could be completed.[11] Once access is gained, a Method 21 inspection should be conducted to quantify the leak, and repair of the component should follow the existing Rule 1173 Table 2 timelines.

Additionally, for components that are determined to be accessible, WSPA recommends that the District consider a subsequent Method 21 inspection following an OGI inspection when visible vapors are detected, such that the repair timeline of the identified leaking component can then following the existing Rule 1173 Table 2 timelines. SCAQMD should also consider a timeframe allowance for this Method 21 inspection to be completed, in order to allow an additional inspector with the proper equipment to be deployed.

WSPA recommends that the District work with refineries to develop a delay of repair provision that includes a critical analysis of what is necessary based on revised leak standards and a feasible timeline for safe access to leaking components identified by OGI.

Comment 1-3)

3. **Staff's methane provisions would impose a direct compliance obligation on a pollutant for which SCAQMD does not have the regulatory authority. These are incorrectly labeled as a co-benefit and should be removed from the proposed rule.**

In the development of regulations, a co-benefit is a secondary benefit that is achieved indirectly through the primary regulatory action. For example, a regulation with the intended purpose of reducing NOx criteria pollutant emissions from diesel-fired engines would likely generate a co-benefit from the reduction of toxic air contaminants achieved by the same action taken to reduce NOx emissions. Staff's methane proposal does not qualify as a co-benefit because it would impose direct compliance obligations on methane emissions; not merely recognize a co-benefit resultant from a volatile organic compound (VOC) compliance obligation. SCAQMD notes in Working Group Meeting #3:[12]

[8] Ibid.
[9] Ibid.
[10] Ibid.
[11] Ibid.
[12] Ibid.

> "Components in natural gas service would likely be inspected via OGI inevitably due to their close proximity to VOC components, adding de minimis [sic] burden."

WSPA does not believe that to be the case. Besides the fact that natural gas components are not always co-located with VOC components (for example a natural gas fired boiler), there will be a burden to routinely monitor them. There could be thousands of components in a refinery, which will need to be tagged and identified. We acknowledge that facilities may choose on their own to monitor natural gas components as a good practice. However, the District is proposing that facilities would be required to repair leaking components in natural gas service where the leaks are detected by OGI, thus adding a direct compliance obligation for natural gas. These actions would make natural gas a regulated compound under PAR 1173 and would not qualify as a co-benefit. Requiring such actions would be inappropriate under PAR 1173, and the District should maintain the current rule exemption for components exclusively handling commercial natural gas.[13]

Comment 1-4)

4. **The District must maintain an appropriate process for this rulemaking development by holding technical workshops to detail and gather stakeholder feedback on any significant technical revision to the proposed amended rule prior to the release of the draft rule language. In addition to the technical elements of this proposed rule, SCAQMD must develop and discuss the expected timeline for implementation of these proposals before the draft rule language is released.**

At Working Group meetings for recent rulemakings, Staff have stated that the goals of the stakeholder input process include:[14]

- To receive input from stakeholders throughout the rulemaking process, with early input important for providing Staff the opportunity to work towards resolving issues;
- To develop a proposal that all facilities can comply with and that meets the objectives of the proposed rule or proposed amended rule; and
- To encourage facilities to meet with Staff to discuss any concerns, unique situations, etc.

It is important that District staff allow sufficient time for stakeholder input during key steps in the rulemaking process, especially during the development of proposals, to ensure that the proposals meet the intended purpose of the rulemaking in a technically feasible and cost-effective manner. Although complications that may be revealed through this process could cause delay the rulemaking from the District's intended timeline, it is more beneficial for the

[13] SCAQMD Rule 1173(l)(1)(C). Available at: https://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1173.pdf?sfvrsn=4
[14] SCAQMD Proposed Amended Rules 1147, 1100, and Proposed Rule 1147.1, Working Group Meeting #1. February 28, 2019. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1147.2-1147-1100/par1147_wg1_02202019_final.pdf?sfvrsn=2.
SCAQMD Proposed Amended Rule 1178, Working Group Meeting #1. March 17, 2021. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1178/par1178-wgm1-final.pdf?sfvrsn=6.
SCAQMD Proposed Rule 1460, Working Group Meeting #1. March 16, 2022. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1460/proposed-rule-1460-wgm-1-03162022.pdf?sfvrsn=15.
SCAQMD Proposed Amended Rule 1180, Working Group Meeting #1. January 25, 2023. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1180-and-1180.1/rule-1180---wgm-1---final-version.pdf?sfvrsn=40.

District to have implemented robust and fully developed proposals rather than risk future administrative and technical challenges that may otherwise occur.

The proposed programs are complex and resource intensive, and their overall costs will depend on the timeline for implementation. SCAQMD has not yet discussed the timeline under which these actions would be phased in or otherwise need to be implemented by facilities. The proposed timeline must be presented to stakeholders prior to release of Draft Rule Language so that stakeholders have the ability to provide feedback on the feasibility of the District proposal.

To allow for continued thoughtful discussion on these issues, WSPA is requesting that Staff be allowed more time to develop the 75-day package. Working backwards from an October Governing Board presentation, the planned release of the 75-day package is currently slated for late July. WPSA is appreciative to Staff for all the work and discussion that has been completed so far – site visits, stakeholder meetings, Working Group Meetings, etc. However, as shared in this letter, there are still significant concerns on the feasibility, implementation and cost in the proposed rule concepts that need to be explored and discussed further.

WSPA appreciates the opportunity to provide these comments related to PAR 1173. We look forward to continued discussion of this important rulemaking. If you have any questions, please contact me at (310) 808-2146 or via e-mail at rross@wspa.org.

Sincerely,

Cc: Wayne Nastri, Executive Officer, SCAQMD
Sarah Rees, Deputy Executive Officer, SCAQMD
Michael Krause, Assistant Deputy Executive Officer, SCAQMD
Rodolfo Chacon, Program Supervisor, SCAQMD
Areio Soltani, Air Quality Specialist, SCAQMD
Mayor Pro Tem Larry McCallon, Stationary Source Committee Chair
Ron Ketcham, Board Assistant
Debra Mendelsohn, Board Assistant
Supervisor Holly Mitchell, Stationary Source Committee Vice Chair
Lorraine Lundquist, Board Assistant
Patty Senecal, Senior Director, WSPA

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Staff Responses to Comment Letter #1

1-1) To address operability concerns, the proposed rule requires OGI operators to be trained. Also see staff response to Public Workshop Comment 8-1 regarding OGI inspection expectations. Regarding notification to South Coast AQMD of visible leaks and visible vapors, staff has revised requirements. For the case of visible vapors, notification is required only in the case of inaccessible visible vapors not repaired within 7 days. For the case of visible leaks, notification is required only in the case of inaccessible visible leaks and notification is now required within 12 hours instead of one (1) hour.

1-2) Minimizing additional startups and shutdowns is a key concern for South Coast AQMD, as evident by Rule 429.1 regarding Startup and Shutdown Provisions at Petroleum Refineries and Related Operations. Staff is sensitive to impacts of additional shutdowns, not only for excess VOC emissions associated with shutdown and startup, but also oxides of nitrogen (NOx), carbon monoxide (CO), particulate matter (PM), oxides of sulfur (SOx), and other air contaminants. As a result, PAR 1173 now includes delay of repair provisions for component type valve or fitting, which comprise 99% of all reported components, component type pump (light liquid) or compressor, as well as fin fans and associated fin fan plugs.

1-3) Staff has removed all draft commercial natural gas provisions and requirements from PAR 1173. While staff is cognizant that the South Coast AQMD Governing Board, as expressed through the 2022 AQMP, asked staff to look for co-benefits with greenhouse gas programs in various rulemaking projects, staff concluded because the primary constituents of commercial natural gas, methane and ethane, are explicitly exempted as VOCs in Rule 102, including non-VOCs in a VOC rule is not appropriate at the present time.

1-4) South Coast AQMD has rescheduled this project from its original October 2024 Governing Board meeting to the November 2024 Governing Board meeting to allow additional discussion.

Comment Letter #2

July 26, 2024

VIA: ELECTRONIC MAIL ONLY (mkrause@aqmd.gov)

South Coast Air Quality Management District
Attn: Michael Krause, Assistant Deputy Executive Officer
21865 Copley Drive
Diamond Bar, California 91765

Re: South Coast AQMD Proposed Amended Rule 1173 (Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants)

Dear Mr. Krause:

The undersigned organizations submit this comment letter regarding South Coast AQMD Proposed Amended Rule (PAR) 1173. Additionally, we may provide further comments after the public workshop scheduled for today, July 26. As you know, component leaks are the largest source of VOC emissions at petroleum refineries, including hazardous VOCs that are known to cause cancer and other health harms. The proposed updates to this regulation are critical to reducing VOC emissions in the region, particularly for communities in Wilmington, Carson, and West Long Beach exposed daily to VOC releases from routine oil refinery operations. In fact, staff calculations determined the proposed updates to Rule 1173 would reduce VOC emissions by as much as 680.7 tons per year, or 1.86 tons per day. While we appreciate the District's diligent efforts to complete updates to this rule, we offer the following important recommendations to strengthen the proposed rule:

Comment 2-1)

- **The District must provide additional clarity regarding reinspections under PAR 1173 subparagraph (f)(3)(D), which requires that a facility conduct an analyzer inspection "[a]fter every Repair of a Component within 30 days of Repair."**

  Under PAR 1173 subparagraph (g)(2)(B), a facility is required to repair a component within "14 calendar days of detection."[1] For this reason, operators must take a contemporaneous leak measurement after conducting a repair to

[1] Existing Rule 1173 subparagraph (g)(1) (Table 2 – Repair Periods) provides repair timeframes. Operators are then required to "[i]nspect all repaired or replaced components within 30 days of the repair or replacement" under subparagraph (f)(1)(F).

confirm the leak has been controlled within the required 14-day timeframe. After conducting the repair and confirming the leak rate is below applicable thresholds, under PAR 1173 subparagraph (f)(3)(D), a facility must then conduct a follow-up inspection within 30 days of the repair—which could take place after this 14-day repair period—to confirm the effectiveness of the corrective action. Based on quarterly inspection reports, however, refineries are not conducting and logging these reinspections. In its rule and staff report, the District must clarify how these reinspections should be conducted. The District must also note that reinspections are required to occur within 30 *calendar* days of the repair.

Comment 2-2)

- **The District must provide automatic inflation adjustments for mitigation fees required under PAR 1173 subparagraph (h)(6), which applies when a facility elects not to connect all atmospheric process PRDs to a vapor recovery or other control system.**

  Under PAR 1173 subparagraph (h)(6), the District is proposing to raise mitigation fees for VOC releases from $350,000 to $625,000 to adjust for inflation. A facility is required to notify the District that it intends to pay a mitigation fee rather than utilize vapor recovery or other control systems. The District, however, does not provide a mechanism that automatically adjusts for inflation, meaning that any increases in mitigation fees would require additional rulemaking. This would create delays in implementing mitigation fees and undermine their purpose to deter significant releases of VOCs. In fact, the District recently recognized this issue in updating mitigation fees under Rule 1118—in that rulemaking, the District noted "adjusting mitigation fees annually utilizing the consumer price index going forward serves as a deterrent to flaring and incentivize[s] facilities to minimize flaring emissions."[2]

Comment 2-3)

- **The District must clarify the implementation of ozone contingency measures under PAR 1173 subparagraph (k) to avoid any confusion as to when these measures must be implemented by facilities subject to this regulation.**

  Under PAR 1173 subparagraph (k), the District proposes three ozone contingency measures that would be implemented "upon the issuance of a final determination by U.S. EPA that the South Coast Air Basin has failed to comply

[2] South Coast AQMD, *Staff Report - Proposed Amended Rule 1118 – Control of Emissions from Refinery Flares* (Mar. 2024), https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1118/par-1118-draft-staff-report-april-5-2024.pdf?sfvrsn=32 [https://perma.cc/8E9U-4P3C].

with" either "an RFP requirement in an approved attainment plan for the 2008 or 2015 ozone NAAQS" or attainment of "the 2008 or 2015 ozone NAAQS by the applicable date." PAR 1173 subparagraph (2)(A) then provides that each individual contingency measure would be "effective 60 days after issuance of each final determination." The amended rule then lists the three contingency measures without elaborating on how each of these measures would be phased in based on two attainment deadlines. The District should clarify how it expects these measures will be implemented to avoid any ambiguity.

Comment 2-4)

- **The District must incorporate third-party audit requirements to ensure that all components at these facilities are identified and properly inspected for compliance with PAR 1173 emission limits.**

  PAR 1173 does not provide additional measures to ensure that facilities are complying. The District cannot rely solely on facilities to self-report and on occasional onsite inspections by District staff. At a minimum, the District must require periodic third-party compliance audits of LDAR programs that include verification monitoring of a subset of components, review of quarterly inspection records, component identification procedures, data management procedures, calibration methods, training in monitoring techniques, identification of omitted components, and misclassification of components. These are common issues in LDAR programs that are often unaddressed. The audit report should be made publicly available and submitted to the District for review. The audits should provide detailed findings and a schedule to address any deficiencies identified by the contractor.

***

We appreciate your consideration of these concerns and recommendations. We hope that staff will address these issues in the proposed amended rule.

Sincerely,

Oscar Espino-Padron
Senior Attorney
Earthjustice Los Angeles Office

Julia May
Senior Scientist
Communities for a Better Environment

Maya Golden-Krasner
Deputy Director
Climate Law Institute
Center for Biological Diversity

Jane Williams
Executive Director
California Communities Against Toxics

Cynthia Babich

Founder and Director
Del Amo Action Committee

cc: Mike Morris, Planning & Rules Manager (mmorris@aqmd.gov)
Rodolfo Chacon, Program Supervisor (rchacon@aqmd.gov)
Areio Soltani, Air Quality Specialist (asoltani@aqmd.gov)

Staff Responses to Comment Letter #2

2-1) The requirement of PAR 1173 to inspect following repair is identical in intent to existing Rule 1173, with only minor changes in rule language for phrasing and to replace previously undefined terms with newly-defined term "repair". Staff has revised rule language to read "30 calendar days" for additional clarity.

2-2) PAR 1173 now includes an automatic adjustment of the mitigation fee based on the California Consumer Price Index. The language is consistent with South Coast AQMD Rule 320 which provides an automatic adjustment for the fees set forth in Regulation III.

2-3) See staff response to Public Workshop Comments 1-3 and 5-2 regarding ozone contingency measures.

2-4) Staff believes that South Coast AQMD personnel conducting periodic inspections with OGI devices and Method 21 analyzers as well as review of facility records provides sufficient oversight of owner or operator self-inspections. While some facilities do utilize third-party contractors, staff does not see a need to require it within the rule.

Comment Letter #3

WSPA

Ramine Ross
Senior Manager, Southern California Region

August 8, 2024

Michael Morris
Planning and Rules Manager
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Via e-mail at: mmorris@aqmd.gov

Re: SCAQMD Proposed Amended Rule 1173, Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants: WSPA Comments on Preliminary Draft Rule Language and Preliminary Draft Staff Report

Dear Mr. Morris,

Western States Petroleum Association (WSPA) appreciates the opportunity to participate in South Coast Air Quality Management District (SCAQMD or District) Proposed Amended Rule 1173, Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants (PAR 1173). The stated purpose of this rulemaking is to revise the current leak standards and leak detection and repair (LDAR) program requirements established in Rule 1173 in response to control measures proposed in the 2022 Air Quality Management Plan (AQMP) and objectives listed in the State Assembly Bill 617 (AB 617) Community Emission Reduction Plan for the Wilmington, Carson, West Long Beach (WCWLB) community.[1,2]

WSPA is a non-profit trade association representing companies that explore for, produce, refine, transport, and market petroleum, petroleum products, natural gas, renewable fuels, and other energy supplies in five western states including California. WSPA has been an active participant in air quality planning issues for over 30 years. WSPA member companies operate petroleum refineries and other facilities in the South Coast Air Basin that are within the purview of the SCAQMD and thus will be impacted by PAR 1173.

WSPA offers the following comments following release of the Preliminary Draft Rule Language and Preliminary Draft Staff Report (PDSR) on July 19, 2024.[3,4]

[1] SCAQMD PAR 1173 Public Workshop. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-par-1173-pw.pdf?sfvrsn=8
[2] Community Emissions Reduction Plan, Wilmington, Carson, West Long Beach. Available at: https://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/wilmington/cerp/final-cerp-wcwlb.pdf?sfvrsn=8
[3] Proposed Amended Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants. July 19, 2024 Draft. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-preliminary-draft-rule-language-par-1173-clean.pdf?sfvrsn=6
[4] Preliminary Draft Staff Report, Proposed Amended Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plant. July 2024. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-preliminary-draft-staff-report-par-1173.pdf?sfvrsn=8

Western States Petroleum Association 1415 L Street, Suite 900, Sacramento, CA 95814 805.701.9142 wspa.org

Comment 3-1)

1. **Based on the proposed changes to the definition of "Fitting" in PAR 1173, it appears that SCAQMD intends for the rule to apply to fin fan plugs, a type of component that does not fall under the current Rule 1173. WSPA does not believe fin fan plugs should be subject to the rule. Staff has not contemplated the additional population of components that this would bring under the rule, nor the increased cost of inspecting and repairing the components.**

   The proposed revisions to the definition for Fitting would broaden the set of fittings that are subject to the rule to arguably include fin fan plugs. Fin fan plugs are a type of heat exchanger, and heat exchangers have not historically been subject to the rule. If brought under the rule, this would introduce a significant number of new components into facilities' LDAR inventories. There would be increased costs associated, not only with more Method 21 inspections and OGI inspections, but also for repairs of these components, many of which cannot be isolated for repair or repaired during service due to the high temperatures and pressures of operation. The increased costs associated with inspecting and repairing these components must be considered in Staff's cost-effectiveness analysis, along with the increased emissions that can result from the startup/shutdown necessary to perform repairs. If Staff incorporates these costs and emissions into their analysis and determines the 100-ppm threshold to still be cost-effective, then WSPA would request additional delay-of-repair provisions specific to fin fan plugs to allow repair to occur during the next scheduled turnaround.

Comment 3-2)

2. **The proposals to require identification on all Major Components and quarterly Analyzer Inspections on all Accessible Components, as well as the proposal to remove the exemption for components exclusively handling fluids with a VOC content of ten percent or less, could potentially bring hundreds of thousands of new components under PAR 1173 that have previously not been included. The costs associated with these requirements would be vastly different than what has been represented in the District's analyses to date. The existing exemptions for heavy liquid components should be retained.**

   The existing Rule 1173 specifies that quarterly Method 21 analyses (i.e., Analyzer Inspections) be conducted for all Accessible Components in vapor or light liquid service and all pumps in heavy liquid service; other components in heavy liquid service are not included under this requirement, as stated in Section (f)(3). The same is true for identification requirements under Section (e) for Major Components. The District's proposal to revise these requirements to remove the exception for non-pump heavy liquid components would bring thousands of new components under the rule. This, in combination with the proposal to remove the exemption for components exclusively handling fluids with a VOC content of ten percent or less (Section (l)(1)(D)) and the exemption for components handling liquids with a flash point greater than 250 °F (Section (l)(4)), would effectively require Method 21 inspections on all heavy liquid components currently exempt from Rule 1173.

   Removing these exemptions would result in a dramatic expansion of the rule and would require each facility to hire several new employees to handle tagging, updating Piping and

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Instrumentation Diagrams (P&IDs), conducting the inspections, and repairing components. The costs associated with these requirements would be significantly greater than what has been suggested in the District's analyses to date. The existing exemptions in Rule 1173 for Heavy Liquid components should be retained and the existing definition of Heavy Liquid in PAR 1173(c)(13) should retain reference to the test method listed in Section (j)(3) - ASTM Test Method D93.

Comment 3-3)

3. **There are going to be situations where addressing a repair is unsafe, inaccessible, or infeasible to be completed within the proposed 14 calendar days. The rule must include language that allows for a sufficient delay of repair in such situations.**

SCAQMD has acknowledged that delay of repair for essential equipment or critical components is allowed in other air districts in order to reduce emissions associated with shutdown and startup operations.[5] SCAQMD reported it had conducted an evaluation of past variance petitions before the South Coast Hearing Board and concluded that delay of repair for essential equipment of critical components seemed to be unnecessary.[6] SCAQMD has not presented this evaluation to stakeholders so the scope and approach employed is not known, nor is the methodology used to reach the presented conclusion. The District's analysis was necessarily contingent on the current leak standard (i.e., not the current proposal) since that is what any prior variance records would have reflected. Staff's analysis has not considered whether the lower leak standard proposed for critical components under PAR 1173 would have impacted the necessity for a delay of repair provision.

WSPA recommends that the District work with facilities to develop a delay of repair provision that includes a critical analysis of what is necessary based on revised leak standards and a feasible timeline for safe access to leaking components identified by OGI.

Comment 3-4)

4. **WSPA remains concerned about the District's intended use of Optical Gas Imaging (OGI) technologies as a mechanism for determining compliance with PAR 1173. Facilities should have the opportunity to conduct a focused Method 21 inspection in instances where OGI has identified a positive detection.**

While WSPA supports the use of OGI as a technology for enhanced leak detection, the technology has wide detection thresholds, currently ranging between 2,000 and 5,000 parts per million (ppm) and is also very sensitive to environmental factors such as heat and humidity. The reading quality using OGI technology is also dependent on the skills and judgement of the operator, which can impact the reliability and repeatability of results. Taken together, this technology is not suitable as a direct mechanism for determining compliance. Rather, following detection of a leak exceeding the proposed Component Leak Standards, Staff should consider allowing facilities to first confirm the leak using Method 21 before the 14-day repair timeline automatically starts. If facilities can demonstrate via Method 21 that a leak falls below the applicable standard, then no repair would be needed. If, however, the

[5] Ibid.
[6] Ibid.

leak is confirmed to exceed the applicable standard, then the 14-day repair timeline would begin.

Comment 3-5)

5. **WSPA recommends that the proposed language in PAR 1173(f)(2) and 1173(k)(2)(B) be adjusted to remove the requirement for inspection of "each component" during OGI inspection, so as not to imply that OGI inspections must be conducted on an individual basis for all components subject to the rule.**

   As defined in PAR 1173, an OGI Inspection is a survey of components. An OGI Inspection can function as a survey of just one component at a time or several components at once. For the purpose of efficiency, facilities should not be required to conduct individual OGI Inspections on a component-by-component basis. As such, WSPA suggests that the proposed language in Sections (f)(2) and (k)(2)(B) should be adjusted to remove the phrase "of each Component".

Comment 3-6)

6. **SCAQMD has not explained why electronic notification should be required when Visible Vapors are detected from Inaccessible Components, as proposed in PAR 1173(g)(6). Submitting a notification for every visible leak detected would be very time-consuming. WSPA requests removal of this requirement. Facilities would prefer to indicate leaks using leak tags at ground level, or by an alternative method to be designated by the facility.**

Comment 3-7)

7. **Staff have not provided a basis for including the proposed contingency measures in PAR 1173. Staff have also not provided an explanation for how including these more stringent control levels comports with the District's Health & Safety Code obligations for establishment of BARCT. Staff should provide justification for including these measures or remove them from PAR 1173.**

   The District has included three Contingency Measures (CMs) in PAR 1173, which are proposed to be implemented upon determination by USEPA that the South Coast Air Basin has failed to meet certain federal air quality requirements. Staff has arbitrarily selected what these CMs would entail, without demonstrating the basis. As presented at the Public Workshop held on July 26, 2024, Staff found that the CMs were not incrementally cost-effective.[7] This is documented in Staff's PDSR analysis, which presented incremental cost-effectiveness values ranging from $47,700 to $115,600 per ton of VOC emissions reduced. Given these conclusions, these CMs should not have been included in PAR 1173. Per the California Health and Safety Code (HSC), BARCT measures must be technically feasible, and demonstrated to be cost-effective on both an absolute and an incremental basis. Deeming these as "contingency measures" does not avoid this obligation.

[7] SCAQMD PAR 1173 Public Workshop. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-par-1173-pw.pdf?sfvrsn=8

Comment 3-8)

8. **Staff is proposing to remove from the rule the applicability of reporting provisions of Rule 430, as provided for in Section (g)(3). Stakeholders deserve an understanding for this decision.**

   Staff is proposing to remove from the rule the applicability of reporting provisions of Rule 430. WSPA is unaware of which Working Group meeting(s) this was discussed in, and it does not appear to be included in the PDSR. WSPA requests an explanation from Staff on the reason for the proposal to remove this provision from the rule.

Comment 3-9)

9. **WSPA does not understand why the phrase "to the satisfaction of South Coast AQMD personnel" is included in Section (d)(3) when an approved test method is used to demonstrate that a component is not exceeding the Violation Standards. WSPA suggests removing this phrase in this section of the proposed amended rule.**

   PAR 1173(d)(3) includes the following phrase: "…in accordance with the test method in paragraph (j)(1) to the satisfaction of South Coast AQMD personnel". If a leak test is done according to the referenced test method (i.e., Method 21), then why would District personnel need to deem the results satisfactory? WSPA suggests removing "to the satisfaction of South Coast AQMD personnel" from this section. Additionally, WSPA requests that the District consider allowing additional time for facilities to conduct these types of demonstrations for Inaccessible Components, such as three days.

Comment 3-10)

10. **Where the District relies on existing standards in other air districts to support proposed leak standards in PAR 1173, associated conditions from the referenced rules should also be included.**

    The District has cited Bay Area Air Quality Management District (BAAQMD) Regulation 8, Rule 18 – Equipment Leaks as a reference for similar proposed leak standards in PAR 1173. However, SCAQMD has not proposed the same repair timelines as in the BAAQMD rule. The BAAQMD standard consists of several inter-related provisions and exemptions that were adopted collectively under the rule. SCAQMD cannot select some parts of the BAAQMD rule (e.g., the leak standards) for PAR 1173 and not the corresponding provisions/exemptions as these together dictate the stringency. If SCAQMD is to align with the BAAQMD rule as support for certain leak standards under PAR 1173, Staff should ensure that the related provisions align as well.

Comment 3-11)

11. **WSPA suggests that Staff consider retaining the phrase "atmospheric process PRD" in Sections (i)(3)(A) and (i)(3)(B), where it has been stricken in the proposed amended rule. This would retain the clarity that the phrase provides.**

Comment 3-12)

12. **WSPA objects to the proposed removal of the exemption in Rule 1173(l)(3), which states that the provisions of Rules 466, 466.1, and 467 shall not apply to facilities subject to Rule 1173. These sources should be covered under one rule only, to avoid conflicting regulation. Staff has not initiated rulemaking processes for Rules 466, 466.1, and 467 to align them with proposed amendments to Rule 1173, so removing**

this exemption could lead to confusion and conflicting requirements for applicable sources.

In addition to the above comments, WSPA requests responses to the following clarifying questions about PAR 1173:

Comment 3-13)

1. In Section (m) of the Preliminary Draft Rule Language, the District proposes interim violation standards and leak thresholds what would apply during the time period after rule adoption through October 1, 2025. However, no interim repair timelines are specified. Is the intention during this interim period to require repair within one day or within 14 days, as proposed in Section (g)?

Comment 3-14)

2. Many proposed amendments to the rule reference "electronic" notification requirements. The language implies that this requirement would begin upon rule adoption, but Staff have not included instructions on how or where these reports would be submitted, or what format they would take, or what electronic systems SCAQMD would need to develop to accommodate such reporting. Can Staff please provide more detail about the electronic notifications to clarify? WSPA would also recommend that SCAQMD consider a phase-in period (i.e., after rule adoption) to ensure that whatever guidance and/or systems are needed can be put into place.

As described in these comments, several significant technical issues persist. Additional time for this rulemaking will be needed to discuss and resolve the significant technical issues remaining, so WSPA requests that Staff consider proposing the Set Hearing date for this rule to February 2025; it is currently scheduled for September 6, 2024.

WSPA appreciates the opportunity to provide these comments related to PAR 1173. We look forward to continued discussion of this important rulemaking. If you have any questions, please contact me at (310) 808-2146 or via e-mail at rross@wspa.org.

Sincerely,

Barbara Ross

Cc: Wayne Nastri, Executive Officer, SCAQMD
Sarah Rees, Deputy Executive Officer, SCAQMD
Michael Krause, Assistant Deputy Executive Officer, SCAQMD
Rodolfo Chacon, Program Supervisor, SCAQMD
Areio Soltani, Air Quality Specialist, SCAQMD
Mayor Pro Tem Larry McCallon, Stationary Source Committee Chair
Ron Ketcham, Board Assistant
Debra Mendelsohn, Board Assistant
Supervisor Holly Mitchell, Stationary Source Committee Vice Chair
Lorraine Lundquist, Board Assistant
Patty Senecal, Senior Director, WSPA

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Staff Responses to Comment Letter #3

3-1) After internal discussion, staff concluded that fin fan plugs meet the definition of a fitting component. However, in an effort to improve clarity, PAR 1173 has been revised to clearly and unambiguously identify fin fans as a type of component and their associated fin fan plugs as subject to leak inspection and repair requirements of PAR 1173. As noted in your comment, because of the nature of fin fans, staff has crafted a unique fin fan repair schedule with consideration for delay of repair.

3-2) Rule language has been revised to more closely align with existing rule intent and language.

3-3) PAR 1173 has been revised to include delay of repair for certain categories of components in certain situations. Additionally, PAR 1173 updates an existing exemption, that delayed inspections due to safety, to include repairs. See also Response to Comment Letter 1-2.

3-4) PAR 1173 has been revised to include a Method 21 pathway for leaks detected using an OGI device.

3-5) PAR 1173 has been revised, including in Definitions, to emphasize the nature of OGI inspections of multiple components simultaneously in contrast with the nature of analyzer inspections of individual components.

3-6) PAR 1173 has been revised to require electronic notification of inaccessible visible vapors if repair is not complete within seven (7) calendar days. Staff expects almost all inaccessible visible vapors, even accounting for time to safety erect scaffolding or other access equipment, to be eliminated within seven (7) calendar days and in the few extraordinary cases when that is not possible, electronic notification to South Coast AQMD is warranted.

3-7) Under the Clean Air Act, South Coast AQMD is obligated in its air quality plans to establish contingency measures in the event of nonattainment or failure to make reasonable further progress towards attainment. In the most recent air quality plan, the 2022 AQMP, South Coast AQMD committed to include contingency measures in rulemaking. The three contingency measures within PAR 1173 all are cost-effective but are not incrementally cost-effective, and therefore are only included as contingency measures.

3-8) In an effort to strike obsolete language, this provision was inadvertently removed. Existing rule language is now retained and moved to subdivision (i) *Recordkeeping and Reporting Requirements*.

3-9) The language "to the satisfaction of South Coast AQMD personnel" is consistent with phrasing in existing Rule 1173 and is used throughout PAR 1173. Its usage here is to ensure that South Coast AQMD personnel remain the final arbitrator when deciding whether or not to issue a Notice of Violation. For example, if presented with evidence from a Method 21 analyzer that was not within calibration, South Coast AQMD should not accept this less than credible evidence.

PAR 1173 has been revised to allow for additional time for inaccessible components: one (1) calendar day.

3-10) As part of rulemaking, a survey of other air district regulations is performed and a comparative analysis is presented in working group meetings as well as staff reports. BARCT assessments and other analyses were performed on feasible control measures for

consideration in rulemaking projects. Associated conditions are considered but are not mandatory when conducting the BARCT assessment.

3-11) In an effort to strike obsolete language, this provision was inadvertently removed. Existing rule language is now retained.

3-12) In an effort to strike obsolete language, this provision was inadvertently removed. Existing exemptions are now retained.

3-13) PAR 1173 has been updated for clarity. During the interim period, repair must be performed on components exceeding the applicable leak standard in Table 5 – *Interim Leak Standards* according to the repair schedule in Table 6 – *Interim Repair Periods*, found in subdivision (m) *Interim Procedures and Requirements*.

3-14) PAR 1173 has been revised to incorporate an email address, Rule1173Reports@aqmd.gov, and also provides for other means of electronic notification when they are developed. Staff also plans to release updated Rule 1173 forms in the near future. In addition, South Coast AQMD is in the process of developing a Rule 1173 web-based submission portal similar to U.S. EPA's Central Data Exchange (CDX) or CARB's California Electronic Greenhouse Gas Reporting Tool (Cal e-GGRT).

Comment Letter #4

CIPA
California Independent Petroleum Association

September 13, 2024

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

Via email: asoltani@aqmd.gov

Re: Comments on Proposed Amendments to Rule 1173

Dear Areio:

California Independent Petroleum Association (CIPA) provides the following comments relating to the proposed amendments to South Coast AQMD (the District) Rule 1173, "Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants."

CIPA is a non-profit, non-partisan trade association representing over 300 independent crude oil and natural gas producers, royalty owners, and service and supply companies operating in California. Our members represent approximately 70% of California's total oil production and 90% of California's natural gas production. Since 1976 the association has kept the political, regulatory, and public policy interests of independent oil and gas producers at the forefront of its agenda. CIPA represents the diverse interests of its membership before the California State Legislature, the United States Congress, and numerous federal, state, and local regulatory agencies. The association is an advocate of free market principles, eliminating duplicative regulation, stimulating recovery of domestic resources and improving the industry's public image.

Benefits to air quality in the South Coast AQMD that are projected from these amendments will be minimal in nature, not having a significant impact on air quality in the LA Basin resulting from increased frequency of inspections and lowering of leak thresholds. Data provided by CIPA members indicates that the total leaks detected from "valves, fittings and other components" represented leaks detected from only 0.18% for all "valves, fittings and other components" inspected during calendar year 2023. These inspections were conducted at typical small oil and gas production facilities, not refineries or chemical plants.

Oil and gas producers in California continue to endure a barrage of regulations from many agencies, making it more expensive and difficult to conduct business. On a cumulative basis these regulations add many dollars to the cost of lifting a barrel of oil out of the ground. The proposed amendments add to this conundrum with a minor increase in air quality. Actual cost and time in complying with the proposed increase in inspection frequency will burden California's small producers even further.

For many small producers it will not be feasible to purchase, maintain and have personnel to support the operation of an OGI camera, thus making it necessary to contract this service with a third party. Contracting for this service and an increased inspection frequency will place a significant financial burden on small oil and gas operators.

Comments

CIPA's comments are summarized below:

- Increased inspection frequency will financially and operationally burden small oil and gas operators. 4-1)
- Lowering leak detection thresholds will cause additional liabilities for small producers. 4-2)
- Cost associated with increased inspections and lower leak detection thresholds will further exacerbate compliance for small oil and gas producers. 4-3)
- CIPA respectfully requests consideration in maintaining current leak detection thresholds and inspection frequency for small oil and gas producers. 4-4)

Thank you for this opportunity to comment on the proposed amendments to Rules 1173. CIPA looks forward to your responses and the opportunity to work with SCAQMD in amending the rules to achieve cost effective and practical compliance while improving air quality in the Los Angeles Basin area.

Best regards,

Trent R. Rosenlieb
CIPA LA Basin Project Lead

Staff Responses to Comment Letter #4

4-1) Monthly OGI inspection of components was found to be cost-effective for all facilities subject to the rule. As a result, staff is not modifying the OGI inspection frequency in PAR 1173. Staff is sensitive to impacts on small business and performed a detailed Socioeconomic Impact Assessment for PAR 1173. In that assessment, consideration was given to the impacts on small businesses. Staff would also like to note that these small businesses may already be subject to other rules that require OGI inspections such as Rules 463 and 1148.1 and may already have access to OGI devices.

4-2) Staff agrees that there are costs associated with the control measures proposed in PAR 1173 to achieve VOC emission reductions. A detailed BARCT assessment was performed and found that the costs to achieve VOC emission reductions meet the cost-effectiveness thresholds set by the South Coast AQMD Governing Board. In addition, while more leaks are expected to be found under self-inspection, these are expected, if properly repaired, to reduce the number of leaks found by South Coast AQMD inspection and in turn reduce enforcement actions.

4-3) See Response 4-2.

4-4) South Coast AQMD is currently classified as in "extreme nonattainment" with respect to ozone standards, the highest level of noncompliance identified by U.S. EPA and a classification shared with only one other air district in the United States. South Coast AQMD is obligated by federal and state law to make reasonable further progress towards attainment with clean air goals including ozone NAAQS. VOC is one of the chief contributors to ozone formation and thus South Coast AQMD is obligated to reduce VOC emissions, including fugitive VOC emissions from refineries, oil and gas producers, and other facilities subject to Rule 1173. South Coast AQMD will continue to propose lower leak standards whenever it is cost-effective in accordance with South Coast AQMD Governing Board guidelines.

Comment Letter #5

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September 13, 2024

SCAQMD Governing Board
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Areio Soltani
Air Quality Specialist
Via Email: asoltanti@aqmd.gov

Re: Concerns Regarding Proposed Amendments to Rule 1173

Dear Members of the SCAQMD Governing Board,

On behalf of The Termo Company, I am writing to express our concerns regarding the Proposed Amended Rule 1173 and its potential impact on small, family-owned businesses like Termo. After careful review, we believe that the proposed changes would impose significant operational and financial burdens on our operations, without yielding proportional environmental benefits.

Comment 5-1)

Economic Burden and Operational Costs
The proposed monthly inspections would introduce significant additional costs. Our estimates indicate that contracting services such as Montrose for all our facilities could cost us around $135,500 annually. Alternatively, purchasing and maintaining our own Optical Gas Imaging (OGI) camera would require an initial investment of $70,000, with an additional $17,600 in recurring costs each year. Additionally, with the recent adoption of Rule 463, which mandates biweekly inspections of tank farms, we are likely to incur further expenses by purchasing an OGI camera to meet these new requirements. While we are prepared to make necessary investments, the efficiency and cost-effectiveness of our operations could be impacted by these changes, potentially diverting resources from other critical areas that also contribute to our overall environmental performance.

Comment 5-2)

Inconsistent Leak Standards Across Agencies
The proposed reduction of leak standards - lowering the threshold for compressors and pumps from 500 ppm to 400 ppm, and for valves and fittings from 500 ppm to 100 ppm - is significantly stricter than those enforced by other regulatory agencies, such as the U.S. Environmental Protection Agency (EPA). Maintaining consistency across different regulatory frameworks is crucial for our operations, as it allows us to apply uniform maintenance and inspection protocols. The current 500 ppm threshold is already stringent and effective, and further reductions would only complicate compliance without offering substantial environmental gains.

Comment 5-3)

Technical and Practical Limitations
The proposed thresholds present significant technical challenges, particularly for valves, fittings, and other components that are not designed to meet such low leak thresholds. For example, achieving leak rates below 400 ppm for equipment like stuffing boxes is nearly impossible due to their design. Retrofitting or replacing these components to comply with a 100 ppm standard is not always feasible due to design limitations and the high costs associated with such upgrades. Achieving and maintaining

the proposed lower leak rates would require advanced, expensive equipment and more frequent inspections, which would strain resources and increase operational complexities.

Comment 5-4)

Proactive Measures in Place
At Termo, we are committed to maintaining the highest environmental standards. We have equipped our field workers with handheld monitoring devices, enabling them to detect and repair leaks as soon as they are identified. We follow a routine maintenance schedule and conduct both quarterly and periodic LDAR (including the ad hoc use of OGI). This proactive approach demonstrates our commitment to minimizing leaks without the need for stricter regulations.

Comment 5-5)

Successful Compliance Under Current Standards
Our facilities have consistently demonstrated strong compliance with the current Rule 1173. In 2023, our largest facilities maintained exceptionally low leak detection rates, with only 0.08% to 0.12% of inspected components showing leaks. Even with our smaller facilities, we achieved similarly low leak rates. Notably, one of our facilities detected no leaks at all throughout the year.

These results underscore our proactive approach to maintaining and inspecting components, proving that our current protocols effectively minimize leaks. Given our excellent track record, we believe that the proposed stricter rules are unnecessary and could impose undue operational burdens without significantly improving environmental outcomes.

In conclusion, we urge the SCAQMD Governing Board to consider the disproportionate impact these proposed amendments would have on small, family-owned businesses like ours. We are fully committed to environmental stewardship and believe that the current Rule 1173 standards are sufficient to protect air quality without imposing additional hardships on operators who are already complying effectively.

Thank you for your consideration.

Sincerely,

Brenna Junkermier
Regulatory & Environmental Compliance Specialist
The Termo Company

Staff Responses to Comment Letter #5

5-1) See Response 4-2. Regarding purchasing of OGI devices, staff prepared a detailed cost-effectiveness analysis as part of the BARCT assessment process and found it to be cost-effective in accordance with South Coast AQMD Governing Board guidelines. In addition, as noted in your comment, other South Coast AQMD rules such as Rules 463 and 1148.1 also require OGI inspection and PAR 1173 was crafted so that the same OGI device may be used to comply with those other rules.

5-2) See Response 4-4. Regarding compliance with federal regulations, staff crafted PAR 1173 to ensure stringency with federal regulations to be at least as stringent if not more stringent. Compliance with PAR 1173 should ensure that owners and operators are also complying with federal regulations.

5-3) Stuffing boxes, wellheads, and well cellars are subject to Rule 1148.1 which has different leak standards than PAR 1173. Staff is aware that the lower 100 ppm leak standard may pose a challenge to facilities and therefore PAR 1173 retains current leak standards in the interim to allow for a phase-in period of more than one (1) year. PAR also introduces a limited delay of repair for essential components to allow for repair or replacement of components at the next shutdown of the process unit, if needed. Staff is aware of the additional costs associated with monthly OGI inspection and performed a detailed cost-effectiveness analysis in the BARCT assessment and found the proposal to be cost-effective.

5-4) Staff appreciates these proactive measures in place and incorporates these types of best management practices into the proposed rule.

5-5) Existing Rule 1173 contains provisions to relax quarterly Method 21 analyzer inspections to annual analyzer inspections for some categories of components when superior leak performance is demonstrated. PAR 1173 has retained these provisions and the facilities referenced may qualify for these provisions to reduce operational burdens and costs. Also, see Response 4-4.

Comment Letter #6

WSPA

Ramine Ross
Senior Manager, Southern California Region

September 16, 2024

Michael Morris
Planning and Rules Manager
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Via e-mail at: mmorris@aqmd.gov

Re: SCAQMD Proposed Amended Rule 1173, Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants: WSPA Comments on Revised Preliminary Draft Rule Language

Dear Mr. Morris,

Western States Petroleum Association (WSPA) appreciates the opportunity to participate in South Coast Air Quality Management District (SCAQMD or District) Proposed Amended Rule 1173, Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants (PAR 1173). The stated purpose of this rulemaking is to revise the current leak standards and leak detection and repair (LDAR) program requirements established in Rule 1173 in response to control measures proposed in the 2022 Air Quality Management Plan (AQMP) and objectives listed in the State Assembly Bill 617 (AB 617) Community Emission Reduction Plan for the Wilmington, Carson, West Long Beach (WCWLB) community.[1,2]

WSPA is a non-profit trade association representing companies that explore for, produce, refine, transport, and market petroleum, petroleum products, natural gas, renewable fuels, and other energy supplies in five western states including California. WSPA has been an active participant in air quality planning issues for over 30 years. WSPA member companies operate petroleum refineries and other facilities in the South Coast Air Basin that are within the purview of the SCAQMD and thus will be impacted by PAR 1173.

On September 4, 2024, SCAQMD released Revised Preliminary Draft Rule Language.[3] WSPA offers the following comments:

Comment 6-1)

1. PAR 1178(c) Definitions

WSPA requests clarification of the definition of an "outage" in (c)(26).

(c)(26): Outage

[1] SCAQMD PAR 1173 Public Workshop. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-par-1173-pw.pdf?sfvrsn=8
[2] Community Emissions Reduction Plan, Wilmington, Carson, West Long Beach. Available at: https://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/wilmington/cerp/final-cerp-wcwlb.pdf?sfvrsn=8
[3] Revised Preliminary Draft Rule Language, Proposed Amended Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plant. September 2024. Available at: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/par-1173/final-revised-pdrl-par-1173.pdf?sfvrsn=6

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WSPA requests that the District provide additional language to clarify what situations qualify as an unscheduled shutdown for "other reasons." As a possible solution, WSPA recommends that SCAQMD include a definition for "Process Unit Shutdown" which mirrors the definition of that term found in 40 CFR 60.481 Subpart VV as follows:[4]

[New Section]

PROCESS UNIT SHUTDOWN means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a process unit or part of a process unit consistent with safety constraints and during which repairs can be accomplished. The following are not considered process unit shutdowns:

(1) An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours.

(2) An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown.

(3) The use of spare equipment and technically feasible bypassing of equipment without stopping production.[5]

Comment 6-2)

2. PAR 1173(d), South Coast AQMD Inspection Procedures

Section (d)(3) states that the owner or operator of a facility shall be in violation of the rule if SCAQMD personnel detect a component with visible vapors unless, for an inaccessible component, the owner or operator demonstrates compliance with an appropriate analyzer within one calendar day after detection. WSPA requests that up to three (3) calendar days be allowed to conduct an analyzer test on inaccessible components before a Notice of Violation is issued.

As described in PAR 1173(d)(3), a facility can be found in violation of the rule if a component with visible vapors is detected by South Coast AQMD personnel unless the owner or operator can demonstrate that the component is not exceeding the applicable standard using an appropriate analyzer to the satisfaction of South Coast AQMD personnel. However, conducting an analyzer test on inaccessible components may require the setup of additional equipment such as scaffolding. WSPA requests that the District allow a facility up to three days to conduct the analyzer test to allow sufficient time to complete the setup and testing of inaccessible components.

Comment 6-3)

3. PAR 1173(e) Identification Requirements

[4] 40 CFR Part 60, Subpart VV. Available at: https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-60/subpart-VV.
[5] 40 CFR 60.481 Subpart VV. May 16, 2024. Available at: https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-60/subpart-VV/section-60.481 . Accessed September 2024.

WSPA requests that the requirement for all components under repair be conspicuously physically identified with tag that can be easily viewed from a distance to be altered to be less subjective.

PAR1173(e)(5) requires that the owner or operator conspicuously physically identify all components under repair with a tag to be easily viewed from a distance and maintain such components conspicuously tagged until repair is complete. The word "conspicuously" is subjective and does not provide facilities with a clear understanding of what physical identification will be deemed conspicuous. It also may not be possible for a tag to be easily viewed from a distance, and the actual distance is not defined. For example, if a Component under Repair is located on a platform, a person walking through the site at ground level may not be able to view the tag.

Comment 6-4)

4. **PAR 1173(f) Self Inspection Requirements**

WSPA requests that facilities be allowed to bypass the monthly Optical Gas Imaging (OGI) inspection during months when the quarterly analyzer inspection is completed.

Section (f)(2) requires a monthly OGI inspection for all components. PAR 1173(f)(3) requires a quarterly analyzer inspection for all accessible components and an annual analyzer inspection of all inaccessible components. WSPA proposes that facilities be allowed to bypass the OGI inspection in months when the quarterly Analyzer Inspection is completed.

Comment 6-5)

5. **PAR 1173 (g) Leak Standards and Repair Requirements**

Section (g) of PAR 1173 outlines the leak standards for each component type, allowance for delay of repair, and requirements for notification and repair of components with visible leaks and visible vapors. WSPA requests that the requirements be updated to provide clarity.

(g)(2): Components other than Fin Fans Exceeding Applicable Standards

PAR 1173(g)(2)(B) states that repair of an essential component must be completed no later than the end of the next Planned Outage or Turnaround. WSPA requests that the delay of repair completion deadline be based on the next turnaround date or process unit shutdown date. An outage is defined as an unscheduled shutdown in PAR 1173(c)(26), therefore a facility cannot anticipate an outage. Without the necessary planning the facility may not have the required parts on site to be able to replace or repair an Essential Component during the unplanned shutdown. It may take longer to safely purge, clean, and clear the equipment for repair. WSPA supports the completion of a delay of repair by a Turnaround, but the completion of a delay of repair by an outage would leave facilities open to a violation due to the inability to complete a repair during an unscheduled event.

Table 3 within this section defines the delay leak standard and total number of delays of repair allowed for essential component types. However, only valves or fittings are included

in the table. WSPA requests that all essential components, including valves, fittings, pumps, and compressors, be added to this row of the table to clarify that these standards are applicable to all essential components. WPSA also requests that a second row be added to this table for fin fan components.

Comment 6-6)

(g)(4): Visible Leaks from an Inaccessible Component other than a Fin Fan

PAR 1173(g)(4) requires that facilities notify SCAQMD of a visible leak from an inaccessible component before the end of the operating shift, not to exceed 12 hours of the detection. WSPA requests that SCAQMD extend the timeline for notification to within 24-hours of the detection of the leak and remove the requirement to notify before the end of the operating shift.

WSPA appreciates the opportunity to provide these comments related to PAR 1173. We look forward to continued discussion of this important rulemaking. If you have any questions, please contact me at (310) 808-2146 or via e-mail at rross@wspa.org.

Sincerely,

Cc: Wayne Nastri, Executive Officer, SCAQMD
Sarah Rees, Deputy Executive Officer, SCAQMD
Michael Krause, Assistant Deputy Executive Officer, SCAQMD
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Staff Responses to Comment Letter #6

6-1) The intent of the verbiage "other reasons" is to be as inclusive as possible and to not exclude any possible shutdowns of process units within the meaning of "outage". Staff examined delay of repair provisions in Bay Area AQMD, San Joaquin Valley APCD, and Santa Barbara County APCD rules. In those air districts, delay of repair was limited by time, by one (1) or five (5) years. Staff took a different approach as strict time limits could require facilities to have forced shutdowns to comply with rule requirements and excess emissions associated with shutdown and startup procedures. Instead, PAR 1173 looks to take advantage of unscheduled shutdowns of process units for any reason to perform delayed repair, not just scheduled shutdowns, known as turnaround. After careful review, staff has revised the definition of "outage" to mean an unscheduled shutdown of a process unit of more than 24 hours, consistent with federal regulation 40 CFR 60.481 Subpart VV. In addition, the Staff Report also clarifies that a process unit temporarily held in suspense with a recirculating fluid stream, known as "hot standby mode", does not meet the definition of an outage.

6-2) The structure of PAR 1173 is unique from other South Coast AQMD rules in that compliance and enforcement procedures are elements of rule text. As such, the rule text must allow South Coast AQMD's Compliance and Enforcement Division to operate an efficient and effective program. After discussion with that division, allowing one (1) calendar day was deemed sufficient to present evidence to South Coast AQMD personnel to not be subject to a Notice of Violation. Staff believes with the use of extension probes, ladders, and lifts, one (1) day is sufficient to access inaccessible components with an analyzer for the purpose of determining VOC leak rate of components with visible vapors. It should be noted that even if a Notice of Violation is issued, facilities still retain their right to due process and may present their own credible evidence during the settlement process of Notices of Violation.

6-3) Staff agrees that the verbiage "conspicuously" may be subject to interpretation. As such, PAR 1173 has been updated to more closely align with existing rule language and requires these repair tags to be "larger and of a different color" than other tags to remove ambiguity.

6-4) See Response to Comment 4-A.

6-5) As noted in Response to Comment 6-1, PAR 1173 has revised the definition of outage to mean an unscheduled shutdown of a process unit lasting more than 24 hours. Staff believes that this will remove the vast majority of unscheduled shutdowns caused by brief interruptions of power or other reasons. Staff also believes, in an effort to reduce fugitive VOC emissions, facilities should take advantage of these longer unscheduled shutdowns to remove ongoing sources of fugitive VOC emissions. Facilities could utilize a best management practice of maintaining onsite spare component parts for components identified and tagged under delay of repair, in the event that an unscheduled shutdown of a process unit lasting more than 24 hours occurs.

Staff has revised Table 3 – *Limited Delay of Repair* to now include a limited number of essential components of type compressor or pump (light liquid), in order to reduce the likelihood of excess emissions associated with shutdown and startup of process units.

Staff did not list component type fin fan (or associated fin fan plugs) in Table 3 – *Limited Delay of Repair* because the table applies to components referenced in paragraph (g)(2). Paragraph (g)(2) states in pertinent part: "For a Component other than a Fin Fan…".

6-6) PAR 1173 has been revised to require reporting of inaccessible visible leaks to South Coast AQMD within 24 hours of detection.