

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

**PERIODIC MONITORING GUIDELINES
FOR TITLE V FACILITIES**

**Stationary Source Compliance
November 1997**

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INTRODUCTION

This document was developed to provide South Coast Air Quality Management District (AQMD) staff and the public guidelines for the periodic monitoring, testing and recordkeeping requirements for Title V permits. Periodic monitoring is required by Title V for the SIP-approved, federally enforceable rules that do not contain sufficient monitoring requirements to assure compliance with the emission limitations or other requirements.

EVALUATION PROCESS

Staff has identified all emission limitations or other requirements, as well as the monitoring, testing and recordkeeping requirements in each SIP-approved, federally enforceable AQMD rule (or the latest AQMD developed version of rule). Where the rule does not specify adequate monitoring for a specific requirement, staff has made recommendations to fill the gap. A draft document was published in August 1997, and a public consultation was held to solicit public comments. Staff has carefully reviewed all public comments, and significantly revised the guidelines. Title V facilities may propose other periodic monitoring methods or procedures that provide equivalent level of compliance assurance to the methods suggested in these guidelines. Periodic monitoring requirements for each Title V facility are subject to public, affected states and EPA review and comments prior to the issuance of the final permit.

GENERAL PROVISIONS

The provisions below are applicable to all gap-filling monitoring, testing and recordkeeping specified in this document.

“Trivial Activities”

Appendix A of EPA “White Paper for Streamlined Development of Part 70 Permit Applications”, July 10, 1995, contains a list of activities defined as “trivial activities” (also reproduced in AQMD’s Title V Technical Guidance Document). These activities are not listed on a Title V permit and do not require monitoring.

Insignificant Emission Units

Equipment that do not require a written permit (Rule 219-exempt) and are not subject to any source-specific regulatory requirements are not required to be listed in a Title V permit, and do not require monitoring.

Non-operated Equipment

Equipment that are not operated at all during a monitoring period shall not be subject to the monitoring requirements during that period.

RECLAIM Facilities

The gap-filling monitoring requirements specified in this document pertaining to NO_x emissions and SO_x emissions are not applicable to RECLAIM facilities that are subject to the comprehensive requirements of monitoring, reporting, and recordkeeping specified under RECLAIM rules.

Facility-Proposed Alternatives to Monitoring

Facilities may propose alternatives to the monitoring specified in this document for the AQMD's review. To be approved, the facility must demonstrate that the equipment operating with the monitoring alternative provides an equivalent level of assurance that the equipment is in compliance. A facility may also propose that no monitoring is required if the facility demonstrates that there is no possibility of noncompliance under all reasonably possible operating scenarios

Monitoring for Air Pollution Control Devices in Appendix A

Appendix A contains the monitoring requirements for air pollution control devices. Appendix A is applicable to all control devices installed and operated to meet the requirements of SIP-approved rules specified under Regulations IV, XI, or XIII.

Requirement for Performance Testing or Parametric Monitoring

Requirements for major sources

For several AQMD rules, the gap-filling monitoring requirements in these guidelines include a requirement for major sources to either do 1) performance testing once every five years; or 2) parametric monitoring that has been correlated to a performance test.

Major source definition

A major source means a source, or all sources venting to a single stack, that has a potential to emit, pre-control device emissions equal to or greater than the thresholds shown in the table below:

Pollutant	Emission thresholds (tpy)
VOC	10
NO _x (as NO ₂)	10
SO _x (as SO ₂)	100
CO	50
PM	70

Pre-control device means that the potential to emit is based on emissions without any control device in operation.

Performance testing

Performance testing must be conducted using the full reference method approved by EPA, ARB, AQMD, or equivalent to demonstrate compliance with an emission limitation

Performance testing is not required for equipment where it is not possible to conduct a source test (e.g. elevated flares).

Parametric monitoring

A major source may be excused from the performance test every five years if the facility conducts parametric monitoring that has been correlated with a performance test, such that the parametric monitoring can be considered an accurate and reliable indicator of compliance with the emission limitations.

To establish the correlation, the facility must:

1. identify all parameters that are relevant to the source emission levels;

2. conduct performance testing using the appropriate reference methods approved by EPA, ARB, AQMD, or equivalent, while simultaneously monitoring the relevant parameters; and
3. determine the allowable parameter limits (or ranges) based on the testing that assure compliance with the emission limitations. Testing is not required to be conducted over the entire operating ranges of the major source.

For major sources with control devices, the relevant parameters will at least include the control device monitoring parameters identified in Appendix A and source operating parameters that affect the emissions (e.g. throughput, material properties, operating modes).

Existing performance tests may be used to obtain the requirements for parametric monitoring provided that no changes have taken place that could result in a significant change in the performance of the control device since the tests were conducted. Such changes include, but are not limited to, a modification to the control device, an increase in process capacity, or a change in material used.

Where existing performance tests are not available, or do not contain the required information, the facility is required to submit to AQMD a test plan and schedule for testing.

Requirements for other sources

The facility is required to obtain the parameter limits (or ranges) based on engineering assessments, manufacturer's data, or other reliable sources of information.

Savings provisions

The requirements set above for the performance testing and monitoring of a control device do not supersede any existing, more stringent, monitoring, testing, and recordkeeping directly required by any EPA, ARB, AQMD rule or regulation, or AQMD permit.

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS

The tables below specify the periodic monitoring, testing and recordkeeping required by the SIP-approved and federally enforceable AQMD rules, as well as the gap-filling monitoring, testing and recordkeeping for these rules.

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 401 - Visible Emissions (Amended 4/7/89)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING, AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
All emissions sources subject to AQMD regulation	No more than 3 minutes of emissions from any 1 source in one hour as dark or darker than Ringelmann No. 1 or equivalent opacity.	None	Category I sources: None Category II sources: <ul style="list-style-type: none"> • Continuous Opacity Monitoring System (COMS), or • Visually inspect each Category II source for visual emissions when a public complaint is received and at least semiannually. If any visible emissions (not including condensed water vapor) are detected during the inspection, or at any other time, that last more than three minutes in one hour, the operator shall determine if the equipment is operating normally. If not, the operator shall eliminate the visible emissions within 24 hours or have the visible emissions quantified by a certified smoke reader within three business days.

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 401 - Visible Emissions (cont.)

Category I sources	Category II sources
<ul style="list-style-type: none"> • Combustion equipment, exclusively landfill, digester, refinery or natural gas-fired, which never encounter dirty, oily, or contaminated materials and which do not require PM or PM10 control : <ul style="list-style-type: none"> * Flares * Boilers * Gas turbine * Heaters * ICE (gaseous fuel) * Ovens * Furnaces • Non-fuming liquid storage, transfer and processing equipment • Degreasers and other solvent cleaning • Spray coating equipment inside a spray booth or an enclosure • Printing equipment, except ovens 	<ul style="list-style-type: none"> • Autoclave • Asphalt air blowing • Asphalt batch plants • Auto body shredding • Blending (uncontrolled) • Boilers, oil-fired • Carpet processing system, (dryers, carpet beaters, carpet shears) • Cement kilns • Charbroilers • Chip dryers • Deep-fat fryers • Die casting equipment • Drop forge • Dry material handling equipment, including bins, blenders, bucket elevators, conveyors, cutters, feeders, hoppers, crushers, cyclones, mixers, screens, separators, vibrating grizzlies, weigh stations, filling machines, packaging equipment, loading & unloading equipment • Dryers • Furnaces (which encounter dirty, oily or contaminated material) • Glass forming machines and glass melting furnaces • Gas turbines, oil-fired • Glass hot end coating • Incinerators • ICEs, fuel oil or gasoline fired • Kilns and Ovens • Petroleum refining equipment, other (including refinery flares) • Plasma arc cutting • Smokehouses • Sludge dryers • Solder leveling • Soldering machines • Open spray coating equipment • Storage tanks (solid material) • Tire buffers

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 404 - Particulate Matter - Concentration (Amended 2/7/86)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
<p>All sources subject to AQMD regulation except steam generators or gas turbines combusting liquid or gaseous fuels and sources in compliance with Rule 1112.1.</p>	<p>23 to 450 milligram PM per dry, standard cubic meter of gas</p> <p>(maximum allowable emission limit varies with the exhaust gas flow rate)</p>	<p>None</p>	<p><u>All sources</u> :</p> <p>Compliance with this rule is determined through the following:</p> <ul style="list-style-type: none"> • Engineering calculation by the use of appropriate emission factors, • Equipment limitation, • Process throughput limit and recordkeeping, • Requirement to vent the equipment to a control device meeting the monitoring requirements in Appendix A

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 405 - Solid Particulate Matter - Weight (Amended 2/7/86)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
All sources subject to AQMD regulation except sources in compliance with Rule 1112.1.	0.45 to 13.60 kilogram solid PM per hour (emission limit determined from process weight per hour).	None	Compliance with this rule is determined through the following: <ul style="list-style-type: none"> • Engineering calculation by the use of appropriate emission factors, • Equipment limitation, • Process throughput limit and recordkeeping, • Requirement to vent the equipment to a control system meeting the monitoring requirements in Appendix A

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 407 - Liquid and Gaseous Air Contaminants (Amended 4/2/82)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
All equipment except for internal combustion engines and emergency venting	$\leq 2,000$ ppmv CO, dry basis, averaged over 15 minutes duration	None	<ul style="list-style-type: none"> • None for equipment: <ul style="list-style-type: none"> * Where CO emissions are not expected; or * Subject to CO emission limits and requirements of source-specific rules in Regulation XI (e.g. Rule 1146, 1146.1) • Equipment ≥ 10 million btu/hr heat input rating: <ul style="list-style-type: none"> * CEMS for CO pursuant to 40 CFR Part 60 Appendix B & F; or * Performance test once every 5 years; or * Annual monitoring of exhaust stack for CO using an AQMD-approved portable analyzer; or * Parametric monitoring correlated with a performance test ⁽¹⁾ • Other equipment: AQMD-approved portable CO analyzer once every 5 years ⁽²⁾
All equipment except for internal combustion engines and emergency venting	≤ 500 ppmv SO ₂ , dry basis, averaged over 15 minutes duration	None	<ul style="list-style-type: none"> • None for equipment: <ul style="list-style-type: none"> * Where SO_x emissions are not expected; or * Subject to SO_x emission limits and requirements of source specific rules in Regulation XI; or * Burning fuels subject to fuel sulfur limits of Rules 431.1, 431.2 or 431.3 where no other sulfur containing material is introduced to the equipment or the process • Equipment with high potential SO_x emissions: ⁽³⁾ <ul style="list-style-type: none"> * CEMS for SO_x pursuant to 40 CFR Part 60 Appendix B & F; or * Performance test once every 5 years; or * Annual monitoring of exhaust stack for SO_x using an AQMD-approved portable analyzer; or * Parametric monitoring correlated with a performance test ⁽¹⁾ • Other equipment: AQMD-approved portable SO_x analyzer once every 5 years ⁽²⁾

⁽¹⁾ See General Provisions for more discussion

⁽²⁾ Non-AQMD-approved analyzers are acceptable if AQMD-approved analyzers are not commercially available

⁽³⁾ Source that has potential to emit, pre-control device SO_x emissions of equal to or more than 100 tpy

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 409 - Combustion Contaminants (Amended 8/7/81)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
All combustion sources subject to AQMD regulation except jet engine test stands and internal combustion engines.	0.23 gram PM per cubic meter of gas, calculated to 12 percent CO ₂ at standard conditions, 15 minute average.	None	<p>None for gaseous and liquid fueled equipment. Compliance with this Rule is determined by engineering calculations, the use of appropriate emission factors, and exhaust characteristics</p> <p>For solid fuel-fired equipment: Performance test once every 5 years or parametric monitoring correlated with a performance test^{(1) (2)}</p>

⁽¹⁾ Performance test is required if the potential to emit, pre-control device PM emissions for a source is equal to or greater than 70 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 431.1 - Sulfur Content of Gaseous Fuels (Amended 11/17/95)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Facilities selling natural gas	Sulfur \leq 16 ppmv, calculated as H ₂ S	None	Monthly test by AQMD Method 307-91 or equivalent;
Combustion equipment burning landfill gas	Sulfur \leq 40 ppmv, calculated as H ₂ S, averaged daily; or	Alternative Monitoring Plan in Attachment A, Section III, of Rule 431.1	None
	Sulfur \leq 40 ppmv, calculated as H ₂ S, averaged monthly and \leq 200 ppmv, calculated as H ₂ S, averaged over 15 minutes; or	Continuous fuel gas monitoring system (CFGMS) to measure sulfur content of fuel prior to burning or continuous emission monitoring system (CEMS) to measure SO _x emission after burning, which operates in compliance with the requirements in Attachment A of Rule 431.1 and 40 CFR 60 Appendix F	None
	Optional Facility Compliance Plan (OFCP)	Continuous emission monitoring system (CEMS) to determine total SO _x emissions. The system should comply with the requirements in Attachment A of Rule 431.1 and 40 CFR 60 Appendix F.	None
Combustion equipment burning sewage digester gas	Sulfur \leq 40 ppmv, calculated as H ₂ S, averaged daily; or	Alternative Monitoring Plan in Attachment A, Section III of Rule 431.1	None
	Sulfur \leq 40 ppmv, calculated as H ₂ S, averaged monthly and \leq 500 ppmv, averaged over 15 minutes; or	Continuous fuel gas monitoring system (CFGMS) to measure sulfur content of fuel prior to burning or continuous emission monitoring system (CEMS) to measure SO _x emission after burning, which operates in compliance with the requirements in Attachment A of Rule 431.1 and 40 CFR 60 Appendix F	None
	Optional Facility Compliance Plan (OFCP)	Continuous emission monitoring system (CEMS) to determine total SO _x emissions. The system should comply with the requirements in Attachment A of Rule 431.1 and 40 CFR 60 Appendix F.	None

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 431.1 - Sulfur Content of Gaseous Fuels (cont.)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Combustion equipment burning gaseous fuels other than natural gas, landfill gas or digester gas	Sulfur \leq 40 ppmv, calculated as H ₂ S, averaged over 4 hours; or	Continuous fuel gas monitoring system (CFGMS) to measure sulfur content of fuel prior to burning or continuous emission monitoring system (CEMS) to measure SO _x emission after burning, which operates in compliance with the requirements in Attachment A of Rule 431.1 and 40 CFR 60 Appendix F	None
	Optional Facility Compliance Plan (OFCP)	Continuous emission monitoring system (CEMS) to determine total SO _x emissions. The system should comply with the requirements in Attachment A of Rule 431.1 and 40 CFR 60 Appendix F.	None
Combustion equipment previously exempt from Rule 431.1 and in excess of Table 1 emission limits, or without the use of any sulfur removal or control system was previously in compliance with Table 1 emission limits	Compliance with applicable Table 1 limits within 18 months after time of exceedance	CFGMS or CEMS in compliance with the requirements in Attachment A of Rule 431.1 and 40 CFR 60 Appendix F; or	None
		Alternative Monitoring Plan in Attachment A, Section III of Rule 431.1	None
Combustion equipment which burns other than natural gas and is not located at electric utility generating facilities or refineries	Various sulfur limits	Submit annual reports of the monthly fuel consumption and the monthly average sulfur content of the fuel consumed	None
Combustion equipment located at electric utility generating facilities or refineries	Various sulfur limits	Submit monthly reports containing the data as specified in paragraph (e)(2) of Rule 431.1	None
Facilities that emit less than 5 lbs/day of total sulfur compound, calculated as H ₂ S from the burning of gaseous fuels other than natural gas.	Exemption	None	Case-by-case basis depending on permit conditions

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 431.2 - Sulfur Content of Liquid Fuels (Amended 5/4/90)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Any seller of liquid fuel	Sulfur content < 0.05% by weight	Provide specifications to buyer for the sulfur content of the fuel	Monthly testing of fuel sulfur content (ASTM Method D4294 or D2622-82, or any other equivalent approved method)
Any source burning or purchasing any liquid fuel	Sulfur content < 0.05% by weight	Submit an annual report (monthly report for utilities and refineries) to the AQMD containing monthly (daily) fuel consumption and the sulfur content of the fuel consumed	Maintain purchase records providing evidence of sulfur content of the fuels consumed.
Permitted internal combustion engines burning diesel fuel	Fuel meets ARB specifications for motor vehicle diesel fuel contained in CCR Title 13 Section 2256	None	Maintain purchase records demonstrating fuel meets ARB specifications

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 431.3 - Sulfur Content of Fossil Fuels (Adopted 5/7/76)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Combustion equipment using solid fossil fuels ⁽¹⁾	Sulfur \leq 0.56 lbs of sulfur dioxide (SO ₂) per MMBTU.	None	<ul style="list-style-type: none"> • Continuous in stack SO_x monitoring system meeting 40 CFR part 60, Appendix B & F requirements, if a control device is used; or • Maintain records of sulfur content specification of each fuel purchased; or • Test the sulfur content of the solid fuel monthly.

⁽¹⁾ All equipment using fossil fuel subject to this rule are currently operating in the AQMD RECLAIM program. In RECLAIM all major SO_x sources are required to have a continuous in stack SO_x monitoring system

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 442 - Usage of Solvents (Amended 3/5/82)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
<p>Equipment in which organic solvents or materials containing organic solvents are used except those specified under Rule 442(h)</p>	<p>Emission reduction by 85% or comply with one of the following emission limits:</p> <ul style="list-style-type: none"> • 1.4 kg/hr not to exceed 6.5 kg/day for materials that are baked, heat cured or heat polymerized • 3.6 kg/hr not to exceed 18 kg/day from the use of photochemically reactive solvents • 36.8 kg/hr not to exceed 272 kg/day from the use of non-photochemically reactive solvents 	<p>None</p>	<ul style="list-style-type: none"> • Maintain records to demonstrate compliance with permit conditions limiting the material usage that assure compliance with Rule 442; or • Maintain records of operation to demonstrate compliance with the emission limits. Records include but not limited to the following: <ul style="list-style-type: none"> • name of organic solvents and materials containing organic solvents, • designation of organic solvents and other materials used as photochemically reactive (PR) or non- photochemically reactive (NPR), • solvent content, • amount of organic solvents and other materials used, • total daily amount (kg/day or lb/day) and maximum hourly amount (kg/hr or lb/hr) of PR and NPR solvent used, • type of application, and • hours of application per day

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 442 - Usage of Solvents (cont.)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
Equipment or processes that are required to control emissions by subdivision (a) except those specified under Rule 442(h)	<ul style="list-style-type: none"> • Incineration with 90% efficiency, or • Achieve < 50 ppm after incineration, or • Carbon adsorption, or • Any method to achieve equivalent control efficiency 	None	<p><u>All</u> Control device monitoring per Appendix A</p> <p><u>For major source</u> ⁽¹⁾ Performance test once every 5 years unless performance is correlated with parametric monitoring ⁽²⁾</p>
All usage of photochemically reactive solvents except those specified under Rule 442(h)	<ul style="list-style-type: none"> • ≥ 90% reduction by weight for any solvent used in the commercial cleaning of garments and fabrics if the solvent contains 4% or more by volume of photochemically reactive compounds • ≥ 85% reduction by weight for any solvent used in industrial and commercial metal surface coatings, or surface cleaning or degreasing operations 	None	Same as above
All usage of photochemically reactive solvents except those specified under Rule 442(h)	No disposal of more than 5 liters (1.3 gal.) per day of any photochemically reactive solvents, or any material containing more than 5 liters (1.3 gal.) of photochemically reactive solvent	None	<ul style="list-style-type: none"> • Accept permit condition to not dispose of PR solvent in a manner that permits evaporation to atmosphere, or • Maintain records of disposal operation to demonstrate compliance
Equipment exempted by Rule 442(h)	Exemption	None	Maintain records to the extent necessary to document exemption.

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device VOC emissions greater than or equal to 10 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 461 - Gasoline Transfer and Dispensing (Amended 9/8/95)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Phase I - Gasoline Transfer Into Stationary Storage Tanks (≥ 251 gals) and Mobile Fuelers (≥ 120 gals)	<ul style="list-style-type: none"> • Tanks equipped w “CARB certified” submerged fill tube • Vapor recovery system (≥ 95% eff), • Vapor tight conditions ≤ 10,000 ppm as determined by EPA Method 21 • Other good operating standards 	Reporting of repairs using AQMD form	None
Phase II - Gasoline Transfer Into Vehicle Fuel Tanks (≥ 5 gals) or Mobile Fuelers (≥ 120 gals)	<ul style="list-style-type: none"> • Dispensing unit equipped with “CARB certified” vapor recovery system • Vapor-tight and liquid-tight conditions • Nozzle equipped with “CARB certified” insertion interlock mechanism, vapor check valve, or coaxial hose, and • Other good operating standards 	<ul style="list-style-type: none"> • Conduct a pressure test or air-to-liquid test once every 5 years or one year in accordance with CARB Testing Procedures <p><u>Retail Gasoline Dispensing Stations</u></p> <ul style="list-style-type: none"> • Daily maintenance inspections • Annual compliance inspections 	<p><u>For Retail Gasoline Dispensing Stations</u></p> <p>None</p> <p><u>For Non-Retail Gasoline Dispensing Stations</u></p> <ul style="list-style-type: none"> • Semi-annual maintenance inspections • Annual compliance inspections
Equipment exempted by Rule 461(e)	Exemption	None	Maintain records to the extent necessary to document exemption.

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 462 - Organic Liquid Loading (Amended 6/9/95)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Class A - loading ≥ 20,000 gals/day	<ul style="list-style-type: none"> • AQMD approved vapor recovery system and/or disposal system until 1/31/99; and CARB certified vapor recovery system and/or disposal system after 1/31/99 • 0.29 lbs VOC per 1000 gal transferred until 1/31/98; and ≤ 0.08 lbs VOC per 1000 gal transferred after 1/31/98 • Bottom loading for gasoline transfer • No overfills or leaks 	<ul style="list-style-type: none"> • Manually inspect for leaks (Liquid/Vapor) on a monthly basis and maintain records of inspections, or Use an Organic Vapor Analyzer (OVA) for Liquid/Vapor leaks on a quarterly basis • Daily throughput recordkeeping • Continuous monitoring system meeting 40 CFR Part 60, Appendix B 	Develop and conduct Quality Assurance/Quality Control (QA/QC) procedures for continuous monitoring system
Class B - loading < 20,000 gals/day	<ul style="list-style-type: none"> • AQMD approved vapor recovery system until 1/31/99; and CARB certified vapor recovery system after 1/31/99 • 90% efficiency for vapor recovery • Bottom loading for gasoline transfer • No overfills or leaks 	<ul style="list-style-type: none"> • Manually inspect for leaks (Liquid/Vapor) on a monthly basis and maintain records of inspections, or Use an Organic Vapor Analyzer (OVA) for Liquid/Vapor leaks on a quarterly basis • Maintain daily throughput records 	None
Class C - loading < 4,000 gals/day and < 500,000 gals/yr	<ul style="list-style-type: none"> • Bottom loading or submerged loading • No overfills or leaks 	<ul style="list-style-type: none"> • Manually inspect for leaks (Liquid/Vapor) on a monthly basis and maintain records of inspections, or • Use an Organic Vapor Analyzer (OVA) for Liquid/Vapor leaks on a quarterly basis 	None

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 463 - Storage of Organic Liquids (Amended 3/11/94)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Tanks \geq 39,630 gals w organic liquid having TVP \geq 0.5 psi,	<ul style="list-style-type: none"> • Pressurized tank; or • External floating roof tank w approved seals; or • Fixed roof tank with internal floating cover and approved seals 	<ul style="list-style-type: none"> • Self inspection twice per year (AQMD certified inspectors) and maintenance program for floating roof . • In addition, seals shall be inspected each time tank is emptied and degassed 	None
Tanks \geq 19, 815 gals w organic liquid having TVP \geq 1.5 psi, and Gasoline tanks 251-19,815 gals	Fixed roof tank w vapor recovery system at \geq 95% efficiency operating at vapor tight conditions	None	<ul style="list-style-type: none"> • <u>For tanks vented to fuel gas system:</u> Monitor leaks according to Rule 1173 • <u>For tanks vented to other types of VRS:</u> <u>All</u> <ul style="list-style-type: none"> * Monitor leaks of VRS according to Rule 1173, and * Control device monitoring per Appendix A • <u>Major source</u> ⁽¹⁾ <ul style="list-style-type: none"> * Performance test once every 5 years or parametric monitoring correlated with a performance test ⁽²⁾
Gasoline tanks 251-19,815 gals	Pressure-vacuum valve set to 10% of maximum working pressure	None	None
Floating roof tanks	<ul style="list-style-type: none"> • 70 ppmw of H₂S in crude oil • 11 psia true vapor pressure limit • Roof to float except during repairs or cleaning • Refloating with water or vented to vapor recovery or equivalent 	Self inspection and maintenance program twice per year	None
Tanks exempted by Rule 463(f)	Exemption	None	Maintain records to the extent necessary to document exemption.

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device VOC emissions greater than or equal to 10 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 464 - Wastewater Separators (Amended 12/7/90)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Wastewater Separators ⁽¹⁾	<ul style="list-style-type: none"> • Solid cover with all openings sealed; or • Floating pontoon or double-deck type cover, equipped with closure seals with gaps not exceeding 1/8 inch for an accumulative length of 97 percent of the perimeter of the compartment and 1/2 inch for any single gap. 	None	<ul style="list-style-type: none"> • None for solid cover • Semi-annual measurement of gaps between the compartment walls and the seals using 1/8" and 1/2" tank probes
	A cover or lid for any gauging and sampling device in the compartment cover. The cover should remain closed at all times with no visible gaps except when the device is in use	None	Visual inspection semiannually
	Skimmed oil or removed tar should be either charged to process units, or transferred to a container approved by AQMD.	None	None
	Forebays must be covered	None	Visual inspection semiannually
Wastewater Separators exempted by Rule 464(c)	Exemption	None	Maintain records to the extent necessary to document exemption

⁽¹⁾ Equipment may be subject to Rule 1176 which has more stringent monitoring requirements

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 465 - Vacuum-Producing Devices or Systems (Amended 11/1/91)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Vacuum producing devices or systems including hot wells and accumulators	<ul style="list-style-type: none"> • Equip with covers • Control exhaust gases to reduce mass emissions of VOC to $\geq 90\%$ • Collect and treat exhaust gases to below 800ppm expressed as H₂S 	None	No additional monitoring is required. All the gases from the vacuum producing devices are eventually vented through the refinery vapor recovery system. The gases from the vapor recovery system are vented through the fuel gas treating unit and then used as a fuel.

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 466 - Pumps and Compressors (Amended 10/7/83)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Pumps and compressors	Adequate seals, or equivalent, maintained so that there are no: <ul style="list-style-type: none"> • Gaseous leak: $\geq 10,000$ ppm, measured as hexane • Liquid leak: ≥ 3 drops per minute • Visible mist 	<ul style="list-style-type: none"> • Conduct a visual inspection either once every 8-hr period, once a day or once a week depending on type & location of equipment. In addition conduct a quarterly inspection with an Organic Vapor Analyzer as specified under 466(f) • Facilities are also subject to Rule 1173 which has more stringent requirements than this rule. 	None

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 466.1 - Valves and Flanges (Amended 3/16/84)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
Valves, flanges at refineries, chemical plants, and oil production fields	<ul style="list-style-type: none"> • No leaks: Gaseous leak: $\geq 10,000$ ppm, measured as hexane Liquid leak: ≥ 3 drops per minute or visible liquid mist • Seal valves located at the end of pipe line with blind flange, plug or cap. 	<ul style="list-style-type: none"> • Effective from February 1, 1991, refer to Rule 1173 • Annual inspection valves for gaseous leak, annual inspection flanges for all leaks, or continuous monitoring for flammable gas • Reinspect within 90 days after repair 	Refer to Rule 1173
Valves, flanges in other reactive organic compound service	<ul style="list-style-type: none"> • No leaks: Liquid leak: ≥ 3 drops per minute or visible liquid mist • Seal valves located at the end of pipe line with blind flange, plug or cap. 	Annual inspection flanges, and reinspect within 90 days after repair	Annual inspection for valves

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 467 - Pressure Relief Devices (Amended 3/5/82)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
Pressure relief devices (PRD) at refineries or chemical plants.	<ul style="list-style-type: none"> • Vented to a vapor recovery or disposal system or • No leaks: Gaseous leak: $\geq 10,000$ ppm, measured as hexane Liquid leak: ≥ 3 drops per minute or visible liquid mist 	<ul style="list-style-type: none"> • Effective from February 1, 1991, refer to Rule 1173. • Visual inspection daily and with portable OVA quarterly, within 15 days after a relief or after a repair for PRD. 	Refer to Rule 1173

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 468 - Sulfur Recovery Units (Amended 10/8/76)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Sulfur Recovery Units ⁽¹⁾	<ul style="list-style-type: none"> • 500 ppm of sulfur compounds expressed as SO₂; • 10 ppm of H₂S; and • 198.5 lbs/hr of sulfur compounds expressed as SO₂ 	None	<p><u>Total sulfur compounds :</u></p> <ul style="list-style-type: none"> • CEMS installed and operated per 40 CFR 60 Appendix B & F to measure total sulfur compounds expressed as SO₂ ; ⁽²⁾ or • -- Control device monitoring per Appendix A, and -- Performance test ⁽²⁾ once every 5 years in accordance with AQMD Method 6.1, 100.1, 307-91, or equivalent, or parametric monitoring ⁽³⁾ correlated with a performance test <p><u>H₂S</u></p> <ul style="list-style-type: none"> • CEMS installed and operated per 40 CFR 60 Appendix B & F to measure H₂S ⁽⁴⁾ ; or • -- Control device monitoring per Appendix A, and -- Measure H₂S daily with AQMD-approved portable analyzer (or detection tube if AQMD-approved portable analyzer is not commercially available), and -- Performance test ⁽²⁾ once every 5 years in accordance with AQMD Method 307-91, or parametric monitoring ⁽³⁾ correlated with a performance test

⁽¹⁾ All SRUs are currently operating in the AQMD RECLAIM program. RECLAIM has sufficient monitoring requirements which meet the recommended gap filling requirements for SO_x. SRUs in RECLAIM are still subject to the H₂S limit of Rule 468.

⁽²⁾ CEMS and performance test is not required for a source that has potential to emit, pre-control device SO_x emissions greater than or equal to 100 tpy

⁽³⁾ See General Provisions for more discussion

⁽⁴⁾ CEMS is required if sulfur recovery unit is subject to 40 CFR 60 Subpart J

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 469 - Sulfuric Acid Units (Amended 2/13/81)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Sulfuric Acid Units ⁽¹⁾	500 ppm for sulfur compounds expressed as SO ₂ on a dry basis over 15 consecutive minutes, and 90 kg/hr (198.5 lb/hr) of sulfur compounds expressed as SO ₂ 0.15 kg of sulfuric acid mist per metric ton of acid produced (0.3 lb/ton)	None EPA Test Method 8 to measure sulfuric acid mist as H ₂ SO ₄ at the time of permit evaluation	Continuous in stack SO _x monitoring system meeting 40 CFR Part 60 Appendix B & F requirements

⁽¹⁾ All sulfuric acid units subject to this Rule are currently operating in the AQMD RECLAIM program. RECLAIM has sufficient monitoring requirements for sulfuric acid units which meets the recommended gap filling requirements

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 470 - Asphalt Air Blowing (Adopted 5/7/76)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Asphalt Air Blowing Equipment	<ul style="list-style-type: none"> • Incinerate the effluents at 1400°F or higher for 0.3 seconds or longer; or • An equivalent control device approved by the AQMD 	None	Control device monitoring per Appendix A.

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 472 - Reduction of Animal Matter (Adopted 5/7/76)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Equipment used for animal rendering	<ul style="list-style-type: none"> • Incinerate the effluents at 650°C (1202°F) or higher for 0.3 seconds or longer; or • An equivalent control device approved by the AQMD 	Installation of devices to monitor combustion temperature, pressure and other operating parameters	Control device monitoring per Appendix A

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 474 - Fuel Burning Equipment - Oxides of Nitrogen (Amended 12/4/81)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Gaseous fuel burning equipment, gross heat input \geq 555 mmbtu/hr ⁽¹⁾	125-300 ppm, 3% O ₂ on a dry basis averaged over 15 minutes	None	Continuous in-stack NO _x and O ₂ monitoring system meeting 40 CFR Part 60, Appendix B & F requirements
Liquid or solid fuel burning equipment, gross heat input \geq 555 mmbtu/hr ⁽¹⁾	225-400 ppm, 3% O ₂ on a dry basis averaged over 15 minutes	None	Continuous in-stack NO _x and O ₂ monitoring system meeting 40 CFR Part 60, Appendix B & F requirements
Steam generating equipment burning gaseous fuel, gross heat input \geq 555 mmbtu/hr ⁽¹⁾	125-400 ppm, 3% O ₂ on a dry basis averaged over 15 minutes	None	Continuous in-stack NO _x and O ₂ monitoring system meeting 40 CFR Part 60, Appendix B & F requirements

⁽¹⁾ All fuel burning equipment subject to this rule are currently operating either in the AQMD RECLAIM program or operating in compliance with Rule 1135. Under RECLAIM and Rule 1135, all equipment are required to have a continuous in stack NO_x and O₂ monitoring system

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 475 - Electric Power Generating Equipment (Amended 8/7/78)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Electric power Generating equipment > 10 net MW with P/C issued after 5/7/76	Combustion contaminants \leq 11 lb/hr or \leq 0.01 gr/scf	None	<p><u>For natural gas fired equipment</u> None</p> <p><u>For all other fuels</u> ⁽¹⁾</p> <ul style="list-style-type: none"> • Performance test once every 5 years of exhaust stack for PM conducted in accordance with AQMD test methods 5.1, 5.2 or 5.3; or • Parametric monitoring correlated to performance test ⁽²⁾
Electric power Generating gas turbines > 5 net MW installed after 1/1/70	Combustion contaminants \leq 11 lb/hr or \leq 0.01 gr/scf	None	<p><u>For natural gas fired equipment</u> None</p> <p><u>For all other fuels</u> ⁽¹⁾</p> <ul style="list-style-type: none"> • Performance test once every 5 years of exhaust stack for PM conducted in accordance with AQMD test methods 5.1, 5.2 or 5.3; or • Parametric monitoring correlated to performance test ⁽²⁾

⁽¹⁾ Performance test is required if the potential to emit, pre-control device PM emissions for a source are equal to or more than 70 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 476 - Steam Generating Equipment (Amended 10/8/76)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Steam Generating equipment > 50 mmbtu/hr with P/C issued after 5/7/76	gaseous fuel firing: 125 ppm NO _x liquid or solid fuel firing: 225 ppm NO _x (15 minute average, corrected to 3% oxygen)	None	See more-stringent Rule 1146.
	Combustion contaminants ≤11 lb/hr or ≤ 0.01gr/SCF, 15 minute average	None	<p><u>For natural gas fired equipment</u> None</p> <p><u>For all other fuels</u> ⁽¹⁾</p> <ul style="list-style-type: none"> • Performance test once every 5 years of exhaust stack for PM conducted in accordance with AQMD test methods 5.1, 5.2 or 5.3; or • Parametric monitoring correlated to performance test ⁽²⁾

⁽¹⁾ Performance test is required if the potential to emit, pre-control device PM emissions for a source are equal to or more than 70 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 480 - Natural Gas Fired Control Devices (Adopted 10/7/77)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING EQUIPMENT AND/OR METHODS
Air Pollution Control System	Facility installing or using an air pollution control system is required to: <ul style="list-style-type: none"> • have an approved fuel system to be used during a natural gas shortage or curtailment, or • submit a plan detailing the shutdown of equipment generating emissions during a natural gas shortage or curtailment, until approved fuel system is restored. 	None	Accept permit conditions reflecting the rule requirements.

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 481 - Spray Coating Operations (Amended 5/5/78)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING, TESTING AND/OR RECORDKEEPING
All Spray Painting or Coating Operations except those exempted by Rule 481(b)	<ul style="list-style-type: none"> • Operate the spray coating equipment inside a control enclosure with exhaust vented to : <ul style="list-style-type: none"> * filters at a design face velocity not less than 100 feet per minute nor greater than 300 feet per minute, or * a water wash system designed to be equally effective or • use electrostatic and/or airless spray equipment 	None	None. Requirements can be demonstrated via manufacturer's design specifications at the time of permit issuance
All spray painting or spray coating operations exempted by Rule 481(b)	Exemption	None	Maintain records to the extent necessary to document exemption from Rule 481

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1101 - Secondary Lead Smelters/Sulfur Oxides (Adopted 10/7/77)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Secondary lead smelters for lead recovery: dryers, furnaces ⁽¹⁾	200 ppm sulfur oxides expressed as SO ₂ , calculated on a dry basis averaged over at least 15 minutes; and 2.1 kg of sulfur oxides per metric ton of process weight (4.2 lbs of sulfur oxides per short ton of process weight) expressed as SO ₂	None	<ul style="list-style-type: none"> • Continuous in stack SO_x monitoring system meeting 40 CFR part 60 Appendix B & F requirements, or Continuous process monitoring system (CPMS) measuring exhaust gas flow rate and other related operating parameters • Maintain record of process weight

⁽¹⁾ All secondary lead smelters subject to this rule are currently operating in the AQMD RECLAIM program. In RECLAIM all major SO_x sources are required to have a continuous in stack SO_x monitoring system or a CPMS

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1103 - Pharmaceuticals and Cosmetics Manufacturing Operations (Amended 12/7/90)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING EQUIPMENT AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
Reactors, distillation columns, crystallizers, or centrifuges	Not allowed to emit >15 lbs/day of VOC unless vented to a surface condenser or an equivalent control device	Condenser gas temperature limit as specified in (c)(1)(A)	<u>All</u> Control device monitoring per Appendix A <u>For major source</u> ⁽¹⁾ Performance test once every 5 years or parametric monitoring correlated with a performance test ⁽²⁾
Centrifuges, rotary vacuum filters, or other filters with an exposed liquid surface where liquid contains VOC with v.p. of 0.5 psi or more at 20°C	Hood or enclosure, vented to a carbon adsorber or an equivalent control device	None	Same as above
Process tanks	A cover or an apparatus which prevents VOC evaporation.	None	None
Air dryers or production equipment exhaust systems emitting 330 lbs/day or more of VOC or Air dryers or production equipment exhaust systems emitting <330 lbs of VOC	Reduction of VOC emissions by 90% or more by weight VOC emissions less than 33 lbs/day	The following testing methods are specified in the rule for control efficiency, but the rule does not ask for any periodic monitoring requirements using the methods: EPA TM 25 or AQMD TM 25.1	<u>All</u> Control device monitoring per Appendix A <u>For major source</u> ⁽¹⁾ Performance test once every 5 years or parametric monitoring correlated with a performance test ⁽²⁾

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device VOC emissions greater than or equal to 10 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1103 - Pharmaceuticals and Cosmetics Manufacturing Operations (Amended 12/7/90)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING EQUIPMENT AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
Storage tanks >2000 gallon capacity	Reduction of VOC emissions by 90% by wt. during transfer when receiving VOC containing material with a vapor pressure >4.1 psi at 20°C	Same as above	<p><u>For tank with vapor balance systems:</u> Perform visual and tactile inspection during each transfer for proper connections and presence of leaks</p> <p><u>For tank with other types of control system:</u></p> <ul style="list-style-type: none"> • <u>All:</u> Control device monitoring per Appendix A • <u>Major source:</u> ⁽¹⁾ Performance test once every 5 years or parametric monitoring correlated with a performance test ⁽²⁾
Storage tanks storing VOC with a v.p. greater than 1.5 psia at 20°C	Install pressure/vacuum vents set at +0.03 psi, or install a control system approved by the AQMD	None	Visual inspection of pressure setting of pressure relief valve every six months
Any equipment used in pharmaceutical or cosmetic manufacturing operations	Repair any leak containing VOC which can be observed to be running or dripping.	None	Monthly visual inspection for leaks and maintain a log on inspection findings and any subsequent repairs
Any pharmaceutical or cosmetic manufacturing plant	Maintain a daily record of the type and volume of VOC-containing materials used in manufacturing and cleanup	None	Maintain records of VOC emissions in pounds

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device VOC emissions greater than or equal to 10 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Coating Rules, Graphic Arts and Screen Printing Operations

Rule 1104 - Wood Flat Stock Coating Operations (Amended 8/2/91)

Rule 1106 - Marine Coating Operations (Amended 1/13/95)

Rule 1106.1 - Pleasure Craft Coating Operations (Amended 6/13/97)

Rule 1107 - Coating of Metal Parts and Products (Amended 3/8/96)

Rule 1113 - Architectural Coatings (Amended 11/8/96)

Rule 1115 - Motor Vehicle Assembly Line Coating Operations (Amended 5/12/95)

Rule 1124 - Aerospace Assembly and Component Manufacturing Operations (Amended 12/13/96)

Rule 1125 - Metal Container, Closure, and Coil Coating Operations (Amended 1/13/95)

Rule 1126 - Magnet Wire Coating Operations (Amended 1/13/95)

Rule 1128 - Paper, Fabric and Film Coating Operations (Amended 3/8/96)

Rule 1130 - Graphic Arts (Amended 3/8/96)

Rule 1130.1 - Screen Printing Operations (Amended 12/13/96)

Rule 1136 - Wood Products Coatings (Amended 6/14/96)

Rule 1145 - Plastic, Rubber and Glass Coatings (Amended 2/14/97)

Rule 1151 - Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations (Amended 6/13/97)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
Equipment category is specified under each specific rule	Coating-specific emission limits (grams VOC per liter of coating, less water and exempt compounds) are specified under each specific rule	<ol style="list-style-type: none"> 1. Daily recordkeeping is required according to Rule 109. Records must include all parameters specified under Rule 109(c)(1). Rule 109 allows the use of manufacturer product specifications or testing using appropriate AQMD, ARB, USEPA test methods. 2. The approved test methods are specified under each specific rule. 	None
	Requirements for proper operating equipment and methods are specified under each specific rule	<ol style="list-style-type: none"> 1. Daily recordkeeping is required according to Rule 109. Records must include all parameters specified under Rule 109 (c)(1). 	None

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Coating Rules, Graphic Arts and Screen Printing Operations (cont.)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
		2. If alternative application methods are used, the transfer efficiency must be determined by appropriate testing methods which include, but not limited to, the following: <ul style="list-style-type: none"> • AQMD's "Spray Equipment Transfer Efficiency Test Procedure For Equipment User, May 24, 1989 • EPA Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations, dated December 1988. 	None
	Requirements for Solvent Cleaning Operations; Storage and Disposal of VOC - Must meet the requirements of AQMD Rule 1171 - Solvent Cleaning Operations.	Refer to AQMD Rule 1171	Refer to AQMD Rule 1171
Architectural Coating Use (Rule 1113)	Coating-specific emission limits (grams VOC per liter of coating, less water and exempt compounds) are specified under Rule 113(c)(1), (c)(2), (c)(3), (c)(4), (c)(6)	None	<ul style="list-style-type: none"> • For architectural applications where no thinners, reducers, or other VOC containing materials are added, maintain semi-annual records for all coating consisting of: <ol style="list-style-type: none"> 1. Coating type; 2. VOC content as supplied in grams per liter (g/l) of materials for low-solids coatings; and 3. VOC content as supplied in g/l of coating, less water and exempt solvent, for other coatings

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Coating Rules, Graphic Arts and Screen Printing Operations (cont.)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
			<ul style="list-style-type: none"> • For architectural applications where thinners, reducers, or other VOC containing materials are added, maintain daily records for each coating consisting of: <ol style="list-style-type: none"> 1. Coating type; 2. VOC content as applied in grams per liter (g/l) of materials used for low-solids coatings; and 3. VOC content as applied in g/l of coating, less water and exempt solvent, for other coatings
Architectural Coating Manufacturing (Rule 1113)	Material labeling by manufacturers	None	Maintain record of each label manufactured
Air Pollution Control Equipment	Air pollution control system may be used to meet the requirements of the rules if the VOC emissions are reduced to levels achieved with the use of compliant coatings or the control systems operates at a efficiency specified in the rules.	Continuous monitor and performance testing to demonstrate compliance is required under Rule 1136(g). For coating rules do not require performance testing or continuous monitoring. However, the rules specify approved applicable testing methods for control efficiency	<u>All</u> Control device monitoring per Appendix A <u>For major source</u> ⁽¹⁾ Performance test once every 5 years or parametric monitoring correlated with a performance test ⁽²⁾
Any coatings that are exempt from Reg. XI coating rules	Must comply with requirements under Rule 442	Refer to Rule 442	Refer to Rule 442

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device VOC emissions greater than or equal to 10 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1105 - Fluid Catalytic Cracking Units - Oxides of Sulfur (Amended 9/1/84)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
FCCU ⁽¹⁾	60 kg (132 lb) per 1000 barrels of feed, calculated as SO ₂	None	Continuous emission monitoring system (CEMS) for SO _x meeting 40 CFR Part 60 Appendix B & F requirements

⁽¹⁾ All fluid catalytic cracking units subject to this rule are currently operating in the AQMD RECLAIM program. In RECLAIM all major SO_x sources are required to have a continuous in stack SO_x monitoring system

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1112 - Emissions of Oxides of Nitrogen from Cement Kilns (Amended 6/6/86)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Cement Kilns ⁽¹⁾	11.6 lb/ton of clinker produced when averaged over any 24 consecutive hour period and 6.4 lb/ton of clinker produced when averaged over any 30 consecutive day period	Continuous in-stack monitor for NO _x emission in lb per ton of clinker produced	None

⁽¹⁾ All gray cement kilns subject to this rule are currently operating in the AQMD RECLAIM program. In RECLAIM all major NO_x sources are required to have a continuous in stack NO_x and O₂ monitoring system. The requirements of Rule 1112 have been subsumed by RECLAIM.

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1117 - Emissions of Oxides of Nitrogen from Glass Melting Furnaces (Amended 1/6/84)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Glass Melting Furnaces ⁽¹⁾	4.0 lb/NO _x per ton of glass pulled	None	<ul style="list-style-type: none"> • Continuous in-stack NO_x and O₂ monitoring system meeting 40 CFR Part 60, Appendix B & F requirements, or Totalizing fuel meter and NO_x performance test every 3 years and • Recordkeeping of production rate and other applicable parameters

⁽¹⁾ All glass melting furnaces subject to this rule are currently operating in the AQMD RECLAIM program. In RECLAIM all major NO_x sources are required to have a continuous in stack NO_x and O₂ monitoring system. All large NO_x sources are required to have a totalizing fuel meter and required to conduct a performance test once every three years. The requirements of Rule 1117 have been subsumed by RECLAIM.

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1119 - Petroleum Coke Calcining Operations - Oxides of Sulfur (Adopted 3/2/79)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Petroleum Coke Calcining Operations ⁽¹⁾	Reduction of SO _x emissions expressed as SO ₂ by at least 80%	None	Continuous emission monitoring system (CEMS) for SO _x meeting 40 CFR Part 60 Appendix B & F requirements

⁽¹⁾ All facilities with petroleum coke calcining operations are currently operating as a major source in the AQMD RECLAIM program. In RECLAIM, all major SO_x sources are required to have a continuous SO_x monitoring system and the requirements of Rule 1119 have been subsumed by RECLAIM.

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1122 - Solvent Degreasers (Amended 7/11/97)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
<p>Batch-loaded cold cleaners, open-top vapor degreasers, all types of conveyORIZED degreasers, and air-tight and airless cleaning systems that carry out solvent degreasing operations with a solvent containing Volatile Organic Compounds (VOCs) except those specified under Rule 1122(k)</p> <p>Note: See exemption below for degreasers subject to NESHAP (40CFR63, Subpart T) requirements</p>	<p>Equipment design and work practice requirements for each specific type of degreaser, and air-tight or airless cleaning system to minimize the emissions to the atmosphere.</p>	<p>Recordkeeping of solvent used.</p>	<p><u>For batch-loaded cold cleaners and airtight or airless cleaning:</u> None</p> <p><u>For open-top vapor degreasers:</u> Prior to January 1, 1999: On a monthly basis, <ul style="list-style-type: none"> • measuring refrigerant temperature at the degreaser outlet to assure compliance with Rule 1122(e)(4), and • inspecting cover to assure compliance with Rule 1122(c)(2)(A) On and after January 1, 1999: On a monthly basis, <ul style="list-style-type: none"> • measuring temperature at the center of the air blanket if freeboard refrigeration device is used; or measuring temperature at the center of the superheated solvent vapor zone if superheated vapor system is used to assure compliance with Rule 1122(e)(6); and • inspecting cover to assure compliance with Rule 1122(c)(2)(A) </p> <p><u>For conveyORIZED degreasers:</u> Prior to January 1, 1999: On a monthly basis, <ul style="list-style-type: none"> • measuring refrigerant temperature at the degreaser outlet to assure compliance with Rule 1122(f)(4), and • inspecting cover to assure compliance with Rule 1122(c)(2)(A) On and after January 1, 1999: On a monthly basis, <ul style="list-style-type: none"> • measuring temperature at the center of the air blanket; and measuring temperature at the center of the superheated solvent vapor zone to assure compliance with Rule 1122(f)(5), and • inspecting cover to assure compliance with Rule 1122(c)(2)(A) </p>
<p>Degreasers exempted by Rule 1122(k)</p>	<p>Exemption</p>	<p>Recordkeeping of solvent used.</p>	<p><u>For degreasers subject to the NESHAP:</u> None. Solvent degreasers must comply with NESHAP (40CFR63, Subpart T)</p> <p><u>For other degreasers:</u> Maintain records pursuant to Rule 109 to the extent necessary to document exemption from Rule 1122</p>

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1123 - Refinery Process Turnarounds (Amended 12/7/90)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Any container in which materials are processed or treated	<ul style="list-style-type: none"> • Collect the vapors released for use as fuel or sent to a gas disposal system. • Depressurize only when the pressure in the vessel is below 5 psig, or is $\pm 10\%$ above the minimum gauge pressure at which the vapors can be collected, whichever is lower. 	<ul style="list-style-type: none"> • Use of pressure monitoring device and maintenance of records at any process turnaround. • “Approximate” VOC concentration before discharge and maintain records at any process turnaround. • “Approximate” VOC emissions at any process turnaround and maintain records at any process turnaround. 	None

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1134 - Emissions of Oxides of Nitrogen from Stationary Gas Turbines (Amended 8/8/97)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Gas turbine, ≥ 0.3 MW	Calculated based on NO _x reference limit of 9-25 ppmv, 15% O ₂ on a dry basis averaged over 15 minutes	<p><u>For cogeneration & combined cycle units ≥ 2.9 MW</u> Continuous in-stack NO_x and O₂ monitoring system meeting 40 CFR Part 60, Appendix B, Rule 218 for 2 and 24-hour calibration spec., 40 CFR Part 60, Appendix F, and 40 CFR Part 60.7(c), 60.7(d), and 60.13</p> <p>NO_x and O₂ emissions, flowrate of liquids or gases, ratio of water or steam to fuel added to combustion chamber or exhaust for NO_x reduction, elapsed time of operation</p> <p>Daily Start-up and stop time, total hours of operation, type and quantity of fuel used, cumulative hours of operation to date for the calendar year</p> <p><u>All units</u> Units emitting ≥ 25 tons NO_x per calendar year: tested at least once every 12 months in accordance with AQMD Test Method 3.1, 7.1, 10.1, and 100.1 and EPA Test Method 10 or any equivalent, approved method</p> <p>Others: tested within 90 days after every 8,400 hours of operation</p> <p><u>Emission Control Systems</u> Records of operation and maintenance which will demonstrate continuous operation and compliance of the emission control device.</p>	None

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1140 - Abrasive Blasting (Amended 8/2/85)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
All abrasive blasting operations	<p>No more than 3 minutes of emissions in one hour as dark or darker than Ringelmann No. 2 or equivalent opacity, or</p> <p>If not complying with specified performance standards: No more than 3 minutes of emissions in one hour as dark or darker than Ringelmann No. 1 or equivalent opacity</p>	None	Visually inspect during operation according to Rule 1140(e). If any visible emissions (not including condensed water vapor) are detected during the inspection, or at any other time, that last more than three minutes in one hour, the operator shall determine if the equipment is operating normally. If not, the operator shall eliminate the visible emissions within 24 hours or have the visible emissions quantified by a certified smoke reader within three business days
Dry open blasting	<ol style="list-style-type: none"> 1. Use ARB-certified abrasives 2. Reused abrasives shall not contain more than 1% by weight material passing No.70 standard sieve 3. No blasting of: <ul style="list-style-type: none"> • 1000 square feet or more of pavement markings • Items < 8 ft.H. & 8 ft. W. & 10 ft. L., unless item is located at permanent or ordinary location, or steel or iron shot/grit is used • Stucco or concrete, except as described under Rule 1140(b)(7) 	None	<ol style="list-style-type: none"> 1. Maintain purchase records of abrasive used , or maintain daily records of abrasive used and evidence of ARB certification 2. Maintain records to demonstrate that reused abrasives are tested with CARB Method 371-A, or accept permit conditions for not using re-used abrasives 3. Maintain daily records of the description of items blasted to demonstrate compliance

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1141 - Control of Volatile Organic Compound Emissions from Resin Manufacturing (Amended 4/3/92)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
Resin Manufacturing Process	<ul style="list-style-type: none"> • Reduction of VOC emissions to 0.5 lb per 1000 lb of completed resin produced, or by 95% or more • Reduction of VOC emissions to 0.12 lb per 1000 lb of completed resin produced for continuous polystyrene process • 98% or more reduction of VOC emissions for liquid-phase polystyrene process and liquid-phase high-density polystyrene slurry process 	<p><u>Recordkeeping</u> Maintain daily records of the amount and type of each resin produced, and daily VOC emissions</p> <p>The following testing methods are specified in the rule, but the rule does not ask for any periodic monitoring requirements using the methods:</p> <p><u>Collection Efficiency:</u> EPA Method in 55 FR 26865, June 29, 1990.</p> <p><u>Control Efficiency:</u> EPA Test Methods 25, 25A or AQMD Test Method 25.1 for VOCs; or EPA Test Method 18 or ARB Test Method 422 for exempt compounds</p>	<p><u>All</u> Control device monitoring per Appendix A</p> <p><u>For major source</u> ⁽¹⁾ Performance test once every 5 years or parametric monitoring correlated with a performance test ⁽²⁾</p>

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device VOC emissions greater than or equal to 10 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1141.1 - Coatings and Ink Manufacturing (Amended 3/6/92)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Manufacturing equipment of coatings and/or inks	<ul style="list-style-type: none"> • Maintain a cover on mixing vats with lids that extend at least ½ inch beyond the outer rim, maintain contact with the rim for at least 90% of the circumference, and may have slit to allow for insertion of a mixer shaft • Enclosed screens for grinding mills installed after 1/1/1985. 	None	Semiannually inspection that movable covers are closed
	<ul style="list-style-type: none"> • Use approved cleaning method to clean mixing vats, high-speed dispersion mills, grinding mills and roller mills. 	None	Maintain cleaning log that includes statement of approved cleaning methods

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1141.2 - Surfactant Manufacturing (Adopted 7/6/84)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Surfactant manufacturing equipment	Reduction of ROG emissions to 0.5 lb/1000 lb of surfactant produced, or by 95% or more by weight	Compliance Plan	<u>All</u> Control device monitoring per Appendix A For major source ⁽¹⁾ Performance test once every 5 years or parametric monitoring correlated with a performance test ⁽²⁾
Surfactant manufacturing equipment	Maintain all ports used for inspection, taking samples, or adding ingredients closed when not in use.	None	Semiannual visual inspection

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device VOC emissions greater than or equal to 10 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1142 - Marine Tank Vessel Operations (Adopted 7/19/91)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
All loading, lightering, ballasting, and housekeeping events where a marine tank vessel is filled with an organic liquid; or where a liquid is placed into a marine tank vessel's cargo tanks which had previously held organic liquid	<ul style="list-style-type: none"> 2 lbs VOC per 1,000 barrels of liquid loaded, or Control VOC by $\geq 95\%$ by weight 	<ul style="list-style-type: none"> Recordkeeping (such as type and amount of liquid cargo loaded, prior cargo carried by the receiving marine tank vessel....) is required. Testing methods for control efficiency are specified in the rule, but the rule does not ask for any periodic monitoring requirements using the methods: EPA Method 25, ARB Method 2-4, AQMD Method 25.1 or equivalent 	<ul style="list-style-type: none"> <u>If control device is used:</u> <u>All</u> Control device monitoring as described in: <ul style="list-style-type: none"> * NESHAP, 40CFR63 Subpart Y, 63.564(e), (f), (g), (h), (i), or (j), or * Appendix A <u>For Major source</u> ⁽¹⁾ Performance test once every 5 years or parametric monitoring correlated with a performance test ⁽²⁾ <u>If control device is not used:</u> None
	<ul style="list-style-type: none"> No leaks associated with any loading, lightering, ballasting, and housekeeping events Liquid leaks: three drops per minute, gaseous leaks: 1,000 ppm, expressed as methane, above background Any liquid or gaseous leak shall be tagged and repaired within 4 hrs of detection 	None Test methods are specified in the rule for leaks, but no periodic monitoring for leaks using these methods: EPA Method 21, or SCAQMD procedures for leaks during any loading, lightering, ballasting, or housekeeping event	Comply with leak detection requirements in: <ul style="list-style-type: none"> Rule 1173(e), or NESHAP, 40CFR63 Subpart Y, 63.563(c)
	Design and operate control device to collect, store, and process all VOC emissions	None	Same as above

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device VOC emissions greater than or equal to 10 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters (Amended 5/13/94)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
≥ 40 mmbtu/hr and ≥ 25% annual capacity factor (200 x 10 ⁹ btu/yr)	30 ppmv NO _x and 400 ppmv CO, 3% O ₂ averaged over 15 minutes	Continuous in-stack NO _x monitor in compliance with 40 CFR Part 60 Appendix B Spec 2	<p><u>For NO_x</u>: CEMS meeting 40 CFR 60 Appendix F</p> <p><u>For CO</u>:</p> <ul style="list-style-type: none"> • CEMS meeting 40 CFR 60 Appendix B & F • Performance test once every 5 years, or • Annual monitoring with AQMD-approved portable analyzer; or • Parametric monitoring ⁽¹⁾ correlated with a performance test
≥ 40 mmbtu/hr and ≤ 25% annual capacity factor and > 90,000 therms/yr fuel use	40 ppmv NO _x and 400 ppmv CO	<ul style="list-style-type: none"> • Totalizing fuel meter for each type of fuel. • Performance test for NO_x, CO, O₂, or CO₂ at the time of permit evaluation • Performance test Method 100.1 	<ul style="list-style-type: none"> • Performance test for NO_x and CO once every 5 years, or • Annual monitoring for NO_x and CO with AQMD-approved portable analyzer; or • Parametric monitoring ⁽¹⁾ correlated with a performance test
≥ 5 mmbtu/hr and > 90,000 therms/yr fuel use	40 ppmv NO _x or 0.05 lb/mmbtu input NO _x , and 400 ppmv CO	<ul style="list-style-type: none"> • Totalizing fuel meter for each type of fuel • Performance test for NO_x, CO, O₂, or CO₂ at the time of permit evaluation • Performance test Method 100.1 	<p><u>≥10 mmbtu/hr</u></p> <ul style="list-style-type: none"> • Performance test for NO_x and CO once every 5 years, or • Annual monitoring for NO_x and CO with AQMD-approved portable analyzer; or • Parametric monitoring ⁽¹⁾ correlated with a performance test <p><u>Other</u> Monitoring for NO_x & CO with AQMD-approved portable analyzer once every 5 yrs ⁽²⁾</p>
≥ 5 mmbtu/hr and < 90,000 therms/yr fuel use	Tune up twice a year	Totalizing fuel meter for each type of fuel, and Rule 1146 Attachment 1, Tune up procedures to measure CO and O ₂	None

⁽¹⁾ See General Provisions for more discussions

⁽²⁾ Non-AQMD-approved analyzers are acceptable if AQMD-approved analyzers are not commercially available

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1146.1 - Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters (Amended 5/13/94)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
2 to <5 mmbtu/hr and >18,000 therms/yr fuel use	30 ppmv NO _x (or 0.037 lb/mmbtu input NO _x) and 400 ppmv CO, 3% O ₂ averaged over 15 minutes,	Performance test for NO _x , CO, O ₂ , or CO ₂ at the time of permit evaluation Performance test Method 100.1	Monitoring of exhaust stack for NO _x and CO using an AQMD-approved portable analyzer once every 5 years ⁽¹⁾
2 to <5 mmbtu/hr and ≤ 18,000 therms/yr fuel use	Tune up twice a year	Totalizing fuel meter for each type of fuel Rule 1146.1 Attachment 1, Tune up procedures to measure CO and O ₂	None

⁽¹⁾ Non-AQMD-approved analyzers are acceptable if AQMD-approved analyzers are not commercially available

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1148 - Thermally Enhanced Oil Recovery Wells (Adopted 11/5/82)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Thermally enhanced oil recovery wells	4.5 lbs VOC per day or less	Annual performance test using EPA Method 25, ARB Method 2-4, or AQMD Method 25.1, or equivalent	None

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1150.1 - Control of Gaseous Emissions from Active Landfills (Adopted 4/5/85)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Active Landfill, received waste on or after 1/1/1982	Install and maintain a landfill gas control system and perimeter sampling probes to prevent off-site gas migration	Compliance plan and permit conditions	None
	50 ppm VOC limit for integrated sample	Analysis of integrated air sample per AQMD Test Method 25.1 (Analytical portion) once a month or as determined by the AQMD	None
	500 ppm VOC limit for instantaneous sampling at any point on the surface of the landfill	Instantaneous monitoring using an organic vapor analyzer (OVA) or other approved devices once a month or as determined by the AQMD	None
Landfill Gas Collection System	Apply mitigation measures during installation of LFG system to prevent public nuisance	Compliance plan conditions	None
	Dispose landfill gas collected by any of the following methods and evaluate their control efficiencies: <ul style="list-style-type: none"> • Combustion • Gas treatment and subsequent sale • Sale and processing off-site • Other equivalent method 	Annual performance test per EPA TM 25 or AQMD TM 25.1 or modified 25.1	None

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1150.2 - Control of Gaseous Emissions from Inactive Landfills (Adopted 10/18/85)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Inactive landfill deemed necessary for landfill gas control systems and/or monitoring systems	Install and maintain a landfill gas control system and perimeter sampling probes to prevent off-site gas migration	Compliance plan and permit conditions	None
	50 ppm VOC limit for integrated sample	Analysis of integrated air sample per AQMD Test Method 25.1 (Analytical portion) once a month or as determined by the AQMD	None
	500 ppm VOC limit for instantaneous sampling at any point on the surface of the landfill	Instantaneous monitoring using an organic vapor analyzer (OVA) or other approved devices once a month or as determined by the AQMD	None
Landfill Gas Collection System	Apply mitigation measures during installation of LFG system to prevent public nuisance	Compliance plan conditions	None
	Dispose landfill gas collected by any of the following methods and evaluate their control efficiencies: <ul style="list-style-type: none"> • Combustion • Gas treatment and subsequent sale • Sale and processing off-site • Other equivalent method 	Annual performance test per EPA TM 25 or AQMD TM 25.1 or modified 25.1	None

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1153 - Commercial Bakery Ovens (Amended 1/13/95)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
Bakery ovens commenced prior to 1/1/91	<ul style="list-style-type: none"> • 70% or more by weight reduction of VOC for ovens emitting 50 lbs or more but less than 100 lbs of VOC per day, or • 95% or more by weight reduction of VOC for ovens emitting \geq100 lbs of VOC per day 	The following methods for control efficiency are specified in the rule, but the rule does not ask for any periodic monitoring requirements using the methods: EPA TM 25 or AQMD TM 25.1	<u>All</u> Control device monitoring per Appendix A For major source ⁽¹⁾ Performance test once every 5 years or parametric monitoring correlated with a performance test ⁽²⁾
New bakery ovens commenced after 1/1/91	<ul style="list-style-type: none"> • 95% or more by weight reduction of VOC for ovens emitting 50 lbs or more per day 		

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device VOC emissions greater than or equal to 10 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1158 - Storage, Handling and Transport of Petroleum Coke (Adopted 12/2/83)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Facilities with petroleum coke piles	Store petroleum coke in enclosed structures, or comply with a Petroleum Coke Control Plan containing the information as specified in subparagraph (c)(1)(B)	Depends on Plan	Determined based on case-by-case Plan review
	All trucks be sufficiently washed and all loads be watered, treated, covered or otherwise protected to prevent coke from dropping out of the trucks during transport	Depends on Plan	Determined based on case-by-case Plan review

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1162 - Polyester Resin Operations (Amended 5/13/94)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
Polyester Resin Operations	<p>Comply with either the material requirements in subparagraph (c)(1)(A) or one of the following applicable process requirements:</p> <ul style="list-style-type: none"> • < 4% weight loss of polyester materials for a closed-mold system • ≤ 60 grams of VOC emissions per square meter of exposed surface area when a vapor suppressed resin is used • < 3% weight loss of polyester materials and the additional process requirements in (c)(1)(B)(iii) <p>or</p> <p>Air pollution control system capable of 90% or more control efficiency</p>	<p><u>Recordkeeping</u></p> <ul style="list-style-type: none"> • Maintain daily records on the following items: <ol style="list-style-type: none"> 1. Manufacturer's name, type and amount of each of the polyester resin materials used 2. Weight of monomer for all polyester resin materials 3. If adding VOC-containing materials to polyester resin, amount of VOC-containing materials and the VOC content of the VOC-containing materials 4. For vapor suppressed resins, a certificate from resin manufacturer for each resin type 5. For closed-mold and pultrusion systems, the weight loss of polyester resin materials for each application (AQMD Method 309) • For air pollution control system: daily records of all key system parameters, including hours of operation, temperatures, pressures, and flow rates, that are necessary to ensure control efficiency requirements. 	<ul style="list-style-type: none"> • <u>If control device is not used:</u> Maintain copies of the latest manufacturer's material specifications or certified laboratory analyses for all organic containing materials showing monomer content; and • <u>If control device is used:</u> <u>All</u> Control device monitoring per Appendix A <u>For major source</u>⁽¹⁾ Performance test once every 5 years or parametric monitoring correlated with a performance test⁽²⁾

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device VOC emissions greater than or equal to 10 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1162 - Polyester Resin Operations (cont.)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
		<p>The following methods are specified in the rule, but the rule does not ask for any periodic monitoring requirements using the methods:</p> <ul style="list-style-type: none"> • <u>VOC Content</u>: EPA Method 24 (VOCs) and AQMD Method 303 (exempt comp); or AQMD Method 304 (VOC - various) • <u>Monomer Content</u>: AQMD Method 312 • <u>Control Efficiency</u>: EPA Test Methods 25, 25A or AQMD Test Method 25.1 for VOCs, and EPA Test Method 18 or ARB Test Method 422 for exempt compounds 	
Polyester Resin Spraying Operations	<ul style="list-style-type: none"> • Usage of HVLP, airless, air-assisted airless, or electrostatic spray equipment, or • Air pollution control system capable of achieving 90% or higher control efficiency 	None	<ul style="list-style-type: none"> • <u>If control device is used</u>: <u>All</u> Control device monitoring per Appendix A <u>For major source</u>⁽¹⁾ Performance test once every 5 years or parametric monitoring correlated with a performance test⁽²⁾ • <u>If control device is not used</u>: None
Polyester Resin Operations	<ul style="list-style-type: none"> • Keep the resin materials in closed containers 	None	None

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device VOC emissions greater than or equal to 10 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1164 - Semiconductor Manufacturing (Amended 1/13/95)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
Solvent Cleaning Stations	<ul style="list-style-type: none"> A cover for all reservoirs, sinks, tanks and containers which transfer, store or hold VOC-containing materials; or An approved emission control system with 90% reduction efficiency for such cases 	<p>None</p> <p>The following methods are specified in the rule to determine control efficiencies, but the rule does not ask for any periodic monitoring using these methods: EPA Test Method 25, 25A or AQMD Test Method 25.1 (VOCs), and EPA Test Method 18 or ARB TM 422 (exempt compounds)</p>	<ul style="list-style-type: none"> <u>If a cover is used:</u> Monthly visual inspection <u>If a control device is used:</u> <u>All</u> Control device monitoring per Appendix A <u>For major source</u>⁽¹⁾ Performance test once every 5 years or parametric monitoring correlated with a performance test⁽²⁾
Solvent Cleaning Stations - Reservoirs and sinks holding VOC containing fluid with composite partial pressure of 33 mmHg or less at 20°C	<ul style="list-style-type: none"> 1.0 or greater freeboard ratio, or An approved emission control system with 90% reduction efficiency 	<p>None</p> <p>The following methods are specified in the rule to determine control efficiencies, but the rule does not ask for any periodic monitoring using these methods: EPA Test Method 25, 25A or AQMD Test Method 25.1 (VOCs), and EPA Test Method 18 or ARB TM 422 (exempt compounds)</p>	<ul style="list-style-type: none"> <u>If a control device is used:</u> <u>All</u> Control device monitoring per Appendix A <u>For major source</u>⁽¹⁾ Performance test once every 5 years or parametric monitoring correlated with a performance test⁽²⁾ <u>If a control device is not used:</u> None

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device VOC emissions greater than or equal to 10 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1164 - Semiconductor Manufacturing (cont.)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
Solvent Cleaning Stations	<ul style="list-style-type: none"> • VOC content of the cleanup solvents shall not exceed 200 g/liter; or • VOC composite partial pressure shall not exceed 33 mmHg at 20°C; or • The components being cleaned are totally enclosed during the cleaning process; or • the cleanup solvents are flushed or drained in a manner that does not allow evaporation into the atmosphere 	<ul style="list-style-type: none"> • Maintain records pursuant to Rule 109 • The testing methods for VOC content and partial pressure are specified in the rule, but the rule does not ask for any periodic monitoring 	None
	Repair solvent leaks of 3 drops per minute or more within 24 hrs of detection or shut down the equipment until replaced or repaired	None	Monthly visual inspection for leaks and maintain a log on inspection findings and corrective actions taken.
	Use only non-absorbent, closed containers to store, transfer or dispose all VOC containing accessories	None	None
Photoresist Operations	An approved emission control system with 90% VOC reduction efficiency	The following methods are specified in the rule to determine control efficiency, but the rule does not ask for any periodic monitoring using these methods: EPA Test Method 25, 25A or AQMD Test Method 25.1 (VOCs), and EPA Test Method 18 or ARB TM 422 (exempt compounds)	<u>All</u> Control device monitoring per Appendix A <u>For major source</u> ⁽¹⁾ Performance test once every 5 years or parametric monitoring correlated with a performance test ⁽²⁾
Semi-conductor manufacturing facilities	Alternative Emission Control Plan (AECP)	Rule 108	None

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device VOC emissions greater than or equal to 10 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1171 - Solvent Cleaning Operations (Amended 6/13/97)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING/TESTING AND/OR RECORDKEEPING
<p>All solvent cleaning operations except described under R.1171 (h) - Exemptions</p>	<ul style="list-style-type: none"> • VOC limits (from 50 g/l to 1070 g/l) and VOC composite partial pressures (from 1 to 35 mmHg at 20 oC) for different types of cleaning operations or materials are specified under Rule 1171(c)(1) • Operation requirements for cleaning devices and methods are specified under Rules 1171(c)(2), (c)(3) and (c)(4) to minimize the emissions from cleaning operations • Storage and disposal in closed non leaking, non-absorbent containers • In lieu of complying with Rule 1171(c)(1), or (c)(2), install/operate a control device that: <ul style="list-style-type: none"> • captures at least 90% by weight of emissions and has a control efficiency of at least 95% by weight or achieves 50 ppm at the outlet • for graphic arts, and screen printing, captures at least 70% by weight, and controls at least 95% by weight 	<ul style="list-style-type: none"> • Daily recordkeeping is required per Rule 109. Records must include all parameters specified under Rule 109 (c)(1). Rule 109 allows the use of manufacturer product specifications or testing utilizing the following test methods: <p style="margin-left: 40px;">EPA Method 24 for VOC content, and AQMD Method 303 for exempt compounds; or AQMD Method 304, AQMD Method 308 for determination of partial pressures, AQMD Method 313 for determination of presence of VOC in cleaning materials</p> • Testing frequency is not specified. However, Rule 1171(f)(4) specifies the approved testing methods for control device: <p style="margin-left: 40px;">USEPA Method is 55 FR 26865, 6/29/90 for collection efficiency; for control device efficiency, USEPA Methods 25, 25A, or AQMD Method 25.1; and EPA Method 18, or ARB Method 422 for exempt compounds.</p> 	<ul style="list-style-type: none"> • <u>If a control device is used:</u> All Control device monitoring per Appendix A <p style="margin-left: 40px;">For major source⁽¹⁾ Performance test once every 5 years or parametric monitoring correlated with a performance test⁽²⁾</p> • <u>If a control device is not used:</u> None

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device VOC emissions greater than or equal to 10 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1173 - Fugitive Emissions of Volatile Organic Compounds (Amended 5/13/94)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
<p>Valves, fittings, pumps, compressors, pressure relief devices (PRD), diaphragms, hatches, sight-glasses, and meters at:</p> <p>refineries, chemical plants oil and gas production fields, natural gas processing plants, and pipeline transfer stations</p>	<ul style="list-style-type: none"> • Inspection and Maintenance Requirements to reduce fugitive emissions • Major leak for PRD: ≥ 200 ppm as methane • For other equipment: Major: $\geq 10,000$ ppm as methane Minor: $\geq 1,000$ ppm as methane 	<ul style="list-style-type: none"> • Inspect for leaks: Accessible pumps, compressors, and PRDs: once every 8-hr period. Other accessible components: quarterly. All inaccessible components: annually. PRD: within 14 days after a relief <p><u>Inspection Method</u></p> <p>EPA Reference Method 21 with an analyzer calibrated with methane at a distance of 1 cm or less from the source.</p>	<p>None</p>

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1175 - Control of Emissions from the Manufacture of Polymeric Cellular (Foam) Products (Amended 5/13/94)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING/TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP FILLING MONITORING/TESTING AND/OR RECORDKEEPING
Polymeric Cellular Manufacturing Operations, excluding Expandable Polystyrene (EPS) Molding Operations	Reduction of yearly emissions, from 1988 emissions baseline, by 100 percent beginning calendar year 1994, or compliance with the following requirements: <ul style="list-style-type: none"> • Installation of an approved emission control system as defined in paragraph (b)(1) venting all sources of manufacturing emissions. • Emissions of the final manufactured products shall be vented to the control system for at least 24 hours 	<u>Recordkeeping</u> <ul style="list-style-type: none"> • Daily records on the amount of raw material processed, the equipment used, and the type of blowing agent used. • If a control device is used, also maintain daily records on key system operating parameters such as temperatures, pressures, flowrates and others. 	<ul style="list-style-type: none"> • <u>If a control device is used:</u> <u>All</u> Control device monitoring per Appendix A <u>For major source</u>⁽¹⁾ Performance test once every 5 years or parametric monitoring correlated with a performance test⁽²⁾
Expandable Polystyrene (EPS) Molding Operations	< 2.4 lb of manufacturing and post-manufacturing emissions per 100 lb of raw material processed, or compliance with the following requirements: <ul style="list-style-type: none"> • Installation of an approved emission control system as defined in paragraph (b)(1) venting all sources of manufacturing emissions. • Emissions of the final manufactured products shall be vented to the control system for at least 24 hours; 48 hours if more than 800,000 lb/yr of raw material is processed 	<ul style="list-style-type: none"> • Various testing methods are specified in the rule, but the rule does not ask for any periodic monitoring requirements using these methods 	<ul style="list-style-type: none"> • <u>If a control device is not used:</u> None

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device VOC emissions greater than or equal to 10 tpy

⁽²⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1176 - Sumps and Wastewater Separators (Amended 9/13/96)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Wastewater systems and associated control equipment at petroleum refineries, on-shore oil production fields, off-shore oil production platforms, chemical plants, and industrial facilities	<ul style="list-style-type: none"> • Wastewater systems: ≤ 500 ppm above background levels • Sumps/Wastewater Separators: <ol style="list-style-type: none"> 1. floating cover with seals; or 2. fixed cover vented to control device • Sewer lines: totally enclosed • Process drains: with AQMD approved water seals • Junction boxes: totally enclosed 	<ul style="list-style-type: none"> • Inspect for leaks by AQMD certified inspector: <p style="margin-left: 20px;">Control device: at least monthly</p> <p style="margin-left: 20px;">Devices at pet. refineries: <ol style="list-style-type: none"> 1. Accessible: monthly 2. Inaccessible: annually </p> <p style="margin-left: 20px;">Devices at other facilities: <ol style="list-style-type: none"> 1. Accessible: quarterly 2. Inaccessible: Annually </p> • Methods used in Inspections <ol style="list-style-type: none"> 1. EPA Reference Method 21, using an analyzer calibrated with methane. 2. AQMD Grab Sample Method in Attachment A of Rule 1176 	None
	<ul style="list-style-type: none"> • Control device: <ol style="list-style-type: none"> 1. $\geq 95\%$ by wt, or 2. ≤ 500 ppm above background 	<ul style="list-style-type: none"> • Annual performance test to show compliance with the emission limit or the control efficiency in accordance with EPA Reference Method 25, or AQMD Method 25.1. 	None

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1183 - Outer Continental Shelf (OCS) Air Regulations (Adopted 3/12/93)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Various equipment	Refer to specific AQMD rules	Refer to specific AQMD rules	Refer to specific AQMD rules

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Rule 1303 - New Source Review (Amended 5/10/96)

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Any new or modified equipment with emission increases	Best Available Control Technology (BACT)	None	<p><u>All</u></p> <ul style="list-style-type: none"> • Control device monitoring per Appendix A; and • Monitoring for compliance with material specifications (grams of VOC/liter) and work practice standards if applicable <p><u>For major source</u> ⁽¹⁾</p> <ul style="list-style-type: none"> • CEMS or • Performance test once every 5 years for short-term BACT emission limits ⁽²⁾ or parametric monitoring ⁽³⁾ correlated with a performance test
Any new or modified equipment with emission increases	Daily, monthly or annual mass emission limits	None	<ul style="list-style-type: none"> • CEMS for mass emissions, or • Daily recordkeeping and emission calculations based on mass balance (such as for VOC or fuel sulfur), or • Throughput limit with recordkeeping, and short-term emission limit. (Mass emission limit is based on throughput times an emission factor converted from the short-term emission limit)

⁽¹⁾ Major source means a source, or all sources venting to a single stack and sharing a control device, that has potential to emit, pre-control device emissions greater than or equal to the following thresholds VOC = 10 tpy, NOx (as NO2) = 10 tpy, SOx (as SO2) = 100 tpy, CO = 50 tpy, PM = 70 tpy

⁽²⁾ Short-term BACT emission limits are limits that can be performance tested, such as emission concentrations, hourly mass emissions, or control device efficiency

⁽³⁾ See General Provisions for more discussion

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Regulation XX - RECLAIM

EQUIPMENT CATEGORY	EMISSION LIMIT OR REQUIREMENT	MONITORING, TESTING, AND/OR RECORDKEEPING REQUIRED BY RULE	GAP-FILLING MONITORING, TESTING AND/OR RECORDKEEPING
Major SO _x sources as described under Rule 2011(c)(1)	<ul style="list-style-type: none"> • No equipment-specific emission limit. • Facility emissions cap. 	CEMS or ACEM	None.
Process SO _x units as described under Rule 2011(d)(1)	<ul style="list-style-type: none"> • No equipment-specific emission limit. • Facility emissions cap. 	Fuel meter, and/or timer, or equivalent	None.
Major NO _x sources as described under Rule 2012(c)(1)	<ul style="list-style-type: none"> • No equipment-specific emission limit. • Facility emissions cap. 	CEMS or ACEM	None.
Large NO _x sources as described under Rule 2012(d)(1)	<ul style="list-style-type: none"> • Concentration limit or equipment-specific emission rate. • Facility emissions cap. 	<ul style="list-style-type: none"> • Fuel meter and applicable parameters described in Appendix A, Chapter 3, Table 3-A, or equivalent • Test every three year to determine continuous compliance with the concentration limit or equipment-specific emission rate 	None.
Process NO _x sources as described under Rule 2012(e)(1)	<ul style="list-style-type: none"> • No equipment-specific emission limit. • May have equipment-specific or category-specific emission rate • Facility emissions cap. 	Fuel meter and/or timer, or equivalent	None.

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Appendix A - Requirements for Air Pollution Control Devices

CONTROL DEVICE	GAP-FILLING MONITORING/TESTING AND/OR RECORDKEEPING ⁽¹⁾
Activated carbon adsorber	<p><u>For non-regenerative units:</u></p> <ul style="list-style-type: none"> • Carbon replacement frequency limit and recording of carbon replacement frequency; or • VOC limit and daily monitoring of exhaust stack for VOC concentration using an Organic Vapor Analyzer (OVA) during operation <p><u>For regenerative units:</u></p> <ul style="list-style-type: none"> • Carbon regeneration frequency limit and recording of carbon regeneration frequency; or • VOC limit and daily monitoring of exhaust stack for VOC concentration using an Organic Vapor Analyzer (OVA)
Afterburner, thermal (or thermal oxidizer)	<ul style="list-style-type: none"> • Exhaust temperature limit and continuous monitoring of exhaust temperature and recording with a strip chart or digital data acquisition system
Afterburner, catalytic (or catalytic oxidizer)	<ul style="list-style-type: none"> • Inlet and outlet temperature limits and continuous monitoring of inlet and outlet temperature and recording with a strip chart or digital data acquisition system, and • Annual catalyst activity test.
Baghouse	<ul style="list-style-type: none"> • Category II Rule 401 monitoring, or Differential pressure gauge and limit for pressure drop across filters. Monitor and record pressure drop a) once per day for units with automatic bag shaking, b) immediately prior to each shaking for manually shaken units, or c) continuously. • Visual inspection of the filter bags for any tear or damage a) once a month for baghouses where bags can be inspected without removal, and b) annually for other types of baghouses • Discharge dust only into enclosed containers or back to process.

⁽¹⁾ These periodic monitoring guidelines do not apply to air pollution control devices whose sole purpose is compliance with Rule 402, which is not federally enforceable

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Appendix A - Requirements for Air Pollution Control Devices (cont.)

CONTROL DEVICE	GAP-FILLING MONITORING/TESTING AND/OR RECORDKEEPING ⁽¹⁾
Biofilter	<ul style="list-style-type: none"> • VOC limit and daily monitoring of exhaust stack or bed for VOC concentration using an OVA
Condenser	<ul style="list-style-type: none"> • Limits of coolant temperatures at the front and rear end, continuous monitoring of coolant temperatures, and 1) continuous recording with a strip chart or digital data acquisition system, or 2) hourly recording. • VOC limit and daily monitoring of outlet VOC concentration using an Organic Vapor Analyzer (OVA) or an equivalent method
Electrostatic Precipitator (ESP)	<p><u>Large units</u></p> <ul style="list-style-type: none"> • Using operating parameters at the time of performance testing, and/or equipment performance data, maintain daily records of the current, voltage at each transformer and spark rate in each section; and • Discharge dust into enclosed container or back to process. <p><u>Small units</u></p> <ul style="list-style-type: none"> • Periodic cleaning and maintenance according to manufacturer's recommendations.
Flare	<p><u>Ground flares</u></p> <ul style="list-style-type: none"> • Exhaust temperature limit, continuous monitoring of exhaust temperature and recording with a strip chart or digital data acquisition system <p><u>Other</u></p> <ul style="list-style-type: none"> • Continuous monitoring the presence of pilot flame with a thermocouple or equivalent device • Maintain records of weekly check
NSCR, Stationary and oxidizing catalysts	<ul style="list-style-type: none"> • CEMS for NO_x and O₂, or • Oxygen concentration limit; and • Install and maintain an automatic air-to-fuel ratio controller which maintains the exhaust oxygen limit; and • Install and maintain a thermocouple at the inlet and outlet of the catalyst and record temperature continuously on a strip chart or digital data acquisition system; and • Maintain records of the above parameters.

⁽¹⁾ These periodic monitoring guidelines do not apply to air pollution control devices whose sole purpose is compliance with Rule 402, which is not federally enforceable

PERIODIC MONITORING, TESTING AND RECORDKEEPING REQUIREMENTS FOR AQMD RULES

Appendix A - Requirements for Air Pollution Control Devices (cont.)

CONTROL DEVICE	GAP-FILLING MONITORING/TESTING AND/OR RECORDKEEPING ⁽¹⁾
NSCR, Portable	<ul style="list-style-type: none"> • Oxygen concentration limit; and • Install and maintain an automatic air-to-fuel ratio controller which maintains the exhaust oxygen limit; and • Semi-annual maintenance inspection.
Scrubber, Chemical	<ul style="list-style-type: none"> • pH limit, and continuous or daily monitoring of the pH of the scrubbing solution, and • Pressure drop limit, differential pressure gauge, and daily record of the differential pressure across the scrubber, and • flow rate limit of scrubbing solution, continuous flow rate meter, and daily record of flow rate of scrubbing solution and make-up water, and • concentration limit, and daily monitoring of exhaust stack for chemical being scrubbed concentration using a detection tube or an equivalent method
SCR (excluding SCR for emergency standby equipment)	<ul style="list-style-type: none"> • CEMS for NO_x and O₂, or Continuous monitoring and recording of ammonia flow, estimated NO_x and ammonia/NO_x ratio • Ammonia concentration limit and ammonia source test once every 5 years ⁽²⁾
Spray Booth	<ul style="list-style-type: none"> • Differential pressure gauge and limit for pressure drop across filters • Weekly check of filter or waterwash integrity
Tail Gas Unit	<ul style="list-style-type: none"> • Refer to Table 2-A, Appendix A, Rule 2011

⁽¹⁾ These periodic monitoring guidelines do not apply to air pollution control devices whose sole purpose is compliance with Rule 402, which is not federally enforceable

⁽²⁾ Performance test once every 5 years is required for NO_x major source that has potential to emit, pre-control device emissions greater than 10 tpy