BOARD MEETING DATE: November 6, 2020 AGENDA NO. 26

PROPOSAL: Determine That Proposed Amendments to Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities, Are Exempt from CEQA and Amend Rule 1178

SYNOPSIS: Rule 1178 establishes requirements to control VOC emissions from storage tanks at petroleum facilities. Amendments to Rule 1178 are needed to address safety concerns related to the enclosure of external floating roof tanks that store sour water. Proposed Amended Rule 1178 will reinstate an expired provision that allows operators to accept a permit condition to limit the vapor pressure of organic liquid stored for external floating roof tanks that store sour water.

COMMITTEE: Stationary Source, September 18, 2020, Reviewed

RECOMMENDED ACTIONS:
Adopt the attached Resolution:
1. Determining that the proposed amendments to Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities, are exempt from the requirements of the California Environmental Quality Act; and
2. Amending Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities.

Wayne Nastri
Executive Officer

PMF:SN:MM:RC

Background

Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities was adopted on December 21, 2001. The purpose of Rule 1178 is to reduce emissions of VOCs from seals and fittings on storage tanks at petroleum facilities. Rule 1178 requires, by December 31, 2008, operators with VOC emissions exceeding 40,000

pounds per year either to install domed roofs on all external floating roof tanks that contain organic liquids having a true vapor pressure greater than or equal to three pounds per square inch absolute (psia) or to accept a permit condition limiting the true vapor pressure to lower than 3 psia. If the true vapor pressure is greater than or equal to 3 psia, the operator is required to install a domed roof no later than two years after exceeding the true vapor pressure limit.

In March 2019, a petroleum refining facility reported annual emissions for two external floating roof tanks in waste water storage service based on measurements exceeding 3 psia vapor pressure. The facility reported that the two waste water storage tanks which contain hydrogen sulfide contaminants can create pyrophoric material capable of igniting spontaneously in air.[1] The facility requested that they not be subject to any doming requirement due to the safety concern and to instead have the option to accept a permit condition to limit the true vapor pressure of 3 psia, similar to the 2008 expired provision.

Proposal

PAR 1178 reinstates a portion of the December 31, 2008 option that allows an operator to accept a permit condition to limit the true vapor pressure to 3 psia, in lieu of doming an external floating roof tank. PAR 1178 limits this provision to organic liquid stored in waste water tanks as installation of a domed roof creates a safety hazard due to the accumulation of pyrophoric material. As part of this amendment, the Executive Officer retains the ability to review and to confirm an operator's claim of a safety hazard due to the accumulation of pyrophoric material.

Public Process

The development of PAR 1178 was conducted through a public process. A public workshop was held on September 3, 2020 with the comment period closing on September 17, 2020. During the comment period, staff did not receive any comments.

Emission Reductions

The proposed amendment would result in approximately 2.4 pounds of VOC per day foregone emissions.

Key Issues

Staff is not aware of any key issues.

California Environmental Quality Act

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3). A Notice of Exemption has been prepared pursuant to

[1]AFPM Process Safety Bulletin – Flammability Hazards of Hydrogen Sulfide Accumulation in Sulfur Tanks by AFPM (American Fuel and Petrochemical Manufacturers); June 2018

CEQA Guidelines Section 15062 and is included as Attachment H to this Board letter. If the proposed project is approved, the Notice of Exemption will be electronically filed with the State Clearinghouse of the Governor's Office of Planning and Research to be posted on their CEQAnet Web Portal, which may be accessed via the following weblink: https://ceqanet.opr.ca.gov/search/recent. In addition, the Notice of Exemption will be electronically posted on the South Coast AQMD's webpage which can be accessed via the following weblink: http://www.aqmd.gov/nav/about/public-notices/ceqa-notices/notices-of-exemption/noe---year-2020. The electronic filing and posting of the Notice of Exemption is being implemented in accordance with Governor Newsom's Executive Orders N-54-20 and N-80-20 issued on April 22, 2020 and September 23, 2020, respectively, for the State of Emergency in California as a result of the threat of COVID-19.

Socioeconomic Analysis

The proposed amendment to Rule 1178 does not impose any additional costs. Therefore, no socioeconomic analysis is required under California Health and Safety Code Sections 40440.8 and 40728.5.

AQMP and Legal Mandates

PAR 1178 is needed to address a safety issue and is not implementing a control measure in the 2016 AQMP. PAR 1178 will be submitted to CARB and U.S. EPA for approval into the State Implementation Plan.

Resource Impacts

Existing staff resources are adequate to implement the proposed amendments.

Attachments

A. Summary of Proposal
B. Key Issues and Responses
C. Rule Development Process
D. Key Contacts List
E. Resolution
F. Proposed Amended Rule 1178
G. Final Staff Report
H. Notice of Exemption
I. Board Meeting Presentation

ATTACHMENT A

SUMMARY OF PROPOSAL

Proposed Amended Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities
Reinstatement of Permitting Option • Reinstates a provision that allows operators to accept a permit condition to limit the vapor pressure of organic liquid stored in a waste water tank in lieu of installing a dome where the installation of a domed roof may create a hazard due to the accumulation of pyrophoric material.

ATTACHMENT B

KEY ISSUES AND RESPONSES

Proposed Amended Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities
Staff is not aware of any key issues.

ATTACHMENT C
RULE DEVELOPMENT PROCESS

Proposed Amended Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities

Five (4) months spent in rule development.

One (1) Public Workshop.

One (1) Stationary Source Committee Meeting.

ATTACHMENT D

KEY CONTACTS LIST

Proposed Amended Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities (*listed alphabetically*)

- Phillips 66 Refinery
- Western States Petroleum Association

ATTACHMENT E

RESOLUTION NO. 20-____

A Resolution of the South Coast Air Quality Management District (South Coast AQMD) Governing Board determining that Proposed Amended Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities, is exempt from the requirements of the California Environmental Quality Act (CEQA).

A Resolution of the South Coast AQMD Governing Board amending Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities.

WHEREAS, the South Coast AQMD Governing Board finds and determines that Proposed Amended Rule 1178 is considered a "project" as defined by CEQA; and

WHEREAS, the South Coast AQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(l) and has conducted a CEQA review and analysis of Proposed Amended Rule 1178 pursuant to such program (South Coast AQMD Rule 110); and

WHEREAS, the South Coast AQMD Governing Board finds and determines after conducting a review of the proposed project in accordance with CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA, and CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA, that Proposed Amended Rule 1178 is exempt from CEQA; and

WHEREAS, the South Coast AQMD Governing Board finds and determines that implementation of the proposed project would result in minimal foregone VOC emission reductions whereby it can be seen with certainty that there is no possibility that proposed project may have any significant adverse effects on the environment, and is therefore, exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption; and

WHEREAS, the South Coast AQMD staff has prepared a Notice of Exemption for Proposed Amended Rule 1178 that is completed in compliance with CEQA Guidelines Section 15062 – Notice of Exemption; and

WHEREAS, the South Coast AQMD staff conducted a public workshop meeting on September 3, 2020 regarding Proposed Amended Rule 1178; and

WHEREAS, Proposed Amended Rule 1178 and the November 6, 2020 South Coast AQMD Governing Board letter, including the Notice of Exemption, Final Staff Report, and other supporting documentation, were presented to the South Coast AQMD Governing Board and the South Coast AQMD Governing Board has reviewed and considered this information, and has taken and considered staff testimony and public comment prior to approving the project; and

WHEREAS, the South Coast AQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures (codified as Section 30.5(4)(D)(i) of the Administrative Code), that the modifications to Proposed Amended Rule 1178 since the notice of public hearing was published are not so substantial as to significantly affect the meaning of the proposed amended rule within the meaning of Health and Safety Code Section 40726 because: (a) the changes do not impact emission reductions, (b) the changes do not affect the number or type of sources regulated by the rule, (c) the changes are consistent with the information contained in the notice of public hearing, and (d) the consideration of the range of CEQA alternatives is not applicable because Proposed Amended Rule 1178 is exempt from CEQA; and

WHEREAS, Proposed Amended Rule 1178 will be submitted for incorporation into the State Implementation Plan; and

WHEREAS, Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the South Coast AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the Final Staff Report; and

WHEREAS, the South Coast AQMD Governing Board has determined that a need exists to amend Rule 1178 to provide an alternative compliance measure for operators with tanks subject to Phase II in which installation of a domed roof would result in hazard due to accumulation of pyrophoric material; and

WHEREAS, the South Coast AQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from Sections 39002, 40000, 40001, 40440, 40702, 40725 through 40728, and 41508 of the Health and Safety Code; and

WHEREAS, the South Coast AQMD Governing Board has determined that there is a problem that Proposed Amended Rule 1178 will alleviate, addressing safety concerns from the enclosure of external floating roof tanks that store sour water and the proposed amendment will promote the attainment or maintenance of state or federal ambient air quality standards; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1178 is written and displayed so that its meaning can be easily understood by the persons directly affected by it; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1178 is in harmony with, and not in conflict with or contradictory to, existing federal or state statutes, court decisions, or regulations; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1178 does not impose the same requirements as any existing state or federal regulations, and the proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1178 references the following statutes which the South Coast AQMD hereby implements, interprets or makes specific: Health and Safety Code Sections 40001(a) (rules to meet air quality standards); 40440(a) (rules to carry out the plan); and 40702 (adoption of rules and regulations); and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1178 does not make an existing emission limit or standard more stringent, and therefore the requirements of Health and Safety Code Section 40727.2 are satisfied; and

WHEREAS, the South Coast AQMD Governing Board has determined that no socioeconomic assessment is required under Health and Safety Code Section 40440.8(a) because there are no adverse socio-economic impacts; and further that the proposed amended rule does not "significantly affect air quality or emissions limitations;" and

WHEREAS, the public hearing has been properly noticed in accordance with all provisions of Health and Safety Code Section 40725; and

WHEREAS, the South Coast AQMD Governing Board has held a public hearing in accordance with all provisions of law; and

WHEREAS, the South Coast AQMD specifies the Planning and Rules Manager of Rule 1178 as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of these proposed amendments is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

NOW, THEREFORE BE IT RESOLVED, that the South Coast AQMD Governing Board does hereby determine, pursuant to the authority granted by law, that Proposed Amended Rule 1178 is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption. This information was presented to the South Coast AQMD Governing Board, whose members reviewed, considered and approved the information therein prior to acting on Proposed Amended Rule 1178; and

BE IT FURTHER RESOLVED, that the South Coast AQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Amended Rule 1178 as set forth in the attached, and incorporated herein by reference; and

BE IT FURTHER RESOLVED, that the Executive Officer is hereby directed to forward a copy of this Resolution and Proposed Amended Rule 1178 to the California Air Resources Board for approval and subsequently submitted to the U.S. Environmental Protection Agency for incorporation into the State Implementation Plan.

DATE: _____ _____

CLERK OF THE BOARDS

(Adopted December 21, 2001)(Amended April 7, 2006)(Amended April 6, 2018)
(Amended November 6, 2020)

RULE 1178. FURTHER REDUCTIONS OF VOC EMISSIONS FROM STORAGE TANKS AT PETROLEUM FACILITIES

(a) Purpose

The purpose of this rule is to further reduce emissions of volatile organic compounds (VOC) from storage tanks located at petroleum facilities.

(b) Applicability

The rule applies to all aboveground storage tanks that have capacity equal to or greater than 75,000 liters (19,815 gallons), are used to store organic liquids with a true vapor pressure greater than 5 mm Hg (0.1 psi) absolute under actual storage conditions, and are located at any petroleum facility that emits more than 40,000 pounds (20 tons) per year of VOC in any emission inventory year starting with the emission inventory year 2000.

(c) Definitions

For the purpose of this rule the following definitions shall apply:

(1) ACCESS HATCH is an opening in the roof with a vertical well and a cover attached to it. Access hatch provides passage for workers and materials through the roof for construction or maintenance.

(2) AMBIENT TEMPERATURE is the temperature of an organic liquid within a storage tank that has been influenced by atmospheric conditions only and is not elevated by a non-atmospheric means of heating at the tank which includes but is not limited to steam, hot water, heaters, heat exchangers, tank insulation, or tank jacketing.

(3) CERTIFIED PERSON is a person who has successfully completed the District tank self-inspection program and a District approved fugitive emissions compliance inspection program, and who holds a certificate issued by the Executive Officer evidencing that such person is in good standing in this program.

(4) CONTINUOUS SEAL is a seal that forms a continuous closure that completely covers the annular space between the wall of the storage vessel and the edge of the floating roof. A continuous seal may be a vapor-

mounted, liquid-mounted, or metallic shoe seal. A continuous seal may be constructed of fastened segments so as to form a continuous seal.

(5) DOMED ROOF is a self-supporting fixed roof attached to the top of an external floating roof tank to reduce evaporative losses.

(6) EMISSION CONTROL SYSTEM is a combination of capture system(s) and control equipment used to recover, reduce, remove or control the release of VOC to the atmosphere. Such equipment includes, but is not limited to, absorbers, adsorbers, compressors, condensers, incinerators, flares, boilers, and process heaters.

(7) EMISSION INVENTORY YEAR is the annual emission-reporting period beginning from July 1 of the previous year through June 30 of a given year. For example, emission inventory year 2000 covers the period from July 1, 1999 through June 30, 2000.

(8) EXTERNAL FLOATING ROOF TANK is a storage tank with a roof consisting of a double deck or pontoon single deck which rests or floats on the liquid being contained.

(9) EXEMPT COMPOUNDS are as defined in Rule 102.

(10) FACILITY is any equipment or group of equipment or other VOC-emitting activities, which are located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control), or an outer continental shelf (OCS) source as determined in 40 CFR Section 55.2. Such above-described groups, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one facility.

(11) FIXED ROOF SUPPORT COLUMN AND WELL is a column made of round pipe or of structural shape with an irregular cross section that passes through the floating roof via a peripheral vertical well and is used to support the roof of an internal floating roof tank.

(12) FIXED ROOF TANK is a storage tank with a permanently affixed roof

(13) FLEXIBLE ENCLOSURE SYSTEM is a VOC emission reduction system made of a VOC impervious material which is resistant to ultraviolet radiation, completely enclosing a slotted guidepole and controls the vapor emission pathway from inside the storage vessel through the guidepole slots to the outside air.

(14) FUEL GAS SYSTEM is the piping and control system that gathers gaseous stream(s) generated by onsite operations and transports the gaseous stream for sale or for use as fuel gas in combustion devices, or in-process combustion equipment such as furnaces and gas turbines, either singly or in combination.

(15) GAUGE FLOAT is a device that is used to indicate the level of liquid within the tank. The float rests on the liquid surface and is housed inside a well that is closed by a removable cover.

(16) GAUGE HATCH/SAMPLE PORT is an opening in the roof that provides access for gauging or sampling. A gauge hatch/sample port is usually equipped with a closing cover or a funnel and slit-fabric seal to cover the opening.

(17) GUIDEPOLE is an anti-rotation device that is fixed to the top and bottom of the tank, passing through a well that is equipped with a sliding cover. The guidepole is used to prevent adverse movement of the roof and subsequent damage to the roof fittings and rim seals, or as access for level gauging or sampling of the liquid stock. The guidepole can be solid or equipped with slots or holes for gauging purpose.

(18) INTERNAL FLOATING ROOF TANK is a storage tank equipped with a fixed roof and a floating roof which rests on the liquid being contained.

(19) LADDER AND WELL is a ladder that passes through a well, and is used to access the tank bottom of an internal floating roof tank.

(20) LIQUID MOUNTED PRIMARY SEAL is a primary seal that is mounted in full contact with the liquid in the annular space between the tank shell and the floating roof.

(21) MECHANICAL SHOE PRIMARY SEAL is a metallic band attached to the floating roof sliding in contact with the tank shell. The shoes are supported and held against the tank shell by a mechanical device, and are joined together to form a ring. The vapor space between the shoe and the roof is sealed from the atmosphere by a primary seal of coated or VOC impervious fabric.

(22) ORGANIC LIQUID is any liquid containing VOC.

(23) PETROLEUM FACILITY is any facility primarily engaged in the production, refining, storage, transfer or distribution of crude petroleum or petroleum products as defined in the Standard Industrial Classification for crude petroleum and natural gas (SIC code 1311), petroleum refining (SIC

code 2911), petroleum bulk stations and terminals (SIC code 5171), or other related industries (e.g., SIC codes 4226, 4612, 4613, 4923 and 5541).

(24) POLE FLOAT is a device located inside a guidepole that floats on the surface of the stored liquid, and is used to indicate the liquid level inside the tank.

(25) POLE SLEEVE is a device that extends from either the cover or the rim of an opening in a floating roof deck to the outer surface of a pole that passes through the opening.

(26) POLE WIPER is a seal that extends from either the cover or the rim of an opening in a floating roof deck to the outer surface of a pole that passes through the opening.

(27) PRESSURE-VACUUM VENT is a vent that is used to minimize tank emissions due to breathing effects.

(28) PRIMARY SEAL is a seal mounted below a secondary seal of a rim seal system that consists of two seals. A primary seal, which is in contact with the floating roof tank shell, can be either mechanical shoe, resilient filled, or wiper type.

(29) RESILIENT FILLED PRIMARY SEAL is an envelope filled with resilient foam (non-metallic polyurethane) mounted at the rim of the floating roof that makes contact with the shell. A resilient filled nonmetallic primary seal can be liquid-mounted or vapor-mounted.

(30) RIM MOUNTED SECONDARY SEAL is a secondary seal mounted on the rim of the floating roof of a storage tank. Rim mounted secondary seals are effective at reducing losses from the primary seal fabric.

(31) RIM SEAL SYSTEM is a closure device between the shell of the storage tank and the floating roof edge. A rim seal system may consist of two seals, one above the other. The lower seal is referred to as the primary seal and the upper seal is referred to as the secondary seal.

(32) RIM VENT is a device consisting of a weighted pallet that rests on a valve seat. Rim vents are used to release any excess pressure or vacuum present in the vapor pocket between the seal and the rim area of a floating roof tank.

(33) ROOF DRAIN is a drain on the roof of a floating roof tank that is used to remove rainwater from the floating roof. There are two types of roof drains. A closed roof drain removes the rainwater from the surface of the roof through a flexible hose through the stored liquid prior to exiting the tank. With a closed roof drain, the rainwater does not come in contact with the

liquid stored in the tank. An open roof drain is any drain other than the closed roof drain. An open roof drain is typically used only during an emergency.

(34) ROOF LEG is a device that holds the floating roof at a predetermined distance from the tank bottom to allow for tank cleaning or repair. There are two types of roof legs, adjustable or fixed. Fixed legs are attached to the floating roof or hangers suspended from the roof, whereas adjustable legs pass through a well or sleeve, and penetrate the roof.

(35) ROOF OPENING is any opening through a floating roof of a storage tank for any roof fitting including but not limited to access hatch, fixed roof support column and well, gauge float, gauge hatch, sample port, guidepole, ladder and well, rim vent, roof drain, roof leg, and vacuum breaker, and excluding rim seal system.

(36) SECONDARY SEAL is a seal mounted above the primary seal of a rim seal system that consists of two seals. Secondary seals can be shoe mounted or rim-mounted.

(37) SHOE MOUNTED SECONDARY SEAL is a secondary seal mounted on the primary mechanical shoe. Shoe mounted secondary seals are effective at reducing vapor losses from the gaps between the shoe and the tank shell.

(38) SLOTTED GUIDEPOLE is a guidepole that has slots or holes through the wall of the guidepole. The slots or holes allow the stored liquid to flow into the pole at liquid levels above the lowest operating level.

(38) STORAGE TANK is a stationary aboveground container that has capacity equal to or greater than 75,000 liters (19,815 gallons) and is used to store organic liquids with a true vapor pressure greater than 5 mm Hg (0.1 psi) absolute under actual storage conditions.

(40) TRUE VAPOR PRESSURE is the vapor pressure of a liquid at actual storage conditions.

(41) VACUUM BREAKER is a device used to equalize the pressure of the vapor space across the deck as the floating roof is either being landed on or floated off its legs. A vacuum breaker consists of a well with a cover. Attached to the underside of the cover is a guided leg long enough to contact the tank bottom as the floating roof is being landed. When in contact with the tank bottom, the guided leg mechanically lifts the cover off the well.

(42) VAPOR MOUNTED PRIMARY SEAL is a primary seal that does not come in contact with the liquid in the annular space between the tank shell and the floating roof.

(43) VAPOR TIGHT CONDITION is a condition that exists when the reading on a portable hydrocarbon analyzer is less than 500 parts per million (ppm), expressed as methane, above background, measured using EPA Reference Method 21.

(44) VISIBLE GAP is a gap of more than 1/8 inch between any gasket or seal and the opening that it is intended to seal. Visible gap for primary and secondary seals is a gap that does not meet the requirements specified in subdivision (d).

(45) VOLATILE ORGANIC COMPOUNDS (VOC) as defined in Rule 102.

(46) WASTE STREAM TANK is a storage tank containing at least 75% water by volume, and some liquid waste stream generated in a manner which contains petroleum liquid, emulsified oil, VOC or other hydrocarbons. For the purpose of this rule, waste stream tanks include waste water tanks and recovered oil (or slop oil) tanks.

(47) WIPER PRIMARY SEAL is a continuous annular blade of flexible material (e.g. rubber, urethane, or foam filled) fastened to a mounting bracket on the deck perimeter that spans the annular rim space and contacts the tank shell. A wiper seal system may consist of a single primary seal, or dual (multiple) seals where one seal is mounted above the other.

(d) Requirements

(1) External Floating Roof Tanks

(A) No later than July 1, 2003, the operator of an external floating roof tank containing organic liquids having true vapor pressure of less than 3 psia at any petroleum facility with annual VOC emissions exceeding 40,000 lbs (20 tons) for emission inventory year 2000 shall:

(i) Equip each access hatch and gauge float well with a cover that is gasketed and bolted. The cover shall be closed at all times, with no visible gaps, except when the hatch or well must be opened for access.

(ii) Equip each gauge hatch/sample well with a cover that is gasketed. The cover shall be closed at all times, with no

visible gaps, except when the hatch or well must be opened for access.

(iii) Gasket or cover each adjustable roof leg with a VOC impervious sock at all times when the roof is floating.

(iv) Gasket each rim vent. Rim vents shall be closed at all times, with no visible gaps, when the roof is floating; and shall be set to open only when the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(v) Gasket each vacuum breaker. Vacuum breakers shall be closed at all times, with no visible gaps, when the roof is floating; and shall be set to open only when the roof is being floated off or is being landed on the roof leg supports.

(vi) Equip each open floating roof drain with a slotted membrane fabric cover or other device with an equivalent control efficiency that covers at least 90 percent of the area of the opening.

(vii) Equip each unslotted guidepole well with a gasketed sliding cover and a flexible fabric sleeve or wiper.

(viii) Equip each unslotted guidepole with a gasketed cover at the end of the pole. The cover shall be closed at all times, with no visible gaps, except when gauging or sampling.

(ix) Equip each slotted guidepole with the following combination of components:

(A) A gasketed cover, a pole wiper, and a pole float with a wiper or seal; or

(B) A gasketed cover, a pole wiper, and a pole sleeve that shall be extended into the stored liquid; or

(C) A gasketed cover, a pole wiper, a pole sleeve that shall be extended into the stored liquid, and a flexible enclosure system.

(x) Maintain the pole float in a condition such that it floats within the guidepole at all times, except when it must be removed for sampling or when the tank is empty. The wiper or seal of the pole float shall be at or above the height of the pole wiper.

(xi) An operator that equips the slotted guidepole with a flexible enclosure system shall ensure that the flexible enclosure system:

(A) Completely encloses the slotted guidepole;

(B) Is free of holes, tears, slots, or rips; and

(C) Is double-clamped tightly at the top of the guidepole and secured to the tank roof with no visible gaps.

(xii) Cover each slotted guidepole opening with a gasketed cover at all times, with no visible gaps, except when the cover must be opened for access.

(xiii) Except for vacuum breakers and rim vents, ensure that each opening in the external floating roof shall provide a projection below the liquid surface.

(xiv) Except for vacuum breakers, rim vents, roof drains, and leg sleeves, equip all other openings in the roof with a gasketed cover or seal which is closed at all times, with no visible gaps, except when the cover or seal must be opened for access.

(B) No later than July 1, 2003, the operator of an external floating roof tank containing organic liquids having true vapor pressure of less than 3 psia at any petroleum facility with annual VOC emissions exceeding 40,000 lbs (20 tons) for emission inventory year 2000 shall equip the tank with a rim seal system meeting the following requirements:

(i) The primary seal shall be a mechanical shoe or liquid mounted.

(ii) The secondary seal shall be rim mounted and shall not be attached to the primary seal.

(iii) Gaps between the tank shell and the primary seal shall not exceed 1.3 centimeters (1/2 inch) for a cumulative length of 30 percent of the circumference of the tank, and 0.32 centimeter (1/8 inch) for 60 percent of the circumference of the tank. No gap between the tank shell and the primary seal shall exceed 3.8 centimeters (1-1/2 inches). No continuous gap between the tank shell and the primary seal greater than

0.32 centimeter (1/8 inch) shall exceed 10 percent of the circumference of the tank.

(iv) Gaps between the tank shell and the secondary seal shall not exceed 0.32 centimeter (1/8 inch) for a cumulative length of 95 percent of the circumference of the tank. No gap between the tank shell and the secondary seal shall exceed 1.3 centimeters (1/2 inch).

(v) Mechanical shoe primary seals shall be installed so that one end of the shoe extends into the stored organic liquid and the other end extends a minimum vertical distance of 61 centimeters (24 inches) above the stored organic liquid surface.

(vi) The geometry of the shoe shall be such that the maximum gap between the shoe and the tank shell is no greater than double the gap allowed by the seal gap criteria specified in clause (d)(1)(B)(iii) for a length of at least 46 centimeters (18 inches) in the vertical plane above the liquid surface.

(vii) The primary seal envelope shall be made available for unobstructed inspection by the Executive Officer along its circumference. In the case of riveted tanks with resilient filled primary seals, at least eight such locations shall be made available; for all other types of seals, at least four such locations shall be made available. If the Executive Officer deems it necessary, further unobstructed inspection of the primary seal may be required to determine the seal's condition along its entire circumference.

(viii) The secondary seal shall be installed in a way that permits the Executive Officer to insert probes up to 3.8 centimeters (1-1/2 inches) in width to measure gaps in the primary seal.

(ix) There shall be no holes, tears or openings in the secondary seal or in the primary seal envelope surrounding the annular vapor space enclosed by the roof edge, seal fabric, and secondary seal.

(x) Except during the preventive maintenance, repair, or inspection periods specified in subdivision (f) and (g) of this rule that do not exceed 72 hours with prior notification to the

Executive Officer, both the primary seal and the secondary seal shall cover the annular space between the external floating roof and the wall of the storage tank in a continuous fashion, with no visible gaps.

(xi) The operator shall use a rim seal system that is identified on the current list of seals approved by the Executive Officer. The operator requesting the use of an alternative rim seal system shall submit a written application including emission test results and analysis demonstrating that the alternative rim seal system is better in performance and has a rim seal loss emission factor that is less than or equal to the current design.

(C) No later than July 1, 2003, in lieu of complying with the requirement of no visible gap in subparagraph (d)(1)(A), the operator of an external floating roof tank shall maintain all roof openings in a vapor tight condition at all times except during preventive maintenance, repair, or inspection periods specified in subdivision (f) and (g) of this rule.

(2) Domed External Floating Roof Tanks

(A) Phase I: The operator at any petroleum facility with annual VOC emissions exceeding 40,000 lbs (20 tons) for emission inventory year 2000 shall install domed roofs on all external floating roof tanks that contain organic liquids having true vapor pressure greater than or equal to 3 psia as reported in the Annual Emissions Report pursuant to Rule 301 - Permit Fees for the emission inventory year 2000 according to the following schedule:

(i) At least 1/3 of the tanks subject to this provision by January 1, 2004;

(ii) At least 2/3 of the tanks subject to this provision by January 1, 2006;

(iii) All tanks subject to this provision by January 1, 2008.

(iv) As an alternative to clauses (i) through (iii) above, an operator may submit a compliance plan demonstrating that 75% of the tanks subject to this provision have domes installed by December 31, 2006, and 100% of such tanks shall have domes installed by December 31, 2008. The

Executive Officer shall approve any plan which convincingly demonstrates compliance and may impose conditions of approval necessary to assure compliance. The operator shall comply with all provisions and conditions of an approved plan.

(B) Phase II: For additional external floating roof tanks that are not identified under Phase I but contain organic liquids having true vapor pressure greater than or equal to 3 psia as reported in the Annual Emissions Report pursuant to Rule 301 - Permit Fees for any emission inventory year after 2000, the operator who is subject to Phase I shall comply with the requirements specified in subparagraph (d)(2)(A) no later than two years after becoming subject to the rule. In those cases where the two-year period falls within Phase I, the operator shall complete the installation of the domes on all Phase II tanks by no later than January 1, 2010, or December 31, 2010 if choosing to comply with the alternative in clause (d)(2)(A)(iv). The applicability and compliance verification of waste stream tanks and recovered oil tanks shall be based on a monthly average true vapor pressure greater than or equal to 3 psia. The monthly average true vapor pressure of waste stream shall be determined based on at least one representative sample or multiple samples collected from the top surface layer that is no deeper than 6 inches at a frequency committed to in writing by the affected facility no later than January 1, 2003. The facility shall monitor and keep records of sampling results and monthly average true vapor pressures on site and make them available to the Executive Officer upon request.

(C) In lieu of complying with the requirements in subparagraph (d)(2)(B)~~,~~:

(i) ~~the~~ The operator who is subject to Phase I shall accept permit conditions to limit the true vapor pressure of the organic liquids stored in ~~the~~ a tank~~s~~ to lower than 3 psia by the end of Phase I.

(ii) The operator of a waste water tank where the installation of a domed roof may create a hazard due to the accumulation of pyrophoric material, as confirmed by the Executive

Officer, who is subject to Phase II shall accept permit conditions to limit the true vapor pressure of the organic liquids stored in a tank to lower than 3 psia.

(D) The operator of a domed external floating roof tank shall equip and maintain all roof openings in accordance with the specifications listed in subparagraph (d)(1)(A) by the applicable compliance date in subparagraph (d)(2)(A) and (d)(2)(B). Each slotted guidepole shall be equipped with the following combination of components:

(i) A gasketed cover, a pole wiper, a pole float with a wiper or seal; or

(ii) A gasketed cover, a pole wiper, and a pole sleeve that shall be extended into the stored liquid; or

(iii) A gasketed cover, a pole wiper, and a flexible enclosure system.

(E) The operator of a domed external floating roof tank shall equip the tank with a rim seal system consisting of a primary and a secondary seal meeting the specifications listed in subparagraph (d)(1)(B) by the applicable compliance date in subparagraphs (d)(2)(A) and (d)(2)(B).

(F) The operator shall ensure that the concentration of organic vapor in the vapor space above a domed external floating roof shall not exceed 30 percent of its lower explosive limit (LEL) by the applicable compliance date in subparagraph (d)(2)(A) and (d)(2)(B).

(G) The operator shall submit to the Executive Officer an annual status report including at a minimum all of the following:

(i) A list of all external floating roof tanks subject to the requirement in subparagraphs (d)(2)(A) and (d)(2)(B);

(ii) A general description of each tank including information such as tank identification, District permit number or District device identification, tank type, tank capacity, type of liquid stored, and if applicable, number of representative samples, frequency of sampling, averaging method used to determine the monthly average true vapor pressure of waste stream or recovered oil tanks, and the results.

(iii) A compliance status for each tank; and

(iv) An estimated compliance date for each external floating roof tank that is not yet in compliance with the requirement in subparagraph (d)(2)(A) and (d)(2)(B).

(3) Internal Floating Roof Tanks

When an internal floating roof tank is scheduled for emptying and degassing, but no later than January 1, 2007, the operator of an internal floating roof tank at any petroleum facility with annual VOC emissions exceeding 40,000 lbs (20 tons) for emission inventory year 2000 shall:

(A) Equip each fixed roof support column and well with a sliding cover that is gasketed or with flexible fabric sleeves;

(B) Equip each ladder well with a gasketed cover. The cover shall be closed at all times, with no visible gaps, except when the well must be opened for access;

(C) Equip and maintain other roof openings according to the specifications listed in subparagraph (d)(1)(A) or (d)(1)(C). Each slotted guidepole shall be equipped with the following combination of components:

(i) A gasketed cover, a pole wiper, a pole float with a wiper or seal; or

(ii) A gasketed cover, a pole wiper, and a pole sleeve that shall be extended into the stored liquid; or

(iii) A gasketed cover, a pole wiper, and a flexible enclosure system.

(D) Equip the tank with a rim seal system consisting of either a primary seal, or a primary and a secondary seal meeting the specifications listed in subparagraph (d)(1)(B), with the exception of a mechanical shoe primary seal which shall have one end extend a minimum vertical distance of 15 centimeters (6 inches) above the liquid surface and the other end extend into the liquid a minimum of 10 centimeters (4 inches); and

(E) Ensure that the concentration of organic vapor in the vapor space above the internal floating roof shall not exceed 50 percent of its lower explosive limit (LEL) for those installed prior to June 1, 1984 and 30 percent of its LEL for those installed after June 1, 1984.

(4) Fixed Roof Tanks

(A) No later than January 1, 2007, the operator of a fixed roof tank at any petroleum facility with annual VOC emissions exceeding 40,000 lbs (20 tons) for emission inventory year 2000 shall equip each fixed roof tank containing organic liquids with true vapor pressure greater than 0.1 psia with an emission control system meeting the following requirements:

(i) The tank emissions are vented to an emission control system with an overall control efficiency of at least 95% by weight or the tank emissions are vented to a fuel gas system.

(ii) Any tank gauging or sampling device on a tank shall be equipped with a vapor tight cover which shall be closed at all times, with no visible gaps, except during gauging or sampling. The roof of such tank shall be properly maintained in a vapor tight condition with no holes, tears or uncovered opening.

(iii) All openings on the roof shall be properly installed and maintained in a vapor tight condition at all times.

(iv) The operator shall equip each fixed roof tank with pressure-vacuum vents that shall be set to the lesser of 10% below the maximum allowable working pressure of the roof or 0.5 psig.

(v) The operator shall maintain pressure-vacuum vents in a vapor tight condition at all times except when the operating pressure of the fixed roof tank exceeds the manufacturer's recommended setting.

(B) In lieu of complying with the requirement in subparagraph (d)(4)(A), the operator may choose to convert the fixed roof tank to an external floating roof tank or an internal floating roof tank meeting the requirements specified in paragraph (d)(1) or (d)(3).

(5) The operator of any petroleum facility with annual VOC emissions exceeding 40,000 lbs (20 tons) for any emission inventory year subsequent to 2000 reporting pursuant to Rule 301 – Permit Fees shall:

(A) Comply with the requirements for external floating roof tanks specified in paragraph (d)(1) no later than one year after becoming subject to this rule.

(B) Comply with the requirements for domed external floating roof tanks specified in paragraph (d)(2) no later than six years after becoming subject to this rule. Any external floating roof tank that later becomes subject to this requirement based on any subsequent emission inventory year, shall comply with the requirements in paragraph (d)(2) no later than two years after becoming subject to this rule.

(C) Comply with the requirements for internal floating roof tanks specified in paragraph (d)(3) when the tanks are scheduled for emptying and degassing, but no later than five years after becoming subject to this rule.

(D) Comply with the requirements for fixed roof tanks specified in paragraph (d)(4) no later than five years after becoming subject to this rule.

(6) The operator of all tanks for which a permit to construct and operate has been issued by the Executive Officer on and after January 1, 2002 for new construction shall comply with the requirements of subdivision (d).

(e) Identification Requirements

(1) The operator shall permanently identify all tanks subject to the requirements of this rule by a visible sign that includes the tank number, on the outside wall of the tank for inventory, inspection and record keeping purposes.

(2) The operator shall notify the Executive Officer of any change(s) in tank identification.

(f) Monitoring Requirements

(1) External Floating Roof Tanks

To demonstrate compliance with paragraph (d)(1), the operator shall have a certified person conduct the following in accordance with the procedures and guidelines specified in Attachment A:

(A) Conduct an EPA Method 21 inspection or measure gaps of all roof openings on a semiannual basis and each time the tank is emptied and degassed.

(B) Perform complete gap measurements of the rim seal system on a semiannual basis and each time the tank is emptied and degassed.

(2) Domed External Floating Roof Tanks and Internal Floating Roof Tanks

To demonstrate compliance with paragraph (d)(2) and (d)(3), the operator shall have a certified person conduct the following in accordance with the procedures and guidelines specified in Attachment A:

(A) Visually inspect the rim seal system and roof openings and use an explosimeter to measure the lower explosive limit (LEL) on a semiannual basis.

(B) Perform complete gap measurements of the rim seal system each time the tank is emptied and degassed but no less than once every ten years.

(C) Perform complete gap measurements of all roof openings each time the tank is emptied and degassed but no less than once every ten years.

(3) Fixed Roof Tanks

(A) No later than 180 days after the effective date of the requirements, the operator of a facility who elects to install an emission control system to comply with the requirements in clause (d)(4)(A)(i) shall conduct an initial performance testing to determine the overall efficiency of the emission control system and submit a complete test report to the Executive Officer. The performance testing of the emission control system shall be repeated when the system is modified or an operating parameter is changed in a manner that affects the capture or control efficiency. In such case, the performance test shall be conducted and the test report submitted to the Executive Officer within 180 days after the modification. Subsequent to the initial performance test, the operator shall conduct annual performance tests, and shall monitor and record applicable operating parameters on a weekly basis to ensure that the emission control system is achieving 95% overall control efficiency.

(B) To demonstrate compliance with clause (d)(4)(A)(ii), (d)(4)(A)(iii) and (d)(4)(A)(v), the operator shall have a certified person conduct EPA Method 21 measurements on a quarterly basis.

(C) To demonstrate compliance with clause (d)(4)(A)(iv), the operator shall keep engineering data sheet for pressure-vacuum vents installed after January 1, 2002.

(g) Maintenance Requirements

The operator shall repair, or replace any piping, valves, vents, seals, gaskets, or covers of roof openings that are found to have defects or visible gaps, or are not vapor tight, and do not meet all the requirements of this rule before filling or refilling an emptied and degassed storage tank, or within 72 hours after an inspection, including one conducted by the operator as specified in subdivision (f), determines that the equipment is not operating in compliance.

(h) Record Keeping and Reporting Requirements

(1) During the inspections specified subdivision (f), the operator shall keep records of all findings, including but not limited to the readings measured according to EPA Reference Test Method 21.

(2) The operator shall record all inspections of primary, secondary seals, a flexible enclosure system (if any), and roof openings on compliance inspection report forms approved by the Executive Officer as described in Attachment A.

(3) The operator shall submit all inspection reports and documents to the Executive Officer semiannually within five working days of completion of the inspections specified in paragraph (f)(1) and (f)(2); and on January 31 and July 31, respectively, upon the completion of two consecutive quarterly inspections conducted as specified in subparagraph (f)(3)(B).

(4) If the operator determines that a tank is in violation of the requirements of this rule during the inspections specified subdivision (f), the operator shall submit a written report to the Executive Officer within 120 hours of the determination of non-compliance, indicating corrective actions taken to achieve compliance.

(5) The operator who elects to install or modify an emission control system to comply with the requirement in clause (d)(4)(A)(i) shall conduct an initial performance test as described in clause (f)(3)(A) and submit a complete test report to the Executive Officer no later than 180 days after the effective date of the requirement for new installation; or 180 days after the modification. Subsequent annual performance test and test report shall be submitted annually within 60 days after the end of each emission inventory year.

(6) The operator shall keep all monitoring, inspection, maintenance, and repair records at the facility for a period of five years and shall make the records available to the Executive Officer upon request.

(i) Test Methods and Procedures

The following test methods and procedures shall be used to determine compliance with this rule. Alternative test methods may be used if they are determined to be equivalent and approved in writing by the Executive Officer, the California Air Resources Board, and the U.S. Environmental Protection Agency.

(1) Measurements of gaseous volatile organic compound leaks shall be conducted according to EPA Reference Method 21 using an appropriate analyzer calibrated with methane.

(2) Organic liquids that are stored at ambient temperatures with a true vapor pressure of greater than 5 mm Hg (0.1 psi) absolute under actual storage conditions shall be determined as those with a flash point of less than 100 °F as determined by ASTM Method D-93.

(3) Organic liquids that are stored at above ambient temperatures with a true vapor pressure greater than 5 mm Hg (0.1 psi) absolute under actual storage conditions shall be determined as those whose volume percent evaporated is greater than ten percent at an adjusted temperature T_{Adj} as determined by ASTM Method D-86 of:

$$T_{Adj} = 300\ ^oF + T_l - T_a$$

Where:

T_l = Liquid Storage Temperature (^oF)

T_a = Ambient Temperature (^oF) = 70 ^oF

(4) Organic liquids with a true vapor pressure of greater than or equal to 3 psia shall be determined by ASTM Method D-323 for Reid vapor pressure and converted to true vapor pressure using applicable nomographs in EPA AP-42 or District and EPA approved nomographs. The actual storage temperature used for determining true vapor pressure shall be 70 degrees Fahrenheit for organic liquids that are stored at ambient temperatures, and actual storage temperature for organic liquids that are stored at above ambient temperatures.

(5) Control efficiency of an emission control system, on a mass emissions basis, and the VOC concentrations in the exhaust gases shall be determined by U.S. EPA Test Methods 25, 25A; District Method 25.1 - Determination of Total Gaseous Non-Methane Organic Emissions as Carbon; or District Method 25.3 – Determination of Low Concentration Non-Methane Non-

Ethane Organic Compound Emissions from Clean Fueled Combustion Sources, as applicable.

(6) When more than one test method or set of test methods are specified for any testing, the application of these methods to a specific set of test conditions is subject to approval by the Executive Officer. In addition, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(7) The sampling, analysis, and reporting shall be conducted by a laboratory that has been approved under the District Laboratory Approval Program (LAP) for the cited District reference test methods, where LAP approval is available. For District reference test methods for which no LAP program is available, the LAP approval requirement shall become effective one year after the date that the LAP program becomes available for that District reference test method.

(8) Tests to determine emission factors for an alternative control device for rim seal or deck opening shall accurately simulate conditions under which the device will operate, such as wind, temperature, and barometric pressure. Test methods that can be used to perform the testing required in this paragraph include, but are not limited to, the following methods, which shall be performed by a laboratory certified by American Petroleum Institute (API):

(A) API Manual of Petroleum Measurement Standards, Chapter 19, Section 3, Part A, Wind Tunnel Test Method for the Measurement of Deck-Fitting Loss Factors for External Floating-Roof Tanks;

(B) API Manual of Petroleum Measurement Standards, Chapter 19, Section 3, Part B, Air Concentration Test Method for the Measurement of Rim Seal Loss Factors for Floating-Roof Tanks.

(C) API Manual of Petroleum Measurement Standards, Chapter 19, Section 3, Part E; Weight Loss Test Method for the Measurement of Deck-Fitting Loss Factors for Internal Floating-Roof Tanks.

(j) Exemptions

(1) The provisions of this rule shall not apply to pressurized storage tanks designed to operate in excess of 15 pounds per square inch gauge (psig) without any emissions to the atmosphere except under emergency conditions.

(2) Domed external floating roof tanks installed prior to January 1, 2002 shall be exempt from the requirements of subparagraph (d)(2)(D) and (d)(2)(E) for secondary seals.

(3) Any facility with a facility emission cap equal to or less than 40,000 pounds (20 tons) per year of VOC shall be exempt from the requirements of this rule.

(4) Portable Baker tanks containing organic liquids having true vapor pressures from 0.1 psia to 0.5 psia equipped with carbon canisters to reduce the emissions from the storage tanks to less than 500 ppm outlet concentration shall be exempt from the performance testing requirements specified in clause (d)(4)(A)(i) and subparagraph (f)(3)(A) provided that the operator conducts EPA Reference Method 21 measurement weekly to ensure that the system achieves the emission standard of 500 ppm.

(5) External floating roof tanks having permit conditions that limit the true vapor pressure of the organic liquids stored in the tanks to lower than 3 psia shall be exempt from the requirements of paragraph (d)(2).

(6) External floating roof tanks subject to clause (d)(1)(A)(i) shall be exempt from this requirement until the next time the tank is emptied and degassed, provided that the operator has demonstrated to the satisfaction of the Executive Officer that in order to properly bolt, the covers for access hatches and gauge float wells must be welded. The operator shall use equivalent means, such as clamping, to secure the covers during the interim period.

(7) External floating roof tanks permitted to contain more than 97% by volume crude oil shall be exempt from the doming requirements of paragraph (d)(2)(A) and (d)(2)(B) but shall comply with other remaining applicable requirements of this rule.

ATTACHMENT A

INSPECTION PROCEDURES AND COMPLIANCE REPORT FORMS

Equipment Needed:

Organic Vapor Analyzer (OVA) calibrated with methane in accordance with EPA Test Method 21, explosimeter calibrated with methane (for internal floating roof tanks), liquid resistant measuring tape or device, tank probe (to measure gaps in tank seals - 1/8 inch, 1/2 inch, 1-1/2 inch), flashlight.

Inspection Procedures:

1. The findings of all tank self-inspections, whether completed or not, shall be recorded on the Rule 1178 Compliance Report forms prescribed by the Executive Officer and submitted to the District's Refinery Section in accordance with the rule's requirements. If an inspection is stopped before completion, indicate the reason for this action in the Comments section of the compliance report form.
2. During the compliance inspection, the person(s) conducting the inspection must have a copy of the Permit to Operate or Permit to Construct pertinent to the tank being inspected. Any discrepancies between the permit equipment description and the existing tank or the permit conditions and the actual operating conditions of the tank as verified during inspection must be recorded in the Comments section of the compliance report form.
3. Inspect the ground level periphery of each tank for possible leaks in the tank shell. Complete the tank information section (D) on the report.
4. For external floating roof tanks:
    - o From the platform, conduct an overall visual inspection of the roof and check for obvious permit or rule violations. Record the information as shown under section F of the compliance report form.
    - o During visual inspection of the roof, check for unsealed roof legs, open hatches, open emergency roof drains or vacuum breakers and record the findings on the report accordingly. Indicate presence of any tears in the fabric of both seals.
    - o Conduct an inspection of the roof fittings for vapor tight condition and record any leaks above 500 ppm in the fugitive emissions tank report OR conduct an inspection of the roof fittings using the 1/8" probes.

- o Conduct an inspection of the entire secondary seal using the 1/8" and 1/2" probes. Record the gap data in section F(4) of the report.
- o Conduct an inspection of the entire primary seal using the 1/8", 1/2", and 1-1/2" probes. Inspect the primary seal by holding back the secondary seal. Record the gap data in section F(5) of the report.
- o Record all cumulative gaps between 1/8 inch and 1/2 inch; between 1/2 inch and 1-1/2 inch; and in excess of 1-1/2 inches, for both primary and secondary seals in section G of the report. Secondary seal gaps greater than 1/2 inch should be measured for length and width, and recorded in Comments under section (J) of the report.
- o For slotted guidepoles with a flexible enclosure system, conduct a visual inspection of the flexible enclosure system. Record any holes, tears, slots, or rips in the flexible enclosure system and any tightening or replacement of clamps at the top and the bottom of the flexible enclosure system pursuant to clause (d)(1)(A)(xi).

5. For internal floating roof and domed tanks:
   - o Using an explosimeter, measure the concentration of the vapor space above the floating roof in terms of lower explosive limit (LEL), and record the reading in section (E) of the report.
   - o Conduct a visual inspection of the roof openings and the secondary seal, if applicable, and record findings on the report.
   - o Conduct gap measurements of the rim seal system and roof openings each time the tank is emptied and degassed but no less than once every ten years.
   - o Conduct a visual inspection of the slotted guidepole flexible enclosure system.
6. For fixed roof tanks:
   - o Conduct an inspection of the pressure relief valves, piping, valves and fittings located on the roof for vapor tight condition and record any readings in excess of 500 ppm in the fugitive emissions tank report.
7. Complete all necessary calculations and record all required data accordingly on the report.

(Amended November 6, 2020)

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
RULE 1178 COMPLIANCE REPORT

PLEASE COMPLETE FORM LEGIBLY IN BLACK INK

SCAQMD ID No.: _____

Tank No. _____ SCAQMD Permit No. _____ Inspection Date _____ Time _____

Is This a Follow-up Inspection? No ☐ Yes ☐ If yes, Date of Previous Inspection _____

A. COMPANY INFORMATION:

Company Name _____

Location Address _____ City _____ Zip _____

Mailing Address _____ City _____ Zip _____

Contact Person _____ Title _____

Phone _____ E-mail _____

B. INSPECTION CONDUCTED BY:

Name _____ Title _____

Company Name _____ Phone _____

Mailing Address _____ City _____ Zip _____

C. TANK INFORMATION:

Capacity _____ (bbls) Installation Date _____ Tank Diameter _____ (ft) Tank Height _____ (ft)

Product Type _____ Product RVP _____

Type of Tank: Riveted ☐ Welded ☐ Other ☐ (describe) _____

Color of Shell _____ Color of Roof _____

Roof Type: Pontoon ☐ Double Deck ☐ Other(describe) _____

External floating roof ☐ Internal floating roof or domed tank ☐ Flexible enclosure system ☐

D. GROUND LEVEL INSPECTION:

1) Product Temperature _____ ° F 2) Product level _____ (ft)

3) List type and location of leaks found in tank shell.

_____

4) List any discrepancies between the existing equipment and the equipment description on the Permit.

_____

5) Is tank in compliance with Permit conditions? No ☐ Yes ☐ If no, explain _____

_____

_____

E. INTERNAL FLOATING ROOF OR DOMED TANK:

1) Check vapor space between floating roof and fixed roof with explosimeter. _____ % LEL

2) Conduct visual inspection of roofs, secondary seals, and slotted guidepole flexible enclosure system, if applicable.

3) Are all roof openings covered? No ☐ Yes ☐ If no, explain in Comments section (J) and proceed to part (H)(6).

F. EXTERNAL FLOATING ROOF TANK (or DOMED TANK AND INTERNAL FLOATING ROOF TANK when needed)

1) On the diagram (below) indicate the location of the ladder, roof drain(s), anti-rotation device(s), platform, gauge well, and vents or other appurtenances. *Note information in relation to North (to the top of the worksheet).*

2) Describe any uncovered openings found on the roof in the Comments section (J). (Refer to Rule 463(a)(1)(F)):

3) Identify any tears in the seal fabric. Describe and indicate on diagram (below):

4) Secondary Seal Inspection

a) Type of Secondary Seal: _____

b) Does 1/2" probe drop past seal? No ☐ Yes ☐ if yes, measure length(s) and show on diagram

c) Does 1/8" probe drop past seal? No ☐ Yes ☐ if yes, measure length(s) and show on diagram.

d) Record dimensions of gap for gaps > 1/8" _____ >1/2" _____

NOTE: Record the actual width and cumulative length of gaps in feet and inches. (Do not include gaps > 1/2" in 1/8" measurements)

5) Primary Seal Inspection

a) Type of Primary Seal: ☐ Shoe; ☐ Tube; ☐ Other _____

b) (shoe seal) does 1-1/2" probe drop past seal? No ☐ Yes ☐; if yes, measure length(s) and show on diagram.

c) (shoe seal) does 1/2" probe drop past seal? No ☐; Yes ☐; if yes, measure length(s) and show on diagram.

d) (tube seal) does 1/2" probe drop past seal? No ☐ Yes ☐ if yes, measure length(s) and show on diagram.

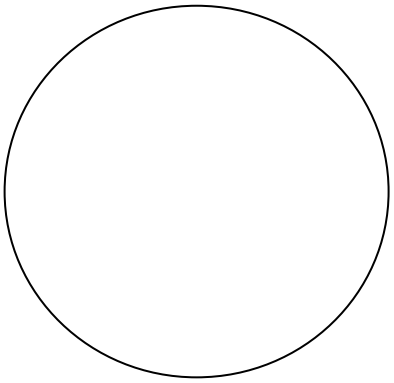
e) (all seal types) does 1/8" probe drop past seal? No ☐ Yes ☐ if yes, measure (length(s) and show on diagram.

f) Record dimensions of gaps for gaps >1/8" _____ > 1/2" _____

>1-1/2" _____ *NOTE: Record the actual width and cumulative length of gaps in feet and inches. (Do not include gaps > 1/2" in 1/8" measurements, or gaps > 1-1/2" in 1/2" measurements)*

6) Deck Fitting Inspection
(circle one) does 1/8" probe drop past gasket seal or pass Method 21? No ☐ Yes ☐ if yes, identify

NOTE: Show defects using symbols. Show seal gaps and lengths.



LEGEND:

Equipment:

	Antirotational device
	Gauge well
⊤	Leg stand
	Roof drain
*	Emergency roof drain
∞	Vacuum breaker
σ	Vent
	Platform & ladder

Defects:

	Leg top
╫	Leg pin
	Open hatch
\/\	Torn seal
|-P-|	Primary seal gap
|-S-|	Secondary seal gap

Tank No. _____ SCAQMD Permit No. _____

7) Flexible Enclosure System Inspection

Does flexible enclosure system have any holes, tears, slots, or rips? If yes, identify location and approximate size:	No ☐	Yes ☐
Does the flexible enclosure system have double-clamps at the top that are fitted tightly to prevent fugitive emissions from being released to the outside?	No ☐	Yes ☐
Is the flexible enclosure system properly secured to the roof of the tank, with no visible gaps to prevent fugitive emissions from being released to the outside?	No ☐	Yes ☐

IF INTERNAL FLOATING ROOF OR DOMED TANK, PROCEED TO PART H(6) WHEN APPROPRIATE:

G. CALCULATIONS - complete all applicable portions of the following:

Record dimensions of indicated gaps [from F(4)(d), F(5)(b), and F(5)(f)]. Record in feet and inches.

Gaps in primary seal between 1/8 and 1/2 inch: _____

Gaps in primary seal between 1/2 and 1-1/2 inch: _____

Gaps in primary seal greater than 1-1/2 inches: _____

Gaps in secondary seal between 1/8 and 1/2 inch: _____

Gaps in secondary seal greater than 1/2 inch: _____

Multiply diameter (ft) of tank to determine appropriate gap limits:

5% circumference = diameter X 0.157 =	_____	60% circ. = diam. X 1.88 =	_____
10% circumference = diameter X 0.314 =	_____	90% circ. = diam. X 2.83 =	_____
30% circumference = diameter X 0.942 =	_____	95% circ. = diam. X 2.98 =	_____

H. DETERMINE COMPLIANCE STATUS OF TANK:

1)	Were any openings found on the roof?		No ☐	Yes ☐
2)	Were any tears in the seals found:		No ☐	Yes ☐
3)	Is the product level lower than the level at which the roof would be floating?		No ☐	Yes ☐
4)	Secondary Seal:			
		Did 1/2" probe drop between shell and seal?	No ☐	Yes ☐
		Did cumulative 1/8" - 1/2" gap exceed 95% circumference length?	No ☐	Yes ☐
5)	Primary Seal			
	Shoe	Did 1-1/2" probe drop between shell and seal?	No ☐	Yes ☐
		Did cumulative 1/2" - 1-1/2" gap exceed 30% circumference length, and		
		Did cumulative 1/8 - 1/2" gap exceed 60% circumference length?	No ☐	Yes ☐
		Did any <u>single continuous</u> 1/8" - 1-1/2" gap exceed 10% circ. length?	No ☐	Yes ☐
	Tube	Did 1/2" probe drop between shell and seal	No ☐	Yes ☐
		Did cumulative 1/8" - 1/2" gap exceed 95% circumference length?	No ☐	Yes ☐
6)	Internal floating roof (installed before 6/1/84) did LEL exceed 50%		No ☐	Yes ☐
		(installed after 6/1/84) or domed tank did LEL exceed 30%?	No ☐	Yes ☐
7)	Does tank have permit conditions?		No ☐	Yes ☐
		Does tank comply with these conditions?	No ☐	Yes ☐

I. IF INSPECTION WAS TERMINATED PRIOR TO COMPLETION FOR ANY REASON, PLEASE EXPLAIN:

_____

_____

South Coast Air Quality
Management District
21865 East Copley Drive
Diamond Bar, CA 91765
(909) 396-2000

J. COMMENTS:

Use this section to complete answers to above listed items and to describe repairs made to the tank; include date and time repairs were made.

K. ***I(We) certify the foregoing information to be correct and complete to the best of my(our) knowledge.***

Inspection completed by: _____ Date: _____
(Signature) (Certification ID #)

Compliance status by: _____ Date: _____
(Signature) (Certification ID #)

Company Representative: _____ Date: _____
(Signature) (Certification ID #)

SEND COMPLETED REPORT (both sheets) TO:

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 E. Copley Drive
Diamond Bar, CA. 91765 FAX: (909)396 -3341
Attn: Rule 1178 Supervising Inspector

FOR SCAQMD USE ONLY: Date received_____

Reviewed by:_____ Date reviewed_____
(Signature) (Certification ID #)

Tank Status: [ ] in compliance [ ] in violation, Rule(s)_____

Comments:_____

RULE 1178 FUGITIVE EMISSIONS TANK REPORT

Company Information							
Company Name							
Address							
Contact/Phone Number							
SCAQMD ID #				Report Date			
Tank ID	**Type**	**Fitting**	**Date**	**Leak Rate**	**Type of Repair**	**Date**	**Post Repair Leak Rate**

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Staff Report
Proposed Amended Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities

November 2020

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EXECUTIVE OFFICER:

WAYNE NASTRI

BACKGROUND

The Governing Board adopted Rule 1178 – Further Reductions of ~~Fugitive~~ VOC Emissions from Storage Tanks at Petroleum Facilities on December 21, 2001, with the purpose of further reducing emissions of volatile organic compounds (VOCs) from storage seals and fittings on storage tanks at petroleum facilities with annual VOC emissions of more than 40,000 pounds (20 tons). Rule 1178 requires the operator at any petroleum facility with annual VOC emissions exceeding 40,000 lbs (20 tons) for emission inventory year 2000 to have installed domed roofs on all external floating roof tanks that contain organic liquids having true vapor pressure (TVP) greater than or equal to 3 psia as reported in the Annual Emission Report (AER) pursuant to Rule 301 – Permit Fees for the emissions inventory year 2000, no later than December 31, 2008 (Phase I).

For any external floating roof tank that was not required to install a domed roof, but subsequently was determined to contain organic liquids having TVP greater than or equal to 3 psia as reported in the AER pursuant to Rule 301 for any emissions inventory year after 2000, the tank operator would be required to install a domed roof no later than two years after becoming subject to the rule (Phase II). The applicability and compliance verification of waste stream tanks and recovered oil tanks is based on a monthly average TVP greater than or equal to 3 psia.

Rule 1178 contains a limited exemption, where in lieu of installing a domed roof on an external floating roof tank subject to Phase II of the rule, an operator could alternatively apply for a South Coast AQMD permit that would limit the TVP of organic liquids stored in the tank to lower than 3 psia. This limited exemption that allowed an operator of a tank with a monthly average true vapor pressure greater than 3 psia to accept a permit condition limiting the vapor pressure ended with Phase I, on December 31, 2008.

REGULATORY HISTORY FOR RULE 1178

Since its adoption, Rule 1178 has been amended twice. The rule was amended in April 2006 to include a provision that allowed the use of alternatives to a slotted membrane fabric drain cover for an external floating roof, provided that it had the equivalent control efficiency. The amendment also clarified the definition of a mechanical shoe primary seal by requiring the use of VOC-impervious fabric to serve as a seal in the vapor space between the shoe seal and the roof. In addition, the amendment also specified guidelines for the distances which internal floating roof tank seals were allowed to be extended into the liquid and outside the liquid stored.

Rule 1178 was also amended in April 2018, and included a provision that incorporated a flexible enclosure system that encapsulates the entire surface of the slotted guide pole and serves as a VOC emission reduction option as outlined in the 2000 U.S. EPA Storage Tank Emission Reduction Partnership Program (STERPP) Agreement. The amendment made the option available for application in certain floating roof tank configurations, including those where the operator had

chosen to conduct radar depth gauging. The amendment clarified the inspection procedures and entries to compliance report forms to include the flexible enclosure system option.

AFFECTED FACILITIES

Rule 1178 applies to all above ground storage tanks that have capacity equal to or greater than 75,000 liters (19,815 gallons), are used to store organic liquids with a TVP greater than 5 mm Hg (0.1 psi) absolute under actual storage conditions, and are located at any petroleum facility that emits more than 40,000 pounds (20 tons) per year of VOC.

PAR 1178 will affect waste water tanks that were not identified previously under Phase I of the rule but subsequently contain organic liquids with a TVP greater than 3 psia as reported on their AER. Rule 1178 defines a waste stream tank as a storage tank containing at least 75% water by volume and some liquid waste stream generated in a manner which contains petroleum liquid, emulsified oil, VOC, or other hydrocarbons. PAR 1178 provides an option to permit such a tank with a condition to limit the TVP of the organic liquids stored in the tank to lower than 3 psia in lieu of complying with the doming requirements. Staff is aware of only one facility where two tanks may be subject to the proposed amendment.

PUBLIC PROCESS

The development of PAR 1178 was conducted through a public process. A public workshop meeting was held on September 3, 2020 with the comment period closing on September 17, 2020. The purpose of the public workshop was to present the proposed rule to the general public and stakeholders and to receive any comments related to the proposal. During the comment period, staff did not receive any comments from the general public or from affected stakeholders.

SUMMARY OF PROPOSAL

In March 2019, a petroleum refining facility located within the jurisdiction of the South Coast AQMD reported on its 2018 AER the emissions for two external floating roof tanks in waste water storage service. While the underlying TVP values were not reported on the face of the AER, the report utilized a TVP value in excess of 3.0 psia. In a case where compliance verification determines the monthly average TVP is greater than or equal to 3 psia, the operator is required to install a domed roof onto a tank within two years once a tank becomes subject to the rule. A limited exemption provided under Rule 1178 would not apply for a tank that becomes subject to the rule after the end of Phase I (December 31, 2008).

The facility requested relief from the requirement of installing a domed roof due to safety concerns associated with the enclosure of the tanks' roofs. Specifically, the facility reported that tanks that store waste water may contain hydrogen sulfide contaminants which can create pyrophoric

material.[1] A waste water tank, which is a type of waste stream tank, typically stores water generated from the production of oil or the refining process of oil and that contains contaminants including hydrogen sulfide and ammonia. By definition, a pyrophoric material is capable of igniting spontaneously in air.[2] The material can accumulate under a domed roof and possibly lead to a fire or explosion. Due to the safety concerns associated with installing a dome on the roof of an external floating roof tank in waste water service, the facility requested ~~a waiver from the~~ to not be subject to any doming requirement and to instead have the ~~an~~ option to accept a permitted condition to limit the TVP of the organic liquids stored in the waste water tanks to lower than 3 psia, an option that generally expired for any tanks that would become subject to the rule on December 1, 2008.

Staff has reviewed concerns related to the enclosure of external floating roof tanks in waste water service and agrees that there is a potential safety concern. Proposed Amended Rule 1178 will allow the option for an operator to apply for and accept permit conditions to limit the TVP of the organic liquid stored in waste water tanks where the installation of a domed roof may create a hazard due to the accumulation of pyrophoric material. This amendment reinstates the option that generally expired at the end of Phase I (December 31, 2008), but the amendment has been narrowed in scope to be allowed only for tanks with organic liquid stored in waste water service where the installation of a domed roof may create a hazard due to the accumulation of pyrophoric material.

Proposed Amended Rule 1178, subparagraph (d)(2)(C) will contain two clauses. Clause (d)(2)(C)(i) keeps the existing condition and clause (d)(2)(C)(ii) would provide the permitting option for external floating roof tanks that store waste water. The proposed rule language would read:

(C) In lieu of complying with the requirements in subparagraph (d)(2)(B):
- (i) The operator who is subject to Phase I shall accept permit conditions to limit the true vapor pressure of the organic liquids stored in a tank to lower than 3 psia by the end of Phase I; or
- (ii) The operator of a waste water tank where the installation of a domed roof may create a hazard due to the accumulation of pyrophoric material, as confirmed by the Executive Officer, who is subject to Phase II shall accept permit conditions to limit the true vapor pressure of the organic liquids stored in a tank to lower than 3 psia.

This amendment addresses a specific issue related to concerns regarding the installation of a domed roof on a waste water tank. The term waste water tank is used in (C)(ii) rather than "waste stream tank," to avoid the suggestion that all waste stream tanks may have recourse to the new provision. Not all tanks would be expected to contain sour water characteristics that could lend to

[1] AFPM Process Safety Bulletin – Flammability Hazards of Hydrogen Sulfide Accumulation in Sulfur Tanks by AFPM (American Fuel and Petrochemical Manufacturers); June 2018

[2] Retrieved from: https://www.dictionary.com/browse/pyrophoric

the showing of a demonstrable hazard. As part of this amendment, the Executive Officer retains the ability to review and to confirm an operator's support for any claim of hazard due to the accumulation of pyrophoric material.

Staff recognizes that Rule 1178 will be amended in the future as part of the implementation of Assembly Bill (AB) 617, particularly for areas of concern identified and committed to in the Community Emissions Reduction Plan (CERP) for the communities of Wilmington, Carson, and West Long Beach.

EMISSION REDUCTIONS AND COST EFFECTIVENESS

Staff evaluated potential VOC emission reductions if domes were to be installed on the two tanks versus the implementation of the proposed permit condition to limit the TVP of the material stored in the tank to less than 3 psia. A baseline of emissions at a TVP of 3.26 psia for the material stored in the tanks was used for illustrative purposes and for closely approximating psia values utilized in the 2018 AER. Based on an initial TVP value of 3.26 psia, if domes were to be installed on the two tanks affected by the rule, a reduction of approximately 2 lbs of VOC per day per tank was estimated. Based on an initial TVP value of 3.26 psia, by implementing the proposed permit condition of limiting the TVP of the material in the tank to less than 3 psia, a reduction of approximately 0.8 lbs of VOC per day per tank was estimated. The proposed amendment would result in approximately 2.4 lbs of VOC per day foregone. Notably, however, the reported emissions for these two tanks of regulatory interest in reporting year 2019 were 786.2 lbs. of VOC combined, thus making even this amount of suggested foregone VOC an upper bound estimate for an atypical year.

PAR 1178 proposes the option for an operator of a waste water tank where the installation of a domed roof may create a hazard due to the accumulation of pyrophoric material who is subject to Phase II to accept permit conditions to limit the true vapor pressure of the organic liquids stored in a tank to lower than 3 psia. The proposed amendment does not result in any increased costs to be incurred. While the tank operator would have to pay for an application to change the condition of the applicable permit, the cost would be less than the application cost to modify the tank to install the dome. While permit conditions would be expected to impose monitoring and recordkeeping requirements, these costs on the facility already are imposed by ongoing rule requirements under Rule 1178(d)(2)(B) for the facility to verify that a tank is not subject to a doming requirement. The proposed rule also does not have any significant effect on air quality. As a result, a cost-effectiveness analysis as part of a socio-economic analysis is not required.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3). A Notice of Exemption will be prepared pursuant to CEQA Guidelines Section 15062

and if the proposed project is approved, the Notice of Exemption will be electronically filed with the State Clearinghouse of the Governor's Office of Planning and Research to be posted on their CEQAnet Web Portal, which may be accessed via the following weblink: https://ceqanet.opr.ca.gov/search/recent. In addition, the Notice of Exemption will be electronically posted on the South Coast AQMD's webpage which can be accessed via the following weblink: http://www.aqmd.gov/nav/about/public-notices/ceqa-notices/notices-of-exemption/noe---year-2020. The electronic filing and posting of the Notice of Exemption is being implemented in accordance with Governor Newsom's Executive Orders N-54-20 and N-80-20 issued on April 22, 2020 and September 23, 2020, respectively, for the State of Emergency in California as a result of the threat of COVID-19.

SOCIOECONOMIC ANALYSIS

The proposed amendments to Rule 1178 do not impose any additional costs. Therefore, no socioeconomic analysis is required under California Health and Safety Code (CH&SC) Sections 40440.8 and 40728.5.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

Requirements to Make Findings

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

The draft findings are as follows:

Necessity

PAR 1178 is necessary to provide operational flexibility to an operator of an external floating roof tank in the service of sour water or recovered oil while addressing safety concerns related to the installation of domed roofs on these types of tanks.

Authority

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

Clarity

PAR 1178 is written or displayed so that its meaning can be easily understood by the persons directly affected by them.

Consistency

PAR 1178 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations.

Non-Duplication

PAR 1178 will not impose the same requirements as any existing state or federal regulations. The proposed amended rules are necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD.

Reference

In amending this rule, the following statutes which the South Coast AQMD hereby implements, interprets or makes specific are referenced: CH&SC Sections 39002, 40001, 40406, 40702, and 40440(a).

COMPARATIVE ANALYSIS

Under CH&SC Section 40727.2, the South Coast AQMD is required to perform a comparative written analysis when adopting, amending, or repealing a rule or regulation. The comparative analysis is relative to existing federal requirements, existing or proposed South Coast AQMD rules and air pollution control requirements and guidelines which are applicable to above ground storage tanks. Because PAR 1178 does not impose a new or more stringent emissions limit or standard, or other air pollution control monitoring, reporting or recordkeeping requirements, a comparative analysis is not required.

INCREMENTAL COST EFFECTIVENESS

California Health and Safety Code Section 40920.6 requires an incremental cost-effectiveness analysis for BARCT rules or emission reduction strategies when there is more than one control option which would achieve the emission reduction objective of the proposed amendments, relative to ozone, CO, SOx, NOx, and their precursors. The proposed amendment does not include new BARCT requirements. Therefore, this provision does not apply to the proposed amendment.

ATTACHMENT H

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SUBJECT: **NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT**

PROJECT TITLE: **PROPOSED AMENDED RULE 1178 – FURTHER REDUCTIONS OF VOC EMISSIONS FROM STORAGE TANKS AT PETROLEUM FACILITIES**

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, the South Coast Air Quality Management District (South Coast AQMD), as Lead Agency, has prepared a Notice of Exemption pursuant to CEQA Guidelines Section 15062 – Notice of Exemption for the project identified above.

South Coast AQMD is proposing amendments to Rule 1178 which would: 1) allow an operator to accept a permit condition to limit the true vapor pressure of organic liquid contained in wastewater stored in an external floating roof tank to three pounds per square inch absolute (psia), in lieu of doming the tank, to prevent creating a safety hazard due to the accumulation of pyrophoric material that could otherwise occur if the tank were domed; and 2) allow the Executive Officer to retain the ability to review and confirm an operator's claim of a safety hazard due to the accumulation of pyrophoric material. Proposed Amended Rule 1178 is estimated to result in approximately 2.4 pounds per day of foregone VOC emission reductions, which is less than the South Coast AQMD air quality significance threshold of 55 pounds per day (mass daily threshold for operation).

The proposed project has been reviewed pursuant to: 1) CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA. Since the proposed project would result in minimal foregone VOC emission reductions, it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption. If the proposed project is approved, this Notice of Exemption will be electronically filed with the State Clearinghouse of the Governor's Office of Planning and Research which, upon posting, may be accessed on their CEQAnet Web Portal via the following weblink: https://ceqanet.opr.ca.gov/search/recent. In addition, the Notice of Exemption will be electronically posted on the South Coast AQMD's webpage which can be accessed via the following weblink: http://www.aqmd.gov/nav/about/public-notices/ceqa-notices/notices-of-exemption/noe---year-2020. The electronic filing and posting of the Notice of Exemption is being implemented in accordance with Governor Newsom's Executive Orders N-54-20 and N-80-20 issued on April 22, 2020 and September 23, 2020, respectively, for the State of Emergency in California as a result of the threat of COVID-19.

Any questions regarding this Notice of Exemption should be directed to Kevin Ni by email at kni@aqmd.gov or by phone at (909) 396-2462. Any questions regarding Proposed Amended Rule 1178 should be directed to Rodolfo Chacon by email at rchacon@aqmd.gov or by phone at (909) 396-2726.

Date: October 15, 2020 **Signature:** Barbara Radlein

Barbara Radlein
Program Supervisor, CEQA
Planning, Rule Development and Area Sources

Reference: California Code of Regulations, Title 14, Division 6, Chapter 3

NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

To: Governor's Office of Planning and Research - State Clearinghouse
1400 Tenth St, Suite 222
Sacramento, CA 95814-5502

From: South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Project Title:
Proposed Amended Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities

Project Location:
The project is located in the South Coast Air Quality Management District (South Coast AQMD) jurisdiction, which includes the four-county South Coast Air Basin (all of Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portion of the Salton Sea Air Basin (SSAB) and the non Palo Verde, Riverside County portion of the Mojave Desert Air Basin (MDAB).

Description of Nature, Purpose, and Beneficiaries of Project:
South Coast AQMD is proposing amendments to Rule 1178 which would: 1) allow an operator to accept a permit condition to limit the true vapor pressure of organic liquid contained in wastewater stored in an external floating roof tank to three pounds per square inch absolute (psia), in lieu of doming the tank, to prevent creating a safety hazard due to the accumulation of pyrophoric material that could otherwise occur if the tank were domed; and 2) allow the Executive Officer to retain the ability to review and confirm an operator's claim of a safety hazard due to the accumulation of pyrophoric material. Proposed Amended Rule 1178 is estimated to result in approximately 2.4 pounds per day of foregone VOC emission reductions, which is less than the South Coast AQMD air quality significance threshold of 55 pounds per day (mass daily threshold for operation).

Public Agency Approving Project:	**Agency Carrying Out Project:**
South Coast Air Quality Management District	South Coast Air Quality Management District

Exempt Status:
CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption

Reasons why project is exempt: Pursuant to the California Environmental Quality Act (CEQA), South Coast AQMD, as Lead Agency, has reviewed Proposed Amended Rule 1178 pursuant to: 1) CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA. Since the proposed project would result in minimal foregone VOC emission reductions, it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption.

Date When Project Will Be Considered for Approval (subject to change):
South Coast AQMD Governing Board Hearing: November 6, 2020

CEQA Contact Person:	**Phone Number:**	**Email:**	**Fax:**
Kevin Ni	(909) 396-2462	kni@aqmd.gov	(909) 396-3982
Rule Contact Person:	**Phone Number:**	**Email:**	**Fax:**
Rodolfo Chacon	(909) 396-2726	rchacon@aqmd.gov	(909) 396-3324

Date Received for Filing: _____ **Signature:** *(Signed Upon Board Approval)*
Barbara Radlein
Program Supervisor, CEQA
Planning, Rule Development and Area Sources

ATTACHMENT I

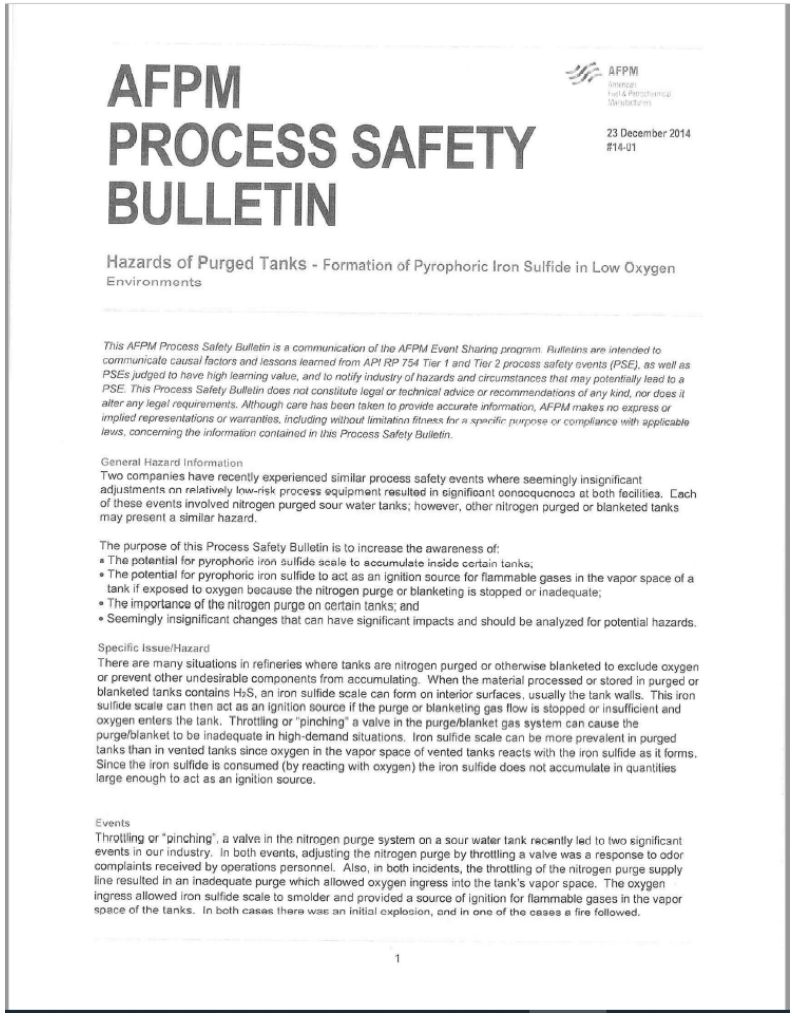
Proposed Amended Rule 1178
Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities

Board Meeting

November 6, 2020

Background

- Rule 1178 establishes requirements to reduce VOC emissions from storage tanks at petroleum facilities
- Proposed amendments needed to address a specific safety issue
- Separate from a broader amendment planned in 2021 for AB 617



AFPM

AFPM PROCESS SAFETY BULLETIN

AFPM
American Fuel & Petrochemical Manufacturers

23 December 2014
#14-01

Hazards of Purged Tanks - Formation of Pyrophoric Iron Sulfide in Low Oxygen Environments

This AFPM Process Safety Bulletin is a communication of the AFPM Event Sharing program. Bulletins are intended to communicate causal factors and lessons learned from API RP 754 Tier 1 and Tier 2 process safety events (PSE), as well as PSEs judged to have high learning value, and to notify industry of hazards and circumstances that may potentially lead to a PSE. This Process Safety Bulletin does not constitute legal or technical advice or recommendations of any kind, nor does it alter any legal requirements. Although care has been taken to provide accurate information, AFPM makes no express or implied representations or warranties, including without limitation fitness for a specific purpose or compliance with applicable laws, concerning the information contained in this Process Safety Bulletin.

General Hazard Information

Two companies have recently experienced similar process safety events where seemingly insignificant adjustments on relatively low-risk process equipment resulted in significant consequences at both facilities. Each of these events involved nitrogen purged sour water tanks; however, other nitrogen purged or blanketed tanks may present a similar hazard.

The purpose of this Process Safety Bulletin is to increase the awareness of:

- The potential for pyrophoric iron sulfide scale to accumulate inside certain tanks;
- The potential for pyrophoric iron sulfide to act as an ignition source for flammable gases in the vapor space of a tank if exposed to oxygen because the nitrogen purge or blanketing is stopped or inadequate;
- The importance of the nitrogen purge on certain tanks; and
- Seemingly insignificant changes that can have significant impacts and should be analyzed for potential hazards.

Specific Issue/Hazard

There are many situations in refineries where tanks are nitrogen purged or otherwise blanketed to exclude oxygen or prevent other undesirable components from accumulating. When the material processed or stored in purged or blanketed tanks contains H_2S, an iron sulfide scale can form on interior surfaces, usually the tank walls. This iron sulfide scale can then act as an ignition source if the purge or blanketing gas flow is stopped or insufficient and oxygen enters the tank. Throttling or "pinching" a valve in the purge/blanket gas system can cause the purge/blanket to be inadequate in high-demand situations. Iron sulfide scale can be more prevalent in purged tanks than in vented tanks since oxygen in the vapor space of vented tanks reacts with the iron sulfide as it forms. Since the iron sulfide is consumed (by reacting with oxygen) the iron sulfide does not accumulate in quantities large enough to act as an ignition source.

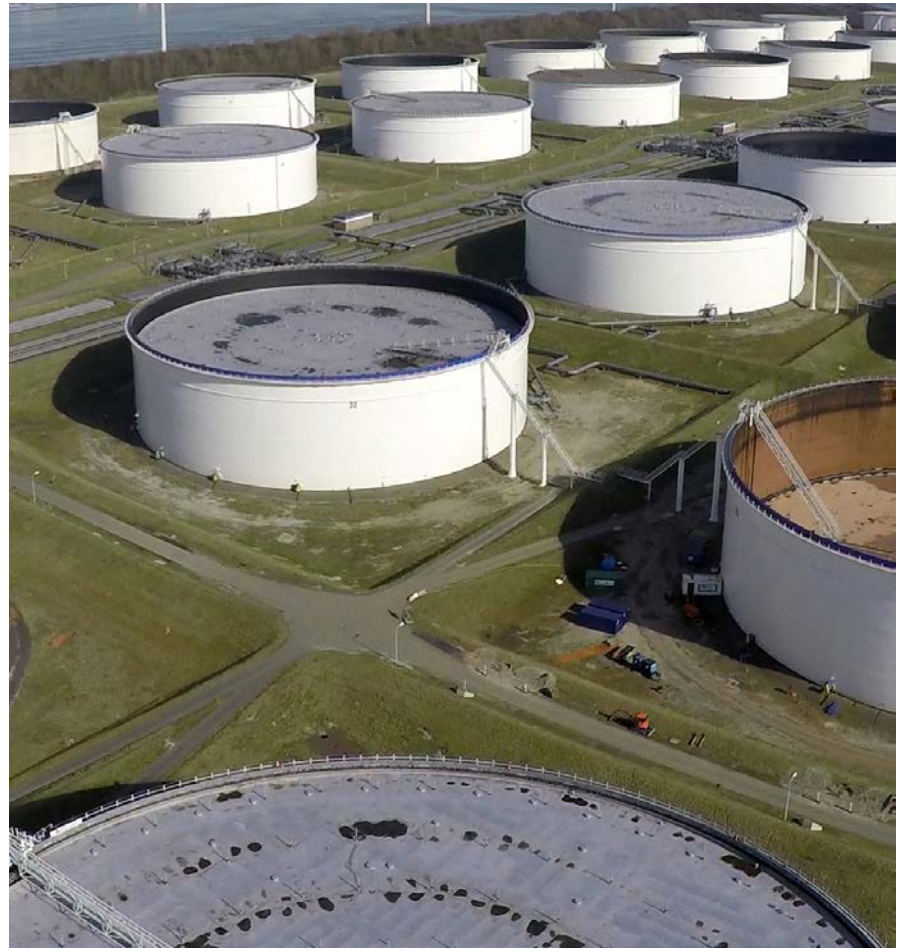
Events

Throttling or "pinching", a valve in the nitrogen purge system on a sour water tank recently led to two significant events in our industry. In both events, adjusting the nitrogen purge by throttling a valve was a response to odor complaints received by operations personnel. Also, in both incidents, the throttling of the nitrogen purge supply line resulted in an inadequate purge which allowed oxygen ingress into the tank's vapor space. The oxygen ingress allowed iron sulfide scale to smolder and provided a source of ignition for flammable gases in the vapor space of the tanks. In both cases there was an initial explosion, and in one of the cases a fire followed.

1

Safety Issue

- In 2019, two waste water tanks exceeded the true vapor pressure limit of 3 psia, which requires doming
- If tanks are domed, stored waste water containing hydrogen sulfide contaminants can self-ignite
- Self-ignition can lead to fire, damage to a tank, and subsequent community exposure



Proposed Amendment

- Re-instate 2008 option to allow operator to accept a permit condition to limit the true vapor pressure of a storage tank in lieu of doming the tank
- Provision would be limited to waste stream tanks where pyrophoric material may form
- Permit condition would limit the true vapor pressure to below 3 psia

VOC Emissions Forgone and Cost Impacts

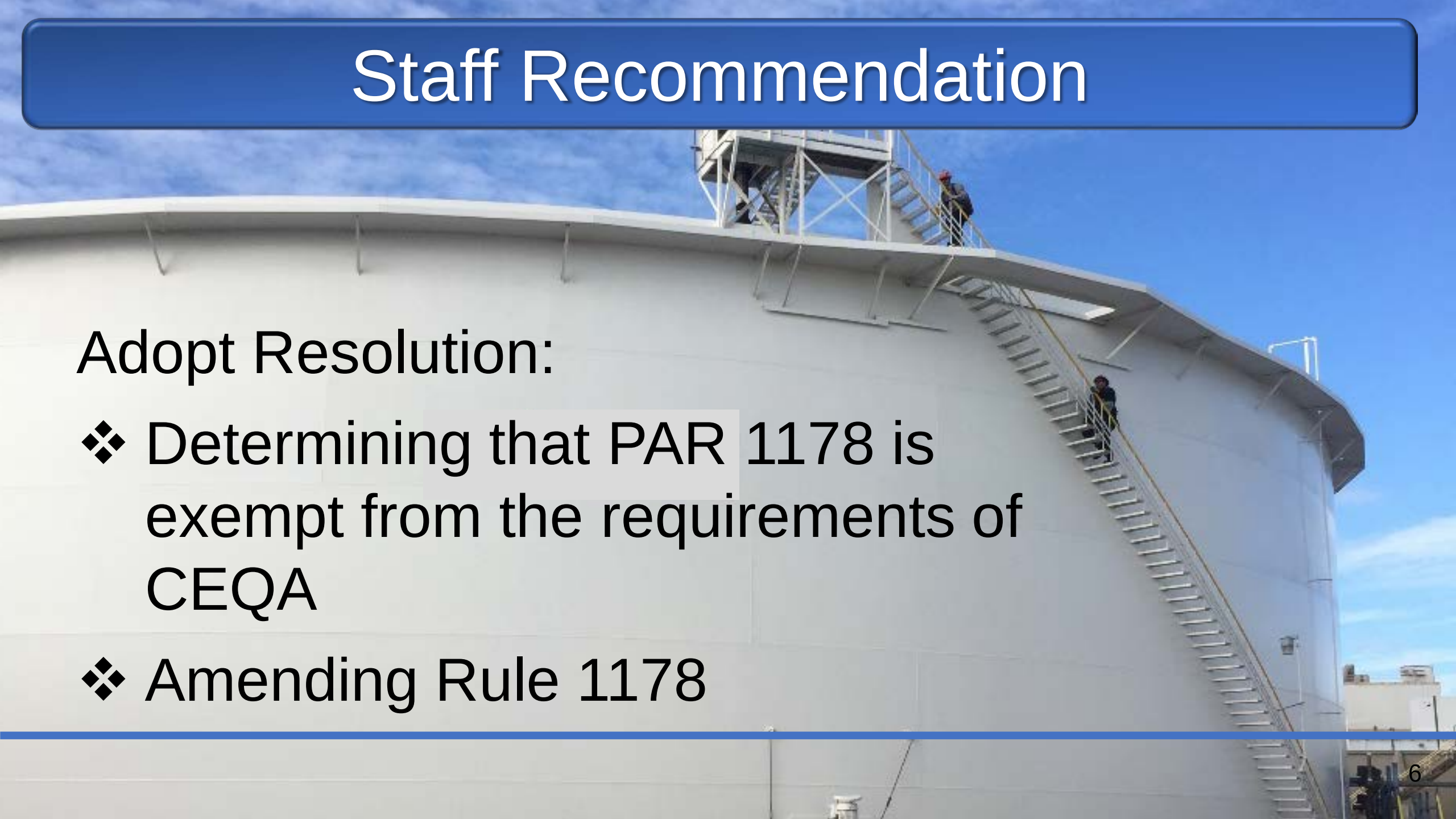
VOC Emissions Forgone

- 2.4 lbs/day forgone in selecting permitting option

No Cost Impacts

- The proposed amendment does not impose any additional costs

Staff Recommendation



Adopt Resolution:

- Determining that PAR 1178 is exempt from the requirements of CEQA
- Amending Rule 1178