

Overview

- Regulated Sources
- Compliance Activities
- Compliance Programs
- VOC Rules Applicability
- Discussion

Refinery Team Facilities

- 9 Refineries
- ->1,000,000 BBL/day
- 15 Marine Terminals
- 3 Asphalt Plants
- 4 Hydrogen Plants
- 1 Polypropylene Plant

Major Refinery Sources

- BP Products
- Chevron Texaco
- ConocoPhillips Wilmington/Carson
- ExxonMobil
- Paramount Petroleum
- Tesoro Corporation
- Valero

Compliance Activities

- Process Unit Inspections
- RECLAIM Audits/Inspections
- Complaint Response
- Public Nuisance Investigations
- Breakdown Investigations
- Blue Sky Audits Rule 1173/1176/463

Rules and Regulations

- Inspections to determine compliance with:
 - Process Unit Permit Conditions
 - Title V Conditions
 - Federal Regulations 40CFR 60 & 63
 - Tank Degassing & Contaminated Soil■ Rules 1166 & 1149
 - Self-Inspection Rule and Report Audits
 - Rules 463, 1173, 1176 and 1178
 - Rule Inspections
 - 401, 402, 430, 462, 463, 1105, 1105.1, 1118, 1123, 1142, 1158, 1173 and 1178
 - RECLAIM Rules (Regulation XX)

VOC Rules

- SCAQMD Rule 1173
- SCAQMD Rule 1176
- SCAQMD Rule 1178
- SCAQMD Rule 463
- SCAQMD Rule 1189
- SCAQMD Rule 1118
- SCAQMD Rule 1123

SCAQMD Rule 1173

■ Control volatile organic compound leaks from components and releases from atmospheric process pressure relief devices.

SCAQMD Rule 1173 SCAQMD Rule 1173 Adopted July 7,1989 Rule Components Leak Standards Identification Monitoring Maintenance Recordkeeping

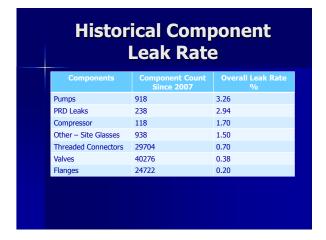


Rule 1173 Maintenance Requirements Type of Leak Light 500 ppm to 10,000 ppm 7 Calendar Days 7 Calendar Days liquid/gas/vapor 100 ppm to 500 7 Calendar Days 7 Calendar Days Heavy liquid ppm Heavy liquid 3 Drops per 7 Calendar Days minute and 100 ppm to 500 ppm 10,000 ppm to 25,000 ppm Any Leak 2 Calendar Days 3 Calendar Days Any Leak Greater than 1 Calendar Day 25,000 ppm



Rule 1173 Exemptions Components handling commercial natural gas. Components handling fluids less than 10% VOC content by weight.

















SCAQMD Rule 1176

■ This rule is intended to limit volatile organic compound emissions from wastewater systems.

SCAQMD Rule 1176

- SCAQMD Rule 1176
 - Adopted November 3, 1989
- Rule Components
 - Identification Requirements
 - Operation and Control Requirements
 - Inspection, Monitoring and Maintenance
 - Recordkeeping, Reporting and Verification

Control Requirements

- Sumps and Wastewater Separators
- Sewer Lines
- Process Drains
- Junction Boxes
- Air Pollution Control Devices

Inspection, Monitoring and Maintenance

- Wastewater separator and associated closed vent system
 - Monthly
- Non- Emitting DSCs
 - Semi-Annual
- Inaccessible DSCs
 - Annually
 - Applicability for LDAR

Recordkeeping, Reporting and Verification

- Recordkeeping
 - Records maintained for two years
- Reporting
 - Notification 60 days for modification
 - Quarterly and Semi-Annual Requirements

Testing Methods

- EPA Method 21
 - VOC field measurements
 - Total Hydrocarbons
- EPA Method 25
 - Methane and Non-Methane Hydrocarbons

Rule 1176 Exemptions

- Industrial wastewater system.
- VOC content less than 5 mg/liter.
- Equipment for rain water, storm runoff or non-contact water.
- Components subject and exempt under Rule 1173.



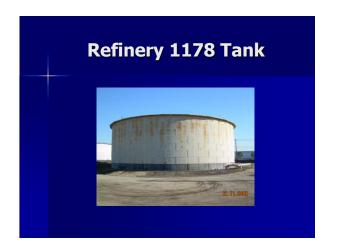






SCAQMD Rule 1178

 This rule is intended to reduce volatile organic compounds from storage tanks at petroleum facilities.



Tank Emissions



Requirements

- External Floating Roof Tanks
- Domed External Floating Roof Tanks
- Internal Floating Roof Tanks
- Fixed Roof Tanks

General Requirements

- Inspection Requirements
- Vapor Tight Conditions – 500 ppm VOC
- Domed External Floating Roof - LEL shall be less than 30%
- Maintenance Requirements
- Reporting Requirements





SCAQMD Rule 463

 This rule is intended to reduce volatile organic compounds from above ground storage tanks

Organic liquids

Greater than 19,815 gallons Gasoline

Between 251 and 19,815 gallons

Requirements

- Tank Roof Requirements Rule Product
 - External Floating Roof
 - Self Inspection Monitoring
 - Internal Floating Type Cover
 - LEL less than 30%
 - Fixed Roof
 - Vapor Tight Covers
 - Leak Limit 1,000 ppm VOC

SCAQMD Rule 1118

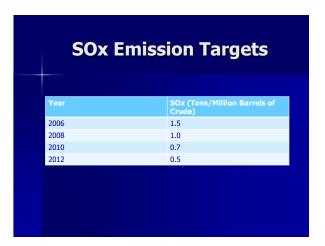
■ This rule is intended to reduce SO₂ emissions from refinery and related flaring operations.

Flare Emissions

Components

- Requirements
- Performance Targets
- Flare Minimization Plan
- Flare Monitoring and Recording Plan
- Operational Monitoring and Recording
- Recordkeeping
- Notification and Reporting
- Testing and Monitoring

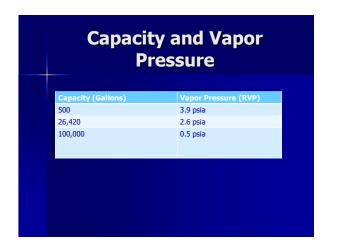
Requirements Pilot Flame Smokeless Flares Notification Based on Thresholds 100 pounds VOC 500 pounds of sulfur dioxide 500,000 standard cubic feet of vent gas Continuous Monitoring Quarterly Reports



SCAQMD Rule 1149

■ This rule applies to the cleaning and degassing of a stationary tank, reservoir, or other container storing or last used for volatile organic compounds.

Rule Components Requirements - Control Methods Test Methods Exemptions



Requirements Liquid Balancing Control Emissions less than 5,000 ppm Floating Roof Tank less 5,000 ppm Pipeline VOC less 5,000 ppm Control Devices - 500 ppm VOC as Methane Vacuum Trucks - 500 ppm VOC as Methane





SCAQMD Rule 1189

■ This purpose of the rule is to reduce volatile organic compounds from hydrogen plant process vents.

Requirements

- Total VOC emissions from all process vents combined are less than 2.5 pounds per million cubic feet of hydrogen produced or
- Total VOC content in the process condensate is reduced at least 80 % from the baseline levels.
- Annual Source Tests

Typical VOC Emissions

Hydrogen Unit	Report VOC per million cubic feet of Hydrogen Produced	Average Annual Hourly Hydrogen Production MMSCFH
1	0.282	1.29
2	0.09	68.75
3	0.95	61.60
4	0.61	61.60
5	0.32	1.42
6	1.44	3.42
6	1.44	3.42

SCAQMD Rule 1123

- This rule applies to refinery process turnarounds.
- Requirements
 - Depressurize any vessel containing VOC
 - Submit Plan

