

Yolo-Solano Air Quality Management District
1947 Galileo Court, Suite 103
Davis, CA 95616
(530)757-3650
www.ysaqmd.org



PROPOSED REVISIONS TO RULE 2.21, ORGANIC LIQUID STORAGE AND TRANSFER

FINAL STAFF REPORT

August 10, 2005

Prepared by: Nancy Fletcher
nfletcher@ysaqmd.org

Reviewed by: Paul Hensleigh
phensleigh@ysaqmd.org

Table of Contents

Page

I.	EXECUTIVE SUMMARY	3
A.	BACKGROUND	4
II.	DISCUSSION OF PROPOSED CHANGES TO RULE 2.21	5
III.	COMPARISON TO OTHER APPLICABLE REGULATIONS AND REQUIREMENTS ...	8
IV.	IMPACTS OF THE PROPOSED RULE	18
V.	ENVIRONMENTAL IMPACTS OF METHODS OF COMPLIANCE	19
VI.	REGULATORY FINDINGS	20
VII.	PUBLIC COMMENTS AND STAFF RESPONSES	21
VIII.	REFERENCES	28
ATTACHMENT A	PROPOSED AMENDMENTS TO RULE 2.21, ORGANIC LIQUID STORAGE AND TRANSFER; STRIKE-OUT UNDERLINE VERSION	
ATTACHMENT B	NOTICE OF EXEMPTION FROM CEQA GUIDELINES	
ATTACHMENT C	RESOLUTION NO. 05-05	
ATTACHMENT D	WRITTEN COMMENTS RECEIVED	

I. EXECUTIVE SUMMARY

On September 14, 2005, the Yolo-Solano Air Quality Management District (District) Board of Directors will consider the proposed amendments to Rule 2.21, Organic Liquid Storage and Transfer. Rule 2.21 controls volatile organic compound (VOC) emissions from the storage and transfer of organic liquids. Rule 2.21 was originally adopted by the Board of Directors March 23, 1994, and was amended June 12, 2002. The revision incorporated best available retrofit control technology (BARCT) requirements and "every feasible measure" standards for storage tanks, bulk plants, and terminals. District Staff have been enforcing the provisions of the June 12, 2002 version of Rule 2.21.

Rule 2.21 was submitted to the United States Environmental Protection Agency (US EPA), on August 6, 2002, as a revision to California's State Implementation Plan (SIP) for Achieving and Maintaining the National Ambient Air Quality Standards. The US EPA reviewed the revision and issued a limited approval and disapproval of Rule 2.21. District staff is proposing to amend Rule 2.21 to correct the deficiency cited by the US EPA. In addition, District Staff is proposing to incorporate minor changes resulting in improvement to rule clarity, effectiveness, and consistency with other agencies.

The main revisions to Rule 2.21 include the following:

1. The applicability for Rule 2.21 will be changed. The true vapor pressure for organic liquids subject to Rule 2.21 will be lowered from 1.5 psia to 0.5 psia,
2. Section 111 which provides an exemption for tanks involved in maintenance or replacement operations will be amended, (EPA deficiency)
3. Section 113 will be added exempting tanks already applicable to Rule 2.35 Pharmaceutical Manufacturing Operations,
4. The efficiency criteria for vapor recovery systems at Bulk Plants will be expressed as a percentage, and the requirement will be tightened to 95%,
5. Section 502.4, requiring Bulk Plants to annually re-certify the vapor recovery system will be deleted,
6. Other Gasoline Loading was added as Section 311, clarifying vapor recovery systems need to be certified by the California Air Resource Board (CARB certified).

The proposed amendments add more stringent requirements aimed at controlling VOC emissions. The proposed amendments will neither have a significant nor detrimental effect on the environment. Therefore, staff have prepared a Notice of Exemption to satisfy the requirements of the California Environmental Quality Act (CEQA). The notice states that the revisions to Rule 2.21 are exempt from the requirements of CEQA pursuant to Section 15308, Actions by Regulatory Agencies for Protection of the Environment.

A BACKGROUND

The purpose of Rule 2.21, Organic Liquid Storage and Transfer is to reduce volatile organic compound emissions from any source storing or transferring organic liquids with a true vapor pressure of 0.5 psia or greater. Emissions are controlled by establishing guidelines for vapor loss control devices employed during organic liquid storage and for vapor recovery systems used during organic liquid transfer.

Rule 2.21 establishes standards for tanks, terminal loading equipment, bulk plant loading equipment, other gasoline loading, other organic liquid loading, and transport vessels. Currently there are approximately 399 gasoline tanks at the approximate 196 gasoline dispensing facilities and three bulk plants in the District. Additionally the District has two bulk terminals with a total of 27 tanks, permitted for gasoline, diesel, ethanol, or other products. Rule 2.21 applies to any applicable tank with a capacity over 250 gallons regardless if the tank is above or below ground.

Rule 2.21 was originally adopted by the Board of Director's March 23, 1994, and was incorporated into the SIP August 25, 1995. The rule was amended June 12, 2002. The amendments included requirements for new and replacement seals, lower explosive limit (LEL) monitoring requirements for internal floating roof tanks, deck fitting requirements for internal and external floating roof tanks, annual testing for bulk plants and terminals, maintenance monitoring, reporting and record keeping. The amendments to Rule 2.21 were expected to reduce VOC emissions by 0.12 tons per day due to the more stringent deck fitting requirements. Expected emission reductions were not quantified for the other conditions.

The State of California submitted Rule 2.21 to the US EPA, on August 6, 2002, as a revision to California's SIP for Achieving and Maintaining the National Ambient Air Quality Standards. On April 25, 2003 the US EPA published in the Federal Register a limited approval and limited disapproval of Rule 2.21. The US EPA finalized its limited approval and disapproval of Rule 2.21 on January 22, 2004, outlining provisions which conflict with section 110 of the Federal Clean Air Act. Publication of the final determination started an 18 month deadline to correct the deficiencies. Failure to correct the deficiencies prior to the 18 month deadline could result in penalties.

Since the US EPA incorporated the 1994 version of Rule 2.21 into the SIP, the US EPA has amended their policy on excess emissions during malfunctions, start-up, and shutdown. Instead of requiring rules already in the SIP to be revised, the US EPA is enforcing their new policy on a rule by rule basis when they are submitted for revision. The US EPA reported that Sections 111 and 501 when taken together, are inconsistent with the US EPA's policy on exemptions for excess emissions during malfunctions, start-up and shutdown.

The US EPA acknowledges maintenance activities may need an emission limit exemption similar to exemptions used for start-up and shutdown. Any exemption would need to be written narrowly so that it is used in cases where compliance with emission limits or technological requirements is technologically infeasible and emissions are minimized to the maximum extent that is feasibly possible.

Furthermore, the US EPA reported Section 111 gives the APCO unbounded “director’s discretion,” due to the absence of any criteria established for approving or rejecting maintenance plans. The US EPA reports these provisions violate the US EPA requirements concerning enforceability and rule relaxations. In order for Rule 2.21 to be consistent with the US EPA’s policy the US EPA recommended either Section 111 be removed, or rewritten to delimit the APCO’s discretion for approval of maintenance plans.

II. DISCUSSION OF PROPOSED CHANGES TO RULE 2.21

Listed below are descriptions of the proposed revisions and the intended purposes of the revisions.

Section 102 Applicability

This section has been revised lowering the threshold for the true vapor pressure of organic liquids subject to rule 2.21. Originally the rule was applicable to organic liquids with true vapor pressures of 1.5 psia or greater. This revision is proposing to lower the true vapor pressure to 0.5 psia to be consistent with the rules of other Air Districts.

Section 111 Limited Exemption - Preventative Maintenance

This section will be amended. The US EPA identified this section as conflicting with section 110 of the Clean Air Act. Section 111 does not conform with the US EPA’s policy for SIPs regarding excess emissions during times of malfunction, startup, shutdown and maintenance. The US EPA has directed the District to either take the exemption out or narrowly define an exemption plan. The District originally planned to delete the section but due to feed back from sources at the public workshop, the District is proposing to amend this section instead.

There are times when maintenance should be performed on permitted equipment to prevent the equipment from operating outside the permitted limits. An example of this type of maintenance can be when part of a secondary seal may need to be replaced due to wear. Emissions are limited when the seal can be replaced while the tank still contains product, instead of emptying and degassing the tank. Allowing repairs to be made while minimizing emissions by employing procedures such as not allowing product to go into or out of the tank during the maintenance, can prevent a more emissive episode. These types of maintenance are not routine, but should be accommodated.

However, in circumstances where the source is in violation of Rule 2.21, or any other applicable rule, the source is expected to follow the procedures outlined in Rule 5.2 UPSET/BREAKDOWN CONDITIONS: EMERGENCY VARIANCE. This rule is narrowly tailored to prevent any intentional problems due to negligence, disregard of any regulations, improper maintenance, recurrent breakdowns, or problems constituting a public nuisance. The source is required to notify the District of the problem and have it fixed within a certain time period. If the source requires additional time to fix the problem, they must shutdown operation of the equipment or apply for an emergency variance. The source will not be granted a variance if continued operation will interfere with attainment of national ambient air

quality standards. Furthermore, the APCO is required to take an enforcement action if the upset/breakdown interferes with attainment and maintenance of any national ambient air quality standard.

Section 113 Exemption - Pharmaceutical Manufacturing Operations

This section was added to exempt tanks already subject to Rule 2.35, Pharmaceutical Manufacturing Operations. Rule 2.35 outlines requirements for storage tanks at these types of facilities. This exemption was added for enforcement clarity. The District wanted to ensure all requirements for pharmaceuticals are in the rule intended for regulating the specific source.

Section 200 Definitions

The definition for Bulk Plant was slightly amended to clarify bulk plant refers only to facilities handling gasoline. The requirements referencing bulk plants are specific to gasoline facilities, requirements for other organic liquids are specified in another section.

The definition for gas leak was amended. The definition was changed from a reading of 10,000 ppm to 1,000 ppm above background . The definition is now consistent with the definition of a minor gas leak in District Rule 2.23, Fugitive Hydrocarbon Emissions.

The term preventative maintenance was added to the definitions in order to distinguish preventative maintenance from other maintenance performed. This will clarify exactly what the District considers preventative maintenance to be.

The term switch loading was added to the definitions to clarify the requirements of section 313 Switch Loading. Adding switch loading to the definitions ensures all terms are defined in the definition section and not in other sections of the rule, resulting in greater rule clarity.

Section 301 Storage Tanks >40,000 Gallons Capacity

Section 301.3 was slightly amended. The section was reworded for clarity, and the requirement for written notification was taken out of 301.3 and renumbered as 301.4. No changes were made to the standards, the section was moved for clarity because it is viewed as a separate requirement.

Section 305 Deck Fitting

The wording in Section 305.2 was slightly amended for clarity. The word 'only' was added in Section 305.2c to make it clear the rim vents gaskets are to be open only under the specified conditions. Additional grammatical changes were made to sections 305.2hiii-v.

Section 309 Gasoline Bulk Plant Loading

Section 309 was amended to specify gasoline bulk plant loading. This was done to be consistent with the requirement for CARB certification. There are no bulk plants in the

District which are not gasoline facilities. The emission limit in section 309.1 was changed. The new limit will now be expressed as a percentage instead of a number limit. The testing done on the equipment measures the efficiency as a percentage so it will allow the source and District to determine if the system is out of compliance without having to make a conversion. In addition, the vapor recovery system will be required to have a 95% efficiency. Previously, the requirement was 0.84 pounds per 1,000 gallons of organic liquid transferred which translated to a system which was approximately 90% efficient. This stricter limit is already being met by bulk plants in the District and requiring the system to be a percentage efficient as opposed to setting an emission limit will facilitate enforcement.

Section 310 Transport Vessel

This section was slightly amended to specify the type of transport vessels which will be required to be CARB certified. Vehicles which do not leave a facilities property which are not required to be licensed for use on any street or highway will not be required to be CARB certified. This is not a change in District policy but rather reflects current District practice. There are airports within the District which fuel planes by trucks which do not leave the facility property. Rule 2.21 requires the filling of the trucks to be conducted with a vapor recovery system which is 95% efficient and CARB certified, but the trucks are not required to be CARB certified.

Section 311 Other Gasoline Loading

This section was added to clarify that all gasoline loading must be accomplished using CARB certified equipment.

Section 312 (formerly 311) Other Organic Liquid Loading

The wording in this section was slightly amended. A condition was added specifying the section was applicable to the loading of other organic liquids with a true vapor pressure (TVP) greater than 1.5 psia. This was changed because the applicability of Rule 2.21 was changed to organic liquids with TVPs of 0.5 or greater. The District wants to keep the same limit in this section that has been previously required and is being achieved in practice.

Section 313 (formerly 312) Switch Loading

The wording in this section was amended to clarify the rule requirements. Switch Loading was added to the definitions, and therefore this section was reworded. This section specifies switch loading must meet the requirements outlined in Sections 308, 309, 310, and 311. There are no changes in rule requirements.

Section 501 Maintenance

This section was amended to clarify sources with equipment subject to the requirements of Section 301 will have additional notification requirements for sources planning to perform maintenance. The sources will be required to provide the APCO with a more detailed maintenance plan outlining the reasons the maintenance is necessary, the expected

duration of the work, the effect of not performing the maintenance, as well as any emission control equipment that will be used. Adding these requirements will ensure the District can enforce the rule requirements to the maximum extent.

Section 502 Monitoring

Section 502.4, requiring bulk plants to annually re-certify the vapor recovery system will be deleted. This testing requirement was added when Rule 2.21 was revised in 2002. However, CARB is not available for annual re-certification of equipment per method TP-202.1, and therefore, this requirement is being deleted.

Section 503 Reporting

Section 503.4 was added outlining reporting requirements for any source claiming the preventative maintenance exemption. This section was included because of the 72 hour event limit and 12 day limit placed on the sources for claiming this exemption. The District needs to ensure these caps are enforced. This will clarify for the District the exact time of the maintenance the source claimed the exemption. The District considers the time used for the exemption is only the time during the maintenance the source is out of compliance.

Section 600 Test Methods and Procedures

Section 602 was updated to the active ASTM Method for determining true vapor pressure.

Section 607, CARB Test Procedure TP 202.1 has been removed because it is not a test the District requires to be performed on any sources. The following sections were subsequently renumbered.

Section 608, CARB Test Procedures TP-201.1B, TP-201.1C, TP-201.1D, TP-201.1E, TP-201.3, TP-201.3B, was added to list appropriate test methods referenced in new section 502.4. The section specifies the source will be required to use the methods above or the most current CARB Executive Orders listed on the permit.

Section 609 was added to include the ability to use alternative test methods for determining Reid and true vapor pressure, so long as the test methods are approved by the APCO, CARB and US EPA.

Section 610 was added to clarify the procedure the District will follow when multiple test methods are specified for any testing.

Table 1

Acetone was removed from the table because it is classified as an exempt compound. Exempt compounds are not subject to permitting requirements. The intent of the table is to assist in establishing rule applicability for different compounds. Acetone was removed to avoid confusion.

III. COMPARISON TO OTHER APPLICABLE REGULATIONS AND REQUIREMENTS

Health and Safety Code Section 40727.2 requires districts to prepare a written analysis (usually in the form of a matrix) that identifies all existing federal air pollution control requirements, including, but not limited to emission control standards constituting best available control technology (BACT) that applies to the same equipment or source type as the rule or regulation proposed for adoption or modification by the District. In addition, the analysis shall identify any other District rule or regulation that applies to the same equipment or source type.

Staff have identified five federal regulations applicable to sources storing and transferring volatile organic liquids. The District has also identified District Rule 2.23, FUGITIVE HYDROCARBON EMISSIONS, and District Rule 2.22, GASOLINE DISPENSING FACILITIES, as applying to some of the same source equipment as District Rule 2.21. In addition, District Rule 2.35 applies to Pharmaceutical Manufacturing Operations. Rule 2.21 is aimed to control emissions mainly from tanks and associative equipment at bulk terminals and bulk plants. The rule however is inclusive of any applicable tank below or above ground with a capacity greater than 250 gallons storing an organic liquid with a TVP greater than 0.5 psia. Therefore, Rule 2.21 applies to tanks at other facilities such as gasoline dispensing facilities. Equipment at pharmaceutical operations will not be subject to Rule 2.21, and therefore no proposed requirements will conflict with Rule 2.35.

Rule 2.23 controls fugitive hydrocarbon emissions from equipment components at gasoline terminals, pipeline stations, refineries, chemical plants, oil and gas production fields, and natural gas processing plants. Rule 2.23 outlines procedures for maintenance and repair of equipment handling organic liquids. Rule 2.23 establishes tighter standards for leaks. Rule 2.23 defines a minor gas leak as the detection of total gaseous hydrocarbons in excess of 1,000 ppm, and a major gas leak as the detection of total gaseous hydrocarbons in excess of 10,000 ppm. A minor gas leak must be repaired in 14 days, a major gas leak in 5 days, and a gas leak greater than 50,000 ppm in 1 day. A major liquid leak must be repaired in 1 day, and a minor liquid leak in 2 days. Rule 2.23 also requires the frequency of component inspections to be daily or once during manned operating shifts. These inspections require a log book and can be visual, audible, or use an analyzer or soap bubbles. Identified leaks must be further quantified by US EPA Reference Method 21. Rule 2.23 also requires quarterly or annual inspections of components using US EPA Reference Method 21. No requirements of the proposed amendments to Rule 2.21 conflict with requirements in Rule 2.23.

Rule 2.22 limits displaced gasoline vapors when transferring gasoline from transport vehicles into storage tanks, and out of storage tanks into any motor vehicle fuel tank. Storage tanks at gasoline facilities and bulk plants are subject to requirements of Rule 2.21 and 2.22. Rule 2.22 requires vapor recovery equipment to be CARB certified, requires daily, periodic and annual equipment inspections, and annual or biannual source testing. Rule 2.22 exempts facilities refueling aircrafts. These facilities are not exempt from Rule 2.21. No requirements of the proposed amendments to Rule 2.21 conflict with requirements in Rule 2.22.

40CFR60, Subpart Ka - Standards for Petroleum Storage Vessels

Title 40 of the Code of Federal Regulations, Part 60, Subpart Ka-Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or modification Commenced After May 18, 1978, and Prior to July 23, 1984, applies to storage vessels with capacities greater than or equal to 40,000 gallons storing petroleum product. The District has identified one source with two tanks applicable to the requirement from 40CFR60 Subpart Ka. The requirements of Rule 2.21 are consistent with 40CFR60 Subpart Ka.

Comparison of Proposed Rule 2.21 with 40CFR60, Subpart Ka

Category	Subpart Ka	Rule 2.21
Applicability	petroleum storage vessel capacity \geq 40,000 gallons	storage vessel capacity \geq 50 gallons storing VOL with a TVP \geq 0.5 psia
Standard Applicability	petroleum liquid $1.5 < \text{TVP} < 11.1$	$0.5 < \text{TVP}$
Standard	EFR, IFR, vapor recovery 95% efficient, equivalent system	an EFR, IFR, or vapor recovery system
EFR	pontoon-type or double-deck-type cover resting on surface with closure device	same
Closure Device	primary and secondary seal	same
EFR, IFR	floating on liquid except during emptying and filling	in contact with liquid except during emptying and filling
EFR, IFR	filling or emptying shall be continuous and as rapid as possible	same
EFR Primary Seal	metallic shoe, liquid mounted, or vapor mounted	after 6/02 new seals mechanical shoe or liquid mounted
EFR Shoe or Liquid Mounted	gap < 10.0 in/ft of tank diameter, width $< 1 \frac{1}{2}$ in.	detailed criteria for gap measurements based on specific seals
EFR Vapor Mounted	gap < 1.0 in/ft of tank diameter, width $< \frac{1}{2}$ in.	
EFR Shoe	one end in liquid other 24 in above surface	same
EFR Seals	no holes, tears, or openings in shoe, fabric or envelope	same
EFR Secondary Seal	cover completely	same
EFR Secondary Seal	gap < 1.0 in/ft of tank diameter, width $< \frac{1}{2}$ in., no gaps for vapor mounted	detailed criteria for gap measurements based on specific seals

EFR Secondary Seal	exempt from gap requirements during primary seal inspection	allow easy insertion of probes 1 ½ inch to measure probes
EFR, IFR	except for bleeder and rim space vents, openings provide projection below surface	same
EFR, IFR	except for leg sleeves, rim and bleeder vents, and stub drains all openings equipped with cover, seal or lid and closed when in use	same for EFR, guide poles also exempted
EFR, IFR	bleeder vents closed when roof is floating, except when landed or floated off	same
EFR, IFR	rim vents open only when roof floated off or at manufacturers setting	same
EFR	roof drain will have slotted membrane fabric that covers 90% of opening	same
Petroleum TVP >11.1	VRS 95% efficiency	pressure tank
Primary Seals	gap measurement every five years	EFR-gap measurements for seals and deck fittings every year and each time tank is emptied and degassed every three months
Secondary Seals	gap measurement every year	IFR- measure LEL, and visually inspect the secondary seal, floating roof and deck fittings- complete gap measurements of the seals every ten years, and when tank is emptied
Seals	30 day notice prior to measurement	seven day notice

EFR = external floating roof

IFR = fixed roof with internal floating roof

TVP = true vapor pressure

40CFR60, Subpart Kb - Standards for Volatile Organic Liquid Storage Vessels

Title 40 of the Code of Federal Regulations, Part 60, Subpart Kb-Standards for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 applies to storage vessels with capacities greater than or equal to 20,000 gallons storing VOL. This section does not apply to any vessels at coke oven by-product plants, pressure vessels without emissions to the atmosphere, vessels permanently attached to mobile vehicles, vessels with a capacity less than 420,000 gallons used for petroleum or condensate prior to custody transfer, vessels at bulk gasoline plants and gasoline service stations, and vessels used to store beverage alcohol, and operators who choose to comply with 40 CFR Part 65. The District has identified one source with a tank applicable to the requirements of

40CFR60, Subpart Kb. The requirements of proposed Rule 2.21 are consistent with 40CFR60, Subpart Kb.

Comparison of Proposed Rule 2.21 with 40CFR60, Subpart Kb

Category	Subpart Kb	Rule 2.21
Applicability	storage vessel capacity \geq 20,000 gallons storing volatile organic liquid (VOL)	storage vessel capacity \geq 250 gallons storing VOL with a TVP \geq 0.5 psia
Exemption	storage vessel capacity \geq 40,000 gallons storing VOL with a maximum TVP \leq 0.5 psia	
	storage vessel capacity \geq 20,000 gallons and \leq 40,000 storing liquid with a maximum TVP \leq 2.2 psia	
Standard Applicability	storage vessel with capacity \leq 40,000 gallons storing VOL with $0.75 \leq$ TVP \leq 11.0 psia, storage vessel with capacity \geq 20,000 gallons storing VOL with $4 \leq$ TVP \leq 11.0 psia	storage vessel capacity \geq 40,000 gallons storing VOL with a TVP \geq 0.5 psia
Tank Standard	IFR, external floating roof, closed vent system or control device, equivalent system	an EFR, IFR, or vapor recovery system
IFR EFR	the roof shall rest or float on surface (but not necessarily in complete contact with it) except during emptying and filling	same
IFR, EFR	filling or emptying shall be continuous and as rapid as possible	same
IFR	IFR must have either a liquid mounted seal, two continuous seals mounted one above the other, or a mechanical shoe seal	primary seals will be mechanical shoe or liquid mounted seal
EFR	a mechanical, or liquid -mounted primary seal covering space between roof and tank and a continuous secondary seal above the primary seal	primary can be resilient toroid requires secondary seal
IFR, EFR	noncontact openings must provide a projection below the liquid surface, except for automatic bleeder and rim space vents	has condition for EFR only

IFR	openings except for leg sleeves, automatic bleeder vents, rim vents, column wells, ladder wells, sample wells, and stub drains will be equipped with a gasketed cover or lid maintained with no visible gaps in a closed position at all time except when device is in actual use	
EFR	openings except for leg sleeves, automatic bleeder vents, rim vents, and roof drains will be equipped with a gasketed cover, seal or lid maintained with no visible gaps in a closed position at all times except when device is in actual use	same, guide poles are also exempted
IFR	all access hatch covers and automatic float well are bolted except when in use	same
IFR, EFR	all automatic bleeder vents will be equipped with a gasket and closed when roof is being floated off or is being landed on leg supports	same
IFR, EFR	rim space vents equipped with gasket and set to open only when roof is landed or at the manufacturer's recommended setting	same
IFR	all sample wells will have slitted fabric that covers at least 90% of the opening	same
IFR	fixed roof column supports penetrating IFR must have flexible sleeve seal or gasketed sliding cover	same
IFR	ladder wells equipped with a gasketed sliding cover	same
EFR	emergency roof drains will have slitted fabric that covers at least 90% of the opening	same
Closed Vent System	no detectable emissions over 500 ppm above background	emissions < 10,000 ppm above background
Closed Vent System	reduce inlet VOC emissions by 95%	same
IFR EFR	visually inspect every time the tank is emptied and degassed, make needed repairs prior to fill	every 12 months*

IFR	visually inspect seals every 12 months, repair within 45 days or take out of service	every three months measure LEL, and visually inspect the secondary seal, floating roof and deck fittings- complete gap measurements of the seals every ten years, and when tank is emptied vapor concentrations above roof < 30% of LEL
IFR with Double Seal	visually inspect every 5 years	
IFR	notify 30 days prior to the filling or refilling of vessels requiring inspection, 7 days if not planned	notify seven days prior to roof being landed, and performing monitoring on equipment
EFR	notify 30 days prior to inspecting gap, filling or refilling vessels, 7 days for filling if not planned	
EFR	measure primary and secondary seal gaps within 60 days of fill, primary every 5 years thereafter, secondary every year thereafter	gap measurements for seals and deck fittings every year and each time tank is emptied and degassed
EFR	accumulated gap for primary seal < 10in2/ft, width of any primary gap < 1.5 in	detailed criteria for gap measurements based on specific seals
EFR	accumulated gap for secondary seal < 1.0in2/ft, width of any secondary gap < 0.5 in	
EFR	mechanical shoe needs to extend into the liquid and extend a minimum of 24 in above liquid	same
EFR	make all necessary seal repairs within 45 days	see Rule 2.23 for requirements
Test Methods	U.S. EPA Methods	same

EFR = external floating roof tank

IFR = fixed roof with internal floating roof tank

TVP = true vapor pressure

40CFR60, Subpart XX - Bulk Gasoline Terminals

In general, the requirements for bulk terminals in proposed Rule 2.21 and the requirements in Title 40 of the Code of Federal Regulations, Part 60, Subpart XX - Standards of Performance for Bulk Gasoline Terminals are consistent. The main difference between the regulations is that proposed Rule 2.21 applies to the storage and transfer of an organic liquid with a vapor pressure of 0.5 psia or greater, whereas, Subpart XX applies only to the transfer of gasoline at bulk gasoline terminals. However, the regulations have consistent requirements for control of organic vapors from loading racks and cargo tankers.

Comparison of Proposed Rule 2.21 with 40CFR60, Subpart XX

Category	Subpart XX	Rule 2.21
Applicability	receives product via pipeline with gasoline throughput > 20,000 gallons per day	receives product primarily via pipeline
Standards	equipped with vapor collection system	same
Loading Rack VCS	<0.3 lbs VOC/1,000 gallons loaded	0.08 lbs VOC/1,000 gallons loaded
Loading Rack VPS	<0.66 lbs VOC/1,000 gallons loaded	
Loading Rack	VOCs must not pass from one rack to another	
Tank Truck	gasoline tank trucks must be vapor tight	drainage during disconnect < 10 ml averaged over three disconnects
Tank Truck	owner/operator must ensure compatible vapor collection equipment between terminal and tank, must ensure the equipment is used when loading	all transport vessel must be CARB certified, and operated in and maintained in compliance
Tank Truck	gauge pressure < 4,500 pascals during loading	
Tank Truck		all loading will be bottom loading
VCS	terminal VCS vent will not be open at pressures < 4,500 pascals	maintained to be leak free, gas tight and working order
Loading Rack, VCS, VPS	inspected monthly for leaks, leaks need to be repaired within 15 days	

EFR = external floating roof tank

IFR = fixed roof with internal floating roof tank

VPS = vapor processing system

40CFR63, Subpart R - Gasoline Distribution Facilities

In general, the requirements in proposed Rule 2.21 and the requirements in Title 40 of the Code of Federal Regulations, Part 63, Subpart R—National Emission Standards for Gasoline Distribution Facilities are comparable. The main difference between the regulations is that proposed Rule 2.21 applies to the storage and transfer of an organic liquid with a vapor pressure of 0.5 psia or greater, whereas, Subpart R applies to the storage and transfer of gasoline at a bulk gasoline terminal. However, the regulations are similar in their control of vapors from loading racks, storage tanks, and cargo tankers.

Comparison of Proposed Rule 2.21 with 40CFR63, Subpart R

Category	Subpart R	Rule 2.21
Applicability	gasoline terminal emission screening factor <1	receives product via pipeline
Loading Rack	<0.08 lbs VOC/1,000 gallons loaded	same
EFR & IFR	storage tank capacity >20,000 gallons must meet Kb requirements	>40,000 gallons
Loading Rack	gasoline cargo tank must be vapor tight	leak free, gas tight
Cargo Tankers	annual certification per US EPA Method 27	CARB Method
Cargo Tankers	gauge pressure must be within applicable limits	operate in compliance
Storage Vessels	a fixed roof & IFR, external floating roof, closed vent system or control device, equivalent system	same
Fixed Roof & IFR EFR	the roof shall rest or float on surface (but not necessarily in complete contact with it) except during emptying and filling	same
Fixed Roof & IFR, EFR	filling or emptying shall be continuous and as rapid as possible	same
Fixed Roof & IFR	IFR must have either a liquid mounted seal, two continuous seals mounted one above the other, or a mechanical shoe seal	primary seals will be mechanical shoe or liquid mounted seal
EFR	a mechanical, or liquid -mounted primary seal covering space between roof and tank and a continuous secondary seal above the primary seal	primary can be resilient toroid requires secondary seal
Fixed Roof & IFR, EFR	noncontact openings must provide a projection below the liquid surface, except for automatic bleeder and rim space vents	has condition for EFR only
EFR not in compliance	openings except for leg sleeves, automatic bleeder vents, rim vents, and roof drains will be equipped with a gasketed cover, seal or lid maintained with no visible gaps in a closed position at all times except when device is in actual use	same, guide poles are also exempted
EFR not in compliance	all automatic bleeder vents will be equipped with a gasket and closed when roof is being floated off or is being landed on leg supports	same
EFR not in compliance	rim space vents equipped with gasket and set to open only when roof is landed or at the manufacturer's recommended setting	same
Equipment	monthly leak inspections using log book, or equivalent leak monitoring program	same

Equipment	initial attempt to fix within 5 days, leaks must be fixed in 15 days	see Rule 2.23 for requirements
General	gasoline will be handled in a manner resulting in minimal vapor loss	same
VPCS	500 ppm standard for determining leaks to be repaired	10,000 ppm
Leak Detection	Method 21	same

EFR = external floating roof

IFR = fixed roof with internal floating roof

VPCS = vapor processing collection system

40CFR65, Subpart C - Storage Vessels

Title 40 of the Code of Federal Regulations, Part 65, Consolidated Federal Air Rule Subpart C-Storage Vessels applies to owners or operators who have chosen to comply with the provision to this section as an alternative to the requirements in referencing subpart 40 CFR part 60, 61, or 63.

Comparison of Proposed Rule 2.21 with 40CFR65, Subpart C

Category	Subpart C	Rule 2.21
Control Requirements Vessel Storing VOL < 10.9psi	IFR, EFR, EFR converted to IFR, closed vent and flare, closed vent and control device, route to process or fuel gas system, or equivalent	EFR, IFR, VRS
IFR, EFR	IFR float on liquid except when supported by legs	same
IFR	a liquid mounted seal, a mechanical shoe seal, two continuous seals one on top of each other	same
EFR	primary seal-either liquid mounted or mechanical shoe, and secondary seal completely cover space between roof edge and wall	same
IFR, EFR	except for automatic bleeder vents, and rim space vents all opening are to provide a projection below stored liquid	same
IFR	except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains, each opening will have gasketed cover or lid	
EFR	except for leg sleeves, automatic bleeder vents, rim vents, and roof drains each opening will have gasketed cover, seal, or lid closed when in use	same, guidepoles are also exempted

IFR	each sample well will have a slit fabric cover covering 90% of opening	same
IFR, EFR	all automatic bleeder and rim space vents will be gasketed	same
IFR	ladder well will have a gasketed sliding cover	same
IFR	column well will have a flexible fabric sleeve or gasketed sliding cover	same
IFR	covers on each access hatch and gauge float well will be designed to be bolted/fastened when closed	same for IFR and EFR
IFR, EFR	filling and refilling shall be continuous and as rapid as possible, records maintained	same
IFR, EFR	automatic bleeder vents are to be closed at all times except when landed or floated off	same
IFR	all covers, access hatch, gauge float well, or lid will remain closed except when the device is in use	same
EFR	covers on each access hatch and gauge float well, will be bolted when closed	same
IFR, EFR	rim space vents are to be opened only when not floating or pressure beneath seal exceeds manufacturers settings	same
EFR	each gauge hatch sample port will have a gasketed cover, closed except when accessed	same
EFR	roof drains will have a 90% slotted fabric cover	same
EFR	each guide pole well will have gasketed sliding cover or flexible fabric seal	pole float system, pole sleeve system, internal sleeve emission control system,
EFR	unslotted guide poles will have gasketed caps, closed during gauging or sampling	
EFR	slotted guide poles will have gasketed float or comparable	
EFR	metallic shoes one end extend into the stored liquid, the other extend 24 inches above liquid	same
EFR	no holes, tears or openings in seal shoe, fabric, or envelope	same

IFR (single seal)	visually inspect for type A failures every 12 months	EFR- gap requirements for seals and deck fittings every year and each time tank is emptied and degassed every three months IFR- measure LEL, and visually inspect the secondary seals every three months, complete gap measurements every ten years and when tank is emptied
IFR (single seal)	visually inspect for type B failures each time tank is emptied at least every ten years	
IFR (double seal)	visually inspect for type B failures each time tank is emptied at least every five years, or type A every 12 months and type B every ten years	
IFR	type A failures repaired within 45 days or empty and remove tank from service	
EFR	gap measurements between wall and primary seal every five years	
EFR	annual gap measurements between wall and secondary seal	
EFR	notification 30 days prior to seal gap measurement	notification 7 days prior

EFR = external floating roof

IFR = fixed roof with internal floating roof

VPCS = vapor processing collection system

IV. IMPACTS OF THE PROPOSED RULE

Emissions Impacts

Amendments to Rule 2.21 include tighter requirements for VOC emissions. However, the tighter requirements are currently being met by the effected sources, so no actual emission reductions are expected.

Cost Effectiveness

California Health and Safety Code Section 40703 requires the District, in the process of the adoption of any rule or regulation, to consider and make public its findings related to the cost effectiveness of the rule requirements. Proposed amendments to Rule 2.21 are not expected to impose a financial burden to any existing source.

Socioeconomic Impacts

California Health and Safety Code Section 40728.5 (a) requires the District, in the process of the adoption of any rule or regulation, to consider the socioeconomic impact if air quality or emission limits may be significantly affected. However, districts with a population of less than 500,000 persons are exempt from the provisions of Section 40728.5 (a). The District's population is estimated to be approximately 287,000 and well below the 500,000 person threshold. Therefore, a socioeconomic analysis for this rulemaking is not required.

Incremental Cost Effectiveness

Health and Safety Code Section 40920.6 requires an assessment of the incremental cost-effectiveness for proposed regulations relative to ozone, CO, SOx, NOx, and their precursors. Incremental cost-effectiveness is defined as the difference in control costs divided by the difference in emission reductions between two potential control options that can achieve the same emission reduction goal of a regulation. The proposed amendments do not require any additional control options to be adopted. Therefore, the incremental cost-effectiveness analysis does not apply to this rulemaking because two potential control options are required for the analysis.

V. ENVIRONMENTAL IMPACTS OF METHODS OF COMPLIANCE

California Public Resource Code Section 21159 requires the District to perform an environmental analysis of the reasonably foreseeable methods of compliance. The analysis must include the following information for the proposed amendments to Rule 2.21:

1. An analysis of the reasonably foreseeable environmental impacts of the methods of compliance.
2. An analysis of the reasonably foreseeable mitigation measures.
3. An analysis of the reasonably foreseeable alternative means of compliance with the rule or regulation.

Table 4 lists all reasonably foreseeable compliance methods, the environmental impacts of those methods, and measures that could be used to mitigate the environmental impacts.

Environmental Impacts, Mitigation Measures, and Alternatives

Compliance Methods	Reasonably Foreseeable Environmental Impacts	Reasonably Foreseeable Mitigation Measures
No New Requirements	Air Quality Impacts: All compliance methods are aimed at limiting VOC emissions	No mitigation necessary
	Water Impacts: No impact	
	Human Health Impacts: With less emissions of VOCs, there is expected to be less emissions of Hazardous Air Pollutants (HAPs)	
	Solid Waste Disposal Impacts: No impact	
	Noise Impacts: No impact	

This analysis demonstrates the adoption of amendments to Rule 2.21 will not have a significant effect on the environment or humans due to unusual circumstances. In addition,

the amendments to proposed Rule 2.21 are an action taken to protect the environment. Overall, the proposed revisions to Rule 2.21 strengthen the VOC control requirements for the storage and transfer of organic liquids within the District. Because the revisions to Rule 2.21 are more stringent and will not have a detrimental affect on the environment, staff have determined that the project is categorically exempt from the requirements of the California Environmental Quality Act (CEQA) pursuant to Section 15308, Actions by Regulatory Agencies for Protection of the Environment. Staff prepared a Notice of Exemption (NOE) to meet the CEQA Guidelines (Attachment B).

VI. REGULATORY FINDINGS

Section 40727(a) of the California Health & Safety Code (H&SC) requires that prior to adopting or amending a rule or regulation, an air district's board make findings of necessity, authority, clarity, consistency, nonduplication, and reference. The findings must be based on the following:

1. Information presented in the District's written analysis, prepared pursuant to H&SC Section 40727.2;
2. Information contained in the rulemaking records pursuant to H&SC Section 40728; and
3. Relevant information presented at the Board's hearing for adoption of the rule.

The required findings are:

Necessity: The rule amendment is required in order to correct the deficiency cited by the EPA for approval of Rule 2.21 into the SIP. The amendment needs to be corrected by 7/22/05 to avoid penalties. The additional amendments have been added for rule clarity or to satisfy "all feasible measures" requirements.

Authority: The District is authorized to adopt rules and regulations by California Health and Safety Code, Sections 40001, 40702, 40716, 41010 and 41013. (H&SC Section 40727 (b)(2)).

Clarity: District staff have reviewed the proposed rule and determined that it can be easily understood by the affected industry. In addition, the record contains no evidence that the persons directly affected by the rule cannot understand the rule. (H&SC Section 40727(b)(3)).

Consistency: The proposed rule does not conflict with and is not contradictory to, existing statutes, court decisions, or state or federal regulations. (H&SC Section 40727(b)(4)).

Non-Duplication: The proposed rule does not duplicate any state laws or regulations, regarding the attainment and maintenance of state and federal air quality limits. (H&SC Section 40727(b)(5)).

Reference: The proposed rule is consistent with the provisions of the Clean Air Act.

VII. PUBLIC COMMENTS AND STAFF RESPONSES

Staff held a public workshop on March 24, 2005, to discuss the proposed amendments to Rule 2.12. Notification was sent to surrounding Air Districts, City Managers within the YSAQMD, building/planning/community development departments within the YSAQMD, all city and county libraries within the YSAQMD, and any affected source. The workshop notice was published in the Vacaville Reporter, Woodland Democrat, and the Davis Enterprise.

A copy of the public workshop notice, the draft staff report, and draft rule language, were posted on the Yolo-Solano AQMD's web page.

A PUBLIC WORKSHOP

The public workshop was attended by one (1) representative from BP west Coast Products LLC (BP), one (1) representative from Calpine, and one(1) staff member from the Sacramento Metropolitan Air Quality Management District (SMAQMD).

District Staff will attempt to paraphrase the verbal comments that were discussed during the workshop and respond to each comment.

Comment 1. Debra Portello, BP, expressed concern with the District's approach to taking out the maintenance exemption and relying on Rule 5.2 to protect the facility from a violation when the facility needs to perform unscheduled maintenance. It was pointed out that there are instances when minor maintenance needs and should be performed to prevent equipment from failing or to prevent a violation of a rule. There was concern because BP is a Title V Facility and the EPA does not recognize the upset breakdown rule. There was also concern because it seemed there was some discretion as to what may be considered a breakdown and what might need a variance. Being a Title V facility, they do not want the possibility of that being left up to interpretation. Debra believed there needed to be a mechanism in place in the rule to allow these facilities to perform preventative maintenance.

Response 1. The District acknowledged BP concerns and revised Rule 2.21, to include a limited exemption for preventative maintenance provided specific conditions are met. The District also followed the suggestion to include a definition of preventative maintenance to clarify what would be allowed and what wouldn't.

Comment 2. Kevin Williams, SMAQMD, pointed out that the definition of an upset breakdown condition in Rule 5.2 could be interpreted to only applying to an event which has already caused a failure or violation instead of the correction of a condition which may lead to an emissive event.

- Response 2. The District revised Rule 2.21 to include a limited exemption for preventative maintenance. The District will continue to follow Rule 5.2 if a situation arises where a violation to the Rule 2.21 has already occurred.
- Comment 3. General, Section 311, Other Gasoline Loading needed to be clear that it did not refer to gasoline loading at bulk terminals or bulk plants.
- Response 3. Section 311, Other Gasoline Loading was changed to Gasoline Loading Other than Bulk Terminal or Bulk Plant to avoid confusion.

B. WRITTEN COMMENTS

CARB

Prior to the Public Workshop, the ARB submitted comments to the proposed changes for Rule 2.21. Following is a summary of the comments and responses. The complete transmittal is included in Appendix D.

- Comment 1. The ARB suggested the District use 'actual storage temperature' instead of 'actual storage conditions'. The ARB also suggested a definition be included based on methodology in the American Petroleum Institute Manual of the Petroleum Measurement Standard.
- Response 1. The District is not adding a definition for actual storage temperature based on the American Petroleum Institute Manual of the Petroleum Measurement Standards Chapter 7 Temperature Determination because it is not publicly available. The District did update the test method cited in 602 from a historical to an active method.
- Comment 2. The ARB commented the Rule does not appear to apply to storage of organic liquids between 0.5 and 1.5 psia in tanks between 250 and 40,000 gallons. They felt provisions needed to be included.
- Response 2. The District talked with ARB staff regarding this comment. The District purposefully kept Section 312 Other Organic Liquid Loading applying to organic liquids with a TVP of 1.5 or greater. The District did not identify a significant source of emissions from the loading of organic liquids with a TVP between 0.5 and 1.5 psia. Sources which load or store organic liquids which have a TVP between 0.5 and 1.5 psia still have to comply with Sections 313 Switch Loading and 314 Operating Practices.
- Comment 3. The ARB felt the District should use a gas leak standard of no greater than 1,000 parts per million by volume (ppmv) above background to define a leak.
- Response 3. The District has changed the gas leak standard to a reading of 1,000 ppmv above background on a calibrated hydrocarbon analyzer.

Comment 4. The definition of organic liquid needs to be consistent with the other components of the rule.

Response 4. The definition has been changed to include 0.5 psia to be consistent with the rest of the rule.

Comment 5. ARB commented the language in Section 311 was unclear as to whether any of the subsections needed to be complied with or if all the following subsections needed to be complied.

Response 5. Language was amended to clarify all the subsections needed to be followed for compliance.

Comment 6. ARB commented the language in Section 312 was unclear as to whether any of the subsections needed to be complied with or if all the following subsections needed to be complied.

Response 6. Language was amended to clarify all the subsections needed to be followed for compliance.

Terminals

In response to discussion at the public workshop, District revised Rule 2.21 language and submitted to both District terminal representatives. They reviewed the language and submitted comments. The letters are included in Appendix D. Following is the District's response to the comments submitted.

The District would like to thank both Debra Portello, BP and Christine Davies, Shell Oil Products for reviewing and commenting on the pending revisions to Rule 2.21, Organic Liquid Storage and Transfer.

In response to the comments from BP dated April 4, 2005, and Equilon Enterprises LLC dba Shell Oil Products US dated April 5, 2005, the District has revised the rule language. Section 111 Limited Exemption -Scheduled Preventative Maintenance was amended by identifying sections 302, 303 and 304 as sections which may require a limited exemption during the preventative maintenance period. The District did not make the requested amendments to section 111.2 because the District could not identify any reason for the change. The requested revision to section 111.3 was made to clarify the procedure for replacing tank seal sections. The District identified the rule as being more restrictive with the addition of section 111.3. The District amended the definition of preventative maintenance. The District combined suggested language from section 111 and the suggested language for the definition. However, the District did not include 'removing' in the description of preventative maintenance. The District believes that including removing as a descriptor of preventative maintenance may leave too much leeway in the definition.

The District would also like to address the District's policy on equipment failures. Rule 5.2 Upset/Breakdown Conditions: Emergency Variance outlines two separate procedures which

are used in different circumstances. When a source has an unforeseeable equipment failure which meets the criteria outlined in Rule 5.2 201.1-5, the source has until the end of the production run or 24 hours to correct the problem or else the source is required to shut down the process. For a tank the District interprets shutting down the process as stopping product filling and emptying. The policy does not require the tank to be emptied and degassed. The District feels sources have the ability to stop the flow of product into or out of a tank within a 24 hour time frame.

The District will not include a provision allowing limited repairs within a specified time period. The District feels this may conflict with the EPA's policy for excess emissions during malfunction. The District feels the proposed provision is too broad. The District does not want to include a section which may be interpreted as allowing a source to be out of compliance for a specified time period.

The District does not feel the proposed changes of lowering the applicable vapor pressure for organic liquid, and changing the gas leak definition will impose any new burden to existing sources. The District researched each potential source to see if lowering the applicable vapor pressure from 1.5 psia to 0.5 psia would include a category not previously subject to the Rule. The District concluded no action was needed from any source to achieve the new requirement. Furthermore, changing the standard in the gas leak definition does not impose new requirements for the terminals. Bulk terminals are subject to Rule 2.23 which already considers a gas leak as a detection of 1,000 ppm above background of gaseous hydrocarbon as methane. This standard and repair time frame are already listed as a permit condition.

The District concluded all the new proposed requirements for Rule 2.21 are already being met by the applicable sources in the District. Therefore there are no actual emission reductions, or costs associated with proposed Rule 2.21.

EPA

After reviewing the comments from the letters received from the terminals, the rule language was revised again and submitted to the EPA for review. The EPA reviewed the language and submitted comments. The letter is included in Appendix D. Following is the District's response to the comments submitted.

The District has incorporated all the changes recommended by the EPA which were identified as approvability issues. The District included the suggested language changes to Sections 111, 111.1, 111.5, 111.6, and 220. The District has amended the language in Section 501, to clarify the requirements of the section are not for the purpose of demonstrating compliance with Section 301 of the rule. The new language specifies maintenance plans need to be submitted only by facilities who are subject to the requirements of Section 301. Section 301 outlines standards for tanks with capacities greater than 40,000 gallons. The District has also included the language provided by the EPA for allowing alternative tests to be performed in place of another test, and language clarifying policy when multiple tests are specified for testing.

The District reviewed the recommended suggestions from the EPA which were not identified as approvability issues. The District opted not to include a requirement specifying the District needed to be notified 3-7 days in advance when preventative maintenance will be performed. The District will require notification prior to the time the preventative maintenance is performed but feels a time period of that length is not needed at this point because District Staff have the resources to witness the maintenance if needed with very little prior notice, and the District wants to make sure the source has the ability to perform the maintenance as expeditiously as possible.

The District also decided not to move the language specifying at what point an Authority to Construct (ATC) is needed during the replacement of a seal. The District agrees the location of the language is not ideal, but feels it suits the purpose of the stipulation when placed in Section 111.3. However, the District did change the requirement of obtaining an ATC when the replacement of a seal section exceeds the cumulative length of 50% of the tank circumference to 20% as strongly suggested by the EPA during a phone conversation.

C. JULY 13, 2005 BOARD MEETING

At the July 13, 2005 Board meeting, staff gave a presentation on the proposed rule amendments. The public notice for the hearing erroneously left off the statement that written public comments are invited to be submitted. The Board did not take action on the proposed rule amendments but instead directed staff to re-notice and bring back for consideration at the next Board meeting.

District Staff will attempt to paraphrase the verbal public comments that were made during the meeting and respond to each comment.

Comment 1. Mr. David Moralez stated that he believes section 102 is lacking because one of the major requirements of this rule is to have a vapor recovery system and this is not listed in the applicability section, instead those requirements are in section 304.

Response 1. Applicability for District rules is not based on whether a facility operates with one of the required control methods, rather on what type of equipment is being operated or how the equipment is being operated. For the specific comment cited, the rule is applicable to terminals, independent of whether they have control equipment (e.g. vapor recovery system, floating roof tank) or not. If the rule is applicable, then section 300 - STANDARDS would specify the actual requirements for the equipment, of which one option is a Vapor Recovery System.

It would not be appropriate to change the applicability to make it based on whether equipment is controlled by a vapor recovery system.

Comment 2. Mr. Moralez stated that BP commented on the revision to section 111.2 which requires that the tank be in compliance with "all District regulations" prior to undergoing preventative maintenance (as opposed to requiring that

the tank be in compliance with just this rule) and that what the District has proposed is sort of a catch all.

- Response 2. This proposed language was received from the EPA and this is appropriate language.

It would not be appropriate to change the prerequisites for when a facility can qualify for a limited exemption for preventative maintenance.

- Comment 3. Mr. Morales stated that for section 304, vapor recovery system, that this requirement is out of the H&SC and it refers to a certification standard CP-203 and it is specified in pounds per 1,000 gallons, so when you do the conversion to 95% efficiency you assume an initial inlet concentration, but you don't really know what that is for a specific facility. ARB says in their document that they choose a number of 0.84 lbs/1,000 gallons so to be consistent with where this requirement comes out of, is actually in lbs/1000 gal and it's a much tighter requirement because when you do the efficiency calculation, somebody could say that they want to measure their specific inlet concentration because they don't believe the ARB assumption is valid with their facility, so he thinks this would be a good change to make because its not consistent with the CARB standard.

For the bulk plant, it is specified in % efficiency, the CP-203.1 the 0.29 lbs/1,000 gallons versus what the 95% is listed as.

- Response 3. Mr. Morales appears to have confused sections 304 for vapor recovery systems serving storage tanks and section 308 for vapor recovery systems for terminal loading. The requirement in section 304 to control emissions from a storage tank by 95% is not based out of the H&SC. Rule 2.21 section 304.1 specifically states that the test methods that are appropriate are those in section 603 (EPA Methods 2A or 2B), section 604 (EPA Method 18), and section 606 (EPA Methods 25A or 25B).

Method CP-203 is actually a method for determining an emission factor from a loading process, not a storage process. In section 308 for terminals, the standard is in units of lbs/1,000 gallons and the test required annually (per section 502.3) is test method TP-203.1.

It would not be appropriate to change the standard in section 304 to a limit based on lbs/1,000 gallons.

As a side note, no issues were identified related to this section by the affected sources, the ARB, or the EPA and there are currently no tanks located at the terminals in our District that use this option of a vapor recovery system for controlling emissions from a tank.

- Comment 4. Mr. Morales stated that for section 315 there is an inconsistency because

one of the proposed changes was to set the leak standard for fugitive at 1,000 parts per million by volume (ppmv), however in section 315 the standard was left at 10,000 ppmv.

- Response 4. The requirement for 1,000 ppmv is used to define a “gas leak” and therefore what is considered “gas tight”. The specific requirement for equipment to be “gas tight” is in section 308.2 which refers to loading equipment and 309.2 which refers to transfer equipment. The 10,000 ppmv standard in section 315 applies to storage tanks being cleaned and therefore it is not inconsistent to have a different standard.

It would not be appropriate to change the standard in section 315 to 1,000 ppmv.

- Comment 5. Mr. Morales stated that in the old section 607, that the existing rule actually specifies a test method for gasoline bulk plants and not a certification, that the test method is consistent with the associated test method for gasoline terminals, and that by deleting this requirement the rule has been relaxed.

- Response 5. Per discussions with the ARB and review of other District’s organic liquid loading rules, the appropriate testing for bulk plants is an initial certification using CP-202 and ongoing testing using methods of TP-201 including Static Pressure Decay, Air to Liquid Ratio, and the Ten Gallon Per Minute Limitation Compliance Verification Procedure to verify that the certified equipment is operating properly. The three bulk plants permitted in the District have each been CARB certified (initial) and require the above mentioned annual testing, therefore deleting the TP202.1 will not be a relaxation.

It is appropriate to delete the annual test using CARB test procedure TP-202.1.

VIII. REFERENCES

1. Code of Federal Regulations, Title 40, Part 60, Subpart Ka, Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984
2. Code of Federal Regulations, Title 40, Part 60, Subpart Kb, Standards of Performance for Volatile Organic Liquid storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984
3. Code of Federal Regulations, Title 40, Part 60, Subpart XX, Standards of Performance for Bulk Gasoline Terminals

4. Code of Federal Regulations, Title 40, Part 63, Subpart R, National Emissions Standards For Hazardous Air Pollutants For Source Categories
5. Code of Federal Regulations, Title 40, Part 65, Subpart C, Storage Vessels
6. SJVAPCD, Draft Staff Report, Proposed Amendments to Rule 4623 (Storage of Organic Liquids) (March 9, 2004)
7. U.S. Environmental Protection Agency, Memorandum: State Implementation Plans (SIPS): Policy Regarding Excess Emissions During Malfunctions, Startup, and Shutdown
8. U.S. Environmental Protection Agency, Region IX Air Division, Technical Support Document, EPA's Analysis of Yolo-Solano Air Quality Management District's Rule 2.21, Organic Liquid Storage and Transfer (November 2002)
9. Yolo-Solano Air Quality Management District, Proposed Revisions to Rule 2.21, Vapor Control For Organic Liquid Storage and Transfer Staff Report (May 29, 2002)

ATTACHMENT A

**PROPOSED RULE 2.21, ORGANIC LIQUID STORAGE AND
TRANSFER
STRIKE-OUT UNDERLINE VERSION**

**RULE 2.21
ORGANIC LIQUID STORAGE AND TRANSFER**

ADOPTED March 23, 1994
REVISED June 12, 2002
REVISED September 14, 2005

INDEX

100 GENERAL

- 101 PURPOSE
- 102 APPLICABILITY
- 110 EXEMPTION - SMALL CAPACITY STORAGE TANKS
- 111 LIMITED EXEMPTION - SCHEDULED PREVENTATIVE MAINTENANCE
- 112 EXEMPTION - SUBMERGED FILL PIPE
- 113 EXEMPTION - PHARMACEUTICAL MANUFACTURING OPERATIONS

200 DEFINITIONS

- 201 AIR POLLUTION CONTROL OFFICER (APCO)
- ~~202 BULK PLANT~~
- ~~203~~2 DECK FITTING
- ~~204~~3 EXTERNAL FLOATING ROOF TANK
- ~~205~~4 FIXED ROOF TANK
- 2065 GAS LEAK
- 2076 GAS TIGHT
- ~~208~~7 GASOLINE
- 208 GASOLINE BULK PLANT
- 209 GAUGE FLOAT
- 210 GAUGE HATCH/SAMPLE WELL (PORTS)
- 211 GUIDEPOLE GUIDE POLE
- 212 INTERNAL FLOATING ROOF TANK
- 213 LEAK FREE
- 214 LIQUID MOUNTED SEAL
- 215 LOADING FACILITY
- 216 MECHANICAL SHOE SEAL
- 217 ORGANIC LIQUID
- 218 PRESSURE TANK
- 219 PRESSURE-VACUUM VALVE
- 220 PREVENTATIVE MAINTENANCE
- ~~220~~1 REID VAPOR PRESSURE

Yolo-Solano AQMD
~~Adopted March 23, 1994~~
~~Revised June 12, 2002~~
Revised September 14, 2005
(Draft August 10, 2005)

- 22~~1~~2 RESILIENT TOROID SEAL
- 22~~2~~3 RIM VENT
- 22~~3~~4 ROOF DRAIN
- 22~~4~~5 ROOF LEG
- 22~~5~~6 STORAGE TANK
- 22~~6~~7 SUBMERGED FILL PIPE
- 22~~8~~ SWITCH LOADING
- 22~~7~~9 TERMINAL
- 22~~8~~30TRANSPORT EQUIPMENT
- 22~~9~~31TRANSPORT VESSEL
- 23~~0~~2 TRUE VAPOR PRESSURE
- 23~~1~~3 VACUUM BREAKER
- 23~~2~~4 VAPOR RECOVERY SYSTEM
- 23~~3~~5 VIEWPORT
- 23~~4~~6 VISIBLE GAP
- 23~~5~~7 VOLATILE ORGANIC COMPOUND

300 STANDARDS

- 301 STORAGE TANK GREATER THAN 40,000 GALLONS CAPACITY
- 302 EXTERNAL FLOATING ROOF TANK
- 303 INTERNAL FLOATING ROOF TANK
- 304 VAPOR RECOVERY SYSTEM
- 305 DECK FITTING
- 306 MECHANICAL SHOE SEAL AND SECONDARY SEAL
- 307 RESILIENT TOROID OR LIQUID MOUNTED SEAL AND SECONDARY SEAL
- 308 TERMINAL LOADING
- 309 GASOLINE BULK PLANT LOADING
- 310 TRANSPORT VESSEL
- 311 OTHER GASOLINE LOADING
- 31~~1~~2 OTHER ORGANIC LIQUID LOADING
- 31~~2~~3 SWITCH LOADING
- 31~~3~~4 OPERATING PRACTICES
- 31~~4~~5 STORAGE TANK CLEANING

~~400 ADMINISTRATIVE REQUIREMENTS~~

- ~~401 COMPLIANCE SCHEDULE~~

500 MAINTENANCE, MONITORING, REPORTING, AND RECORD KEEPING

- 501 MAINTENANCE

Yolo-Solano AQMD
Adopted March 23, 1994
Revised June 12, 2002
Revised September 14, 2005
(Draft August 10, 2005)

- 502 MONITORING
- 503 REPORTING
- 504 RECORD KEEPING

600 TEST METHODS AND PROCEDURES

- 601 ASTM METHOD D-323-99a
- 602 ASTM METHOD D-2879-97(2002)(e1)
- 603 EPA METHODS 2A AND 2B
- 604 EPA METHOD 18
- 605 EPA METHOD 21
- 606 EPA METHODS 25A AND 25B
- ~~607 CARB TEST PROCEDURE TP-202.1~~
- ~~608~~7 CARB TEST PROCEDURE TP-203.1
- 608 CARB TEST PROCEDURES TP-201.1B, TP-201.1C, TP-201.1D, TP-201.1E, TP-201.3, TP-201.3B
- 609 ALTERNATIVE TEST METHODS
- 610 MULTIPLE TEST METHODS

Yolo-Solano AQMD
~~Adopted March 23, 1994~~
~~Revised June 12, 2002~~
Revised September 14, 2005
(Draft August 10, 2005)

100 GENERAL

- 101 **PURPOSE:** To limit emissions of volatile organic compounds from the storage and transfer of organic liquids.
- 102 **APPLICABILITY:** This rule applies to any storage tank with a capacity of greater than 250 gallons, any gasoline bulk plant, any terminal, or any transport vessel that stores or transfers an organic liquid with a true vapor pressure of ~~1.5~~ 0.5 psia or greater. For the purposes of this rule, the organic liquid's true vapor pressure may be obtained from Table ~~2~~ 1, provided that the actual storage temperature of the organic liquid does not exceed the corresponding maximum temperature specified or, may be determined according to the test method specified in Section 602, under actual storage conditions.
- 110 **EXEMPTION - SMALL CAPACITY STORAGE TANKS:** The provisions of this rule do not apply to stationary storage tanks having a capacity of equal to or less than 250 gallons.
- 111 **LIMITED EXEMPTION - SCHEDULED PREVENTATIVE MAINTENANCE:** ~~The provisions of Section 301 shall not apply to tanks involved in periodic scheduled maintenance or replacement operations of primary or secondary seals that cause the emissions of volatile organic compounds. Such periodic scheduled maintenance shall be done in accordance with a plan as defined in Section 501 which has prior written approval of the Air Pollution Control Officer.~~
The provisions of sections 302, 303, 304, 305, 306, and 307 shall not apply to tanks undergoing preventative maintenance provided all of the following conditions are met:
- 111.1 The operator shall notify the APCO prior to performing preventative maintenance. In this notification, the operator shall identify the affected tank, list the requirement(s) the operator wishes to exempt, explain how the maintenance will prevent compliance with the requirement(s), specify the expected duration of maintenance, describe the measure(s) the operator will

take to minimize emissions as much as practicable during maintenance, and explain the anticipated effect of not performing the maintenance.

111.2The tank is in compliance with all District regulations prior to undergoing preventative maintenance.

111.3Replacement of any tank seal section must comply with the applicable provisions of this rule and the District must receive written notification of the tank permit number and seal type at least three days prior to installation. Replacement of seal sections having a cumulative length greater than 20% of the tank circumference would be subject to the permitting provisions in Rule 3.1.

111.4The tanks shall not receive or empty product while undergoing preventative maintenance.

111.5Emissions shall be minimized to the maximum extent practicable during preventative maintenance. Any mitigation measure(s) shall be implemented immediately.

111.6All preventative maintenance shall be accomplished as expeditiously as practicable and in no case exceed 72 hours per event. The time allowed under this exemption shall not exceed 12 days annually per tank.

111.7Records of the preventative maintenance shall be kept in accordance with Sections 503.4, and 504 of this rule.

112 **EXEMPTION - SUBMERGED FILL PIPE:** Storage tanks having a vapor control system as specified in Sections 302 or 303 are exempt from the requirement for a submerged fill pipe.

113 **EXEMPTION - PHARMACEUTICAL MANUFACTURING OPERATIONS:** The provisions of this rule shall not apply to pharmaceutical manufacturing operations applicable to Rule 2.35.

200 DEFINITIONS

- 201 **AIR POLLUTION CONTROL OFFICER (APCO):** The Air Pollution Control Officer of the Yolo-Solano Air Quality Management District.
- ~~202 **BULK PLANT:** Any loading facility where primary delivery of an organic liquid to a storage tank is other than by pipeline.~~
- 2032 **DECK FITTING:** Any functional or operational device attached to an external or internal floating roof including but not limited to an access hatch, fixed roof support column and well, gauge float, gauge hatch, sample well, guidepole, ladder and well, rim vent, roof drain, roof leg, or vacuum breaker.
- 2043 **EXTERNAL FLOATING ROOF TANK:** A storage tank equipped with a floating roof exposed to the atmosphere that floats on the surface of the stored liquid. The floating roof is equipped with deck fittings, a primary seal, and a secondary seal.
- 2054 **FIXED ROOF TANK:** A storage tank with a roof that is permanently affixed to the shell of the storage tank.
- 2065 **GAS LEAK:** A reading in excess of ~~±0,000~~±1,000 ppmv, above background, on a portable hydrocarbon analyzer that is calibrated with methane as determined in accordance with the test method specified in Section 605.
- 2076 **GAS TIGHT:** A condition without a gas leak.
- 2087 **GASOLINE:** Any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 4.0 pounds per square inch or greater, determined in accordance with the test method specified in Section 601, and used as a motor vehicle fuel or any fuel which is commonly or commercially known or sold as gasoline.
- 208 **GASOLINE BULK PLANT:** Any gasoline loading facility where

primary delivery of gasoline to a storage tank is other than by pipeline.

- 209 **GAUGE FLOAT:** A device to indicate the level of the liquid within a storage tank. The float rests on the liquid surface inside a gauge well in the storage tank.
- 210 **GAUGE HATCH/SAMPLE WELL (PORTS):** Consists of a pipe sleeve equipped with a self-closing gasketed cover and allows hand-gauging or sampling of the stored liquid. The gauge hatch/sample port is usually located beneath the gauger's platform, which is mounted on top of the tank shell. A cord may be attached to the self-closing gasketed cover so that the cover can be opened from the platform.
- 211 **GUIDEPOLE:** An anti-rotational device that is fixed to the top and bottom of a storage tank, passing through a well in a floating roof. A guidepole may be solid or be equipped with slots or holes for gauging purposes.
- 212 **INTERNAL FLOATING ROOF TANK:** A storage tank equipped with a fixed roof and a floating roof that floats on the surface of the liquid being contained (but not necessarily in complete contact with it). The floating roof is equipped with deck fittings, a primary seal, and a secondary seal.
- 213 **LEAK FREE:** A liquid leak of less than three drops per minute from any single leak source other than the liquid fill line and vapor line disconnect operations.
- 214 **LIQUID MOUNTED SEAL:** A primary seal mounted in full contact with the liquid in the annular space between the tank shell and the floating roof.
- 215 **LOADING FACILITY:** Any organic liquid or gasoline loading rack or set of such racks that load organic liquid or gasoline into transport vessels, 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 persons under common control.

- 216 **MECHANICAL SHOE SEAL:** A metallic sheet (the shoe) that is held vertically against the vertical tank wall. The shoe is connected by braces to the floating roof and is held tightly against the wall by springs or weighted levers. A flexible coated fabric (envelope) is suspended from the shoe seal to the floating roof to form a vapor barrier over the annular space between the roof and the primary seal.
- 217 **ORGANIC LIQUID:** Any liquid which contains any volatile organic compound or mixtures of volatile organic compounds with a true vapor pressure of ± 0.5 psia or greater under actual storage or loading conditions except liquefied petroleum gases.
- 218 **PRESSURE TANK:** A storage tank that maintains working pressures sufficient at all times to prevent organic vapor or gas loss to the atmosphere, except under emergency conditions.
- 219 **PRESSURE-VACUUM VALVE:** A valve for relieving any pressure or vacuum exceeding acceptable limits.
- 220 **PREVENTATIVE MAINTENANCE:** Tightening, adjusting, repairing, or replacing a component of a vapor control device, tank roof, roof fitting, or tank seal that has become worn due to normal use. The purpose of preventative maintenance is to prevent equipment breakdowns and to minimize emissions, as much as practicable, over the useful life of the component.
- 2201 **REID VAPOR PRESSURE:** The absolute vapor pressure of an organic liquids except liquified petroleum gases, as determined in accordance with the test method specified in Section 601.
- 2212 **RESILIENT TOROID SEAL:** A core of open-cell foam encapsulated in a coated fabric that is attached to a mounting on the deck perimeter, and is continuous around the floating roof circumference.

- 2223 **RIM VENT:** Rim vents are used on storage tanks equipped with a seal design that creates a vapor pocket in the seal and rim area, such as a mechanical shoe seal. The vent is used to release excess pressure or vacuum that is present in the vapor space bounded by the primary-seal shoe, the floating roof rim, the primary seal fabric, and the liquid level. Rim vents usually consists of weighted pallets that rest on a gasketed cover.
- 2234 **ROOF DRAIN:** A drain on the roof of an external floating roof tank that is used to remove rainwater from the floating roof. 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.
- 2245 **ROOF LEG:** An adjustable or fixed leg that is attached to the floating roof deck to support or hold the floating roof deck at a predetermined distance off the storage tank bottom to prevent damage to the fittings located underneath the deck and to allow for storage tank cleaning or repair. For adjustable legs, the load-carrying element passes through a well or sleeve in the deck.
- 2256 **STORAGE TANK:** Any above-ground stationary container designed and equipped for storage of an organic liquid.
- 2267 **SUBMERGED FILL PIPE:** Any discharge pipe or nozzle which meets either of the following conditions:
- 2267.1 Where the tank is filled from the top, the end of the discharge pipe or nozzle is totally submerged when the liquid level is 6 inches from the bottom of the tank.
- 2267.2 Where the tank is filled from the side, the end of the discharge pipe or nozzle is totally

submerged when the liquid level is 24 inches from the bottom of the tank.

228 **SWITCH LOADING:** Loading diesel fuel into a delivery vessel or storage tank whose previous load was gasoline; or loading any organic liquid not subject to this rule into a delivery vessel or storage tank whose previous load was an organic liquid subject to this rule.

2279 **TERMINAL:** Any loading facility where delivery of an organic liquid to a storage tank is primarily by pipeline. In the event the pipeline is not operational, delivery of an organic liquid to the storage tanks may be by transport vessel. If other organic liquids are added to the stock organic liquid, such additives are primarily delivered by transport vessel.

~~2283~~0**TRANSFER EQUIPMENT:** All components of the liquid loading line between the liquid pump and the transporting vessel, and the vapor return line from the transporting vessel to the storage tank, or to and including the vapor recovery system.

~~2293~~1**TRANSPORT VESSEL:** Any cargo tank, tank truck, trailer, or railroad tank car that is designed and equipped to receive and transport organic liquid.

2302 **TRUE VAPOR PRESSURE:** The equilibrium partial pressure exerted by a organic liquid as determined in accordance with the test method specified in Section 602.

2313 **VACUUM BREAKER:** A device that equalizes the pressure of the vapor space across the floating roof deck as the deck is either being landed on or 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 deck approaches. When in contact with the tank bottom, the guide leg mechanically opens the breaker by lifting the cover off the well; otherwise the cover closes the well. Because the purpose of the vacuum

breaker is to allow for the free exchange of air and/or vapor, the well does not extend appreciably below the deck.

2324 **VAPOR RECOVERY SYSTEM:** Any vapor gathering system which is capable of collecting and returning discharged VOC vapors and gases during loading of organic liquids into cargo tanks or transport vessels, back to a stationary storage tank, or into an enclosed process system.

2335 **VIEWPORT:** An accessible opening in the fixed roof of an internal floating roof tank that measures at least 30 inches on each side or at least 30 inches in diameter.

2346 **VISIBLE GAP:** An opening which exceeds 1/8 inch.

2357 **VOLATILE ORGANIC COMPOUND (VOC):** For the purposes of this rule, has the same meaning as in Rule 1.1, General Provisions and Definitions.

300 STANDARDS

301 **STORAGE TANK GREATER THAN 40,000 GALLONS CAPACITY:** A person shall not store organic liquid in any stationary storage tank of more than 40,000 gallons capacity, unless such storage tank is a pressure tank or is designed and equipped with one of the vapor loss control devices specified in Sections 302, 303, or 304. The owner or operator of any storage tank subject to the requirements of Sections 302 or 303 shall meet the following requirements:

301.1 The true vapor pressure of the organic liquid stored in the tank is less than 11.0 psia under actual storage conditions as determined in accordance with the test method specified in Section 602.

301.2 The organic liquid is not visible above the floating roof.

301.3 The floating roof is in contact with the liquid contents (but not necessarily in complete contact with

it) at all times except when the storage tank is completely emptied, and subsequently refilled. During this period, ~~where emptying or refilling is~~ shall be a continuous process. ~~Written notification shall be provided to the APCO at least 7 days prior to landing a floating roof on its legs.~~

301.4 ~~Written notification shall be provided to the APCO at least 7 days prior to landing a floating roof on its legs.~~

301.45 After June 12, 2002, the installation of a new or replacement primary seal shall be a mechanical shoe seal or liquid mounted seal. For existing resilient toroid seals, replacement means adding, replacing, or altering more than 5% of the seal foam or cover material.

302 **EXTERNAL FLOATING ROOF TANK:** If the vapor loss control device used to comply with Section 301 is an external floating roof tank, the closure device shall meet the following requirements:

302.1 Consist of two seals, one above the other; the one below shall be referred to as the primary seal, and the one above shall be referred to as the secondary seal. The primary and secondary seal shall comply with the requirements specified in Sections 306 and 307, as applicable. Deck fittings shall comply with the requirements specified in Section 305.

303 **INTERNAL FLOATING ROOF TANK:** If the vapor loss control device used to comply with Section 301 is an internal floating roof tank, the closure device shall meet the following requirements:

303.1 Consist of two seals, one above the other; the one below shall be referred to as the primary seal, and the one above shall be referred to as

the secondary seal. The primary and secondary seal shall comply with the requirements specified in Sections 306 and 307, as applicable. Deck fittings shall comply with the requirements specified in Section 305.

303.2 Vapor concentrations above an internal floating roof shall not exceed 30% of its lower explosive limit (LEL).

303.3 Effective March 23, 1995, all internal floating roof tanks subject to the provisions of this rule that have been degassed shall be equipped with at least 3 viewing ports. The viewports shall be installed on the fixed roof an equidistance apart and in such a manner so that each viewport provides a unobstructed view of the tank wall and roof seal. An alternate number or size of viewports may be approved at the discretion of the APCO.

304 **VAPOR RECOVERY SYSTEM:** If the vapor loss control device used to comply with Section 301 is a vapor recovery system, such system shall collect and process all organic vapors and gases and meet the following requirements:

304.1 The system shall have an abatement efficiency of at least 95% by weight as determined annually in accordance with the test methods specified in Section 603 and Sections 604 and 606, as applicable.

304.2 Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at all times, except during gauging or sampling.

304.3 All piping, fittings, and pressure-vacuum relief valves associated with the fixed roof tank and

the vapor recovery system shall be constructed and maintained in a gas-tight condition unless the pressure within the fixed roof tank exceeds the valve setting pressure.

305 DECK FITTING:

305.1 Internal Floating Roof Tank

- a. Fixed roof support columns and wells shall be equipped with a sliding gasketed cover or with a flexible fabric sleeve.
- b. Ladder wells shall be equipped 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. Slotted and solid guidepoles shall comply with the requirements specified in Section 305.2.h.
- d. Other deck fittings shall comply with the requirements specified in Sections 305.2.b, 305.2.c, and 305.2.g.

305.2 External Floating Roof Tank

- a. Except for slotted or solid guidepoles, vacuum breakers, rim vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid that shall be maintained in a closed position at all times, with no visible gaps, except when the device is in actual use.
- b. Vacuum breakers shall be equipped with a gasket, with no visible gaps, and shall be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

- c. Rim vents shall be equipped with a gasket, with no visible gaps, and shall be set to open only when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.
- d. Each roof drain that is an open-type roof drain shall be equipped with a slotted membrane fabric cover that covers at least 90% of the area opening. The fabric cover must be impermeable if the liquid is drained into the contents of the tank.
- e. External floating roof legs shall be equipped with vapor socks or vapor barriers and be maintained in a gas-tight condition.
- f. Each opening in a floating roof except for vacuum breakers and rim vents shall provide a projection below the liquid surface.
- g. Each access hatch and gauge float well shall be equipped 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.
- h. Acceptable controls for slotted or solid guidepoles are one of the following:
 - (i) Pole Float System
Each opening through the deck of the floating roof for a slotted guidepole shall be equipped with a deck cover, a pole wiper and pole float. The deck cover shall also be equipped with a gasket between the cover and deck.

The wiper or seal of the pole float shall be at or above the height of the pole wiper.

(ii)

Pole Sleeve System

Each opening through the deck of the floating roof for a slotted guidepole shall be equipped with a deck cover, a pole wiper and pole sleeve. The deck cover shall be equipped with a gasket between the cover and deck. The sleeve extends into the stored liquid.

(iii) Internal Sleeve Emission Control System

An internal guidepole sleeve that eliminates the hydrocarbon vapor emission pathway from inside the tank through the guidepole slots to the outside ~~are is~~ is a guidepole cover at the top of the guidepole~~+~~, and a well cover positioned at the top of the guidepole well. ~~The well cover that seals any openings~~ between the well cover and the guidepole (e.g., pole wiper), any openings between the well-cover and any other objects that ~~passes~~ passes through the well cover, ~~and or~~ and any other openings in the top of the guidepole well.

(iv)

Solid Guidepole System

A solid guidepole system includes, a guidepole cover at the top of the guidepole, and a well cover positioned at the top of the guidepole well. The well cover shall ~~that~~ seals any openings between the well cover and the guidepole (e.g., pole wiper), any openings between the well cover and any other objects that passes through the well cover, ~~and~~ or any other openings in the top of the guidepole well.

(v)

Flexible Enclosure System

A flexible device that completely encloses the slotted guidepole and eliminates the hydrocarbon vapor emission pathway from inside the tank through the guidepole slots to the outside air, includes a guidepole cover at the top of the guidepole, and a well cover positioned at the top of the guidepole well. The well cover shall seals any openings between the well cover and the guidepole (e.g., pole wiper), any openings between the well cover and any objects that passes through the well cover, ~~and~~ or any other openings in the top of the guidepole

well.

306 **MECHANICAL SHOE SEAL AND SECONDARY SEAL:** Any storage tank that is equipped with a mechanical shoe seal shall meet the following requirements:

306.1 There shall be no holes, tears, or openings which allow the emission of organic vapors through the secondary seal. There shall be no holes, tears, or openings in the primary seal envelope surrounding the annular vapor space enclosed by the roof edge, stored liquid surface, shoe, and seal fabric.

306.2 Any external floating roof tank where a mechanical shoe seal was installed on or after September 1, 1978, shall be installed so that one end of the shoe extends into the stored liquid and the other end extends a minimum vertical distance of 24 inches above the stored liquid surface.

306.3 The geometry of the shoe shall be such that the gap between the shoe and the tank shell shall not exceed twice the seal gap criteria for a vertical length greater than 18 inches.

306.4 No gap between the tank shell and the primary seal shall exceed:

- a. 1-1/2 inch.
- b. 1/2 inch for a cumulative length greater than 10% of the circumference of the tank.
- c. 1/8 inch for a continuous length of more than 10% of the circumference of the tank.
- d. 1/8 inch for a cumulative length greater than 30% of the circumference of the tank.

306.5 Any secondary seal shall extend from the floating roof to the storage tank shell and shall not be attached to the primary seal. For secondary seals installed after March 23, 1995, no gap between the tank shell and the seal shall exceed:

- a. 0.06 inch.
- b. 0.02 inch for a cumulative length greater than 5% of the circumference of the tank excluding gaps less than 1.79 inches from vertical weld seams.

306.6 No gap between the tank shell and the secondary seal shall exceed:

- a. 1/2 inch.
- b. 1/8 inch for a cumulative length greater than 5% of the circumference of the tank.

306.7. The secondary seal shall allow easy insertion of probes up to 1-1/2 inch in width in order to measure gaps in the primary seal.

307 **RESILIENT TOROID OR LIQUID MOUNTED SEAL AND SECONDARY SEAL:**
For any storage tank that is equipped with a resilient toroid seal or a liquid mounted seal shall meet the following requirements:

307.1 There shall be no holes, tears, or openings which allow the emission of organic vapors through the secondary seal. There shall be no holes, tears, or openings in the primary seal.

307.2 For primary seals, no gap between the storage tank shell and the seal shall exceed:

- a. 1/2 inch.
- b. 1/8 inch for a cumulative length greater than 5% of the circumference of the storage tank.

307.3 Any secondary seal shall extend from the floating roof to the storage tank shell and shall not be attached to the primary seal. For secondary seals installed after March 23, 1995, no gap between the tank shell and the seal shall exceed:

- a. 0.06 inch.
- b. 0.02 inch for a cumulative length greater than 5% of the circumference of the tank excluding gaps less than 1.79 inches from vertical weld seams.

307.4 For secondary seals, no gap between the storage tank shell and the secondary seal shall exceed:

- a. 1/2 inch.
- b. 1/8 inch for a cumulative length greater than 5% of the circumference of the storage tank.

307.5 The secondary seal shall allow easy insertion of probes up to 1/2 inch in width in order to measure gaps in the primary seal.

308 **TERMINAL LOADING:** The owner or operator of any terminal shall not transfer or permit to be transferred organic liquid into any transport vessel unless such terminal is equipped with a CARB certified vapor recovery system pursuant to Section 41954 of the California Health and Safety Code that is operated and maintained in compliance with the requirements of such certification or, shall be a District-approved vapor recovery system only when such system does not require CARB certification pursuant to Section 41954 of the California Health and Safety Code.

308.1 A person shall not transfer or permit to be transferred organic liquid into any transport vessel unless the VOC emissions to the atmosphere do not exceed 0.08 pounds per 1,000 gallons of organic liquid transferred.

308.2 All organic liquid loading equipment shall be maintained to be leak free, gas tight, and in good

working order.

308.3 During transfer operations, the allowed drainage during disconnect of any transport vessels shall be no more than ten milliliters liquid, averaged over three disconnects.

308.4 All transport vessel loading operations shall be accomplished by bottom loading.

309 **GASOLINE BULK PLANT LOADING:** The owner or operator of any gasoline bulk plant shall not transfer or permit to be transferred organic liquid into any transport vessel unless such gasoline bulk plant is equipped with a CARB certified vapor recovery system pursuant to Section 41954 of the California Health and Safety Code that is operated and maintained in compliance with the requirements of such certification or, shall be a District-approved vapor recovery system only when such system does not require CARB certification pursuant to Section 41954 of the California Health and Safety Code.

~~309.1 A person shall not transfer or permit to be transferred organic liquid into any transport vessel unless the VOC emissions to the atmosphere do not exceed 0.84 pounds per 1,000 gallons of organic liquid transferred. All loading facilities transferring organic liquid into transport vessels shall be equipped with a certified vapor recovery system which prevents at least 95% by weight of VOC vapors displaced from entering the atmosphere.~~

309.2 All organic liquid transfer equipment shall be maintained leak free, gas tight, and in good working order.

309.3 All transport vessel loading shall be accomplished by bottom loading.

310 **TRANSPORT VESSEL:** No person shall use or operate any

transport vessel required to be licensed for use on any street or highway unless such transport vessel has a valid CARB certification pursuant to Section 41962 of the California Health and Safety Code. Each transport vessel shall be operated and maintained in compliance with the requirements of such certification and shall be connected to the loading facility vapor recovery system before organic liquid is transferred.

311 GASOLINE LOADING OTHER THAN TERMINAL OR GASOLINE BULK PLANT:

Except for equipment subject to Sections 308 or 309, no person shall transfer or permit the transfer of gasoline into any storage tank with a capacity of more than 250 gallons and equal to or less than 40,000 gallons unless the following conditions are met:

311.1Such transfer is made employing a CARB certified vapor recovery system that prevents the release to the atmosphere of not less than 95% by weight of the organic vapors displaced;

311.2Such transfer is made employing a CARB certified submerged fill pipe; and

311.3The vapor recovery system shall be maintained and operated according to the manufacturer's specifications and as per the most recent applicable CARB Executive Order.

31+2 OTHER ORGANIC LIQUID LOADING: Except for equipment subject to sections 308, 309, or 310, No person shall transfer or permit the transfer of organic liquid with a true vapor pressure greater than 1.5 psia into any storage tank with a capacity of more than 250 gallons and equal to or less than 40,000 gallons unless the following conditions are met:

312.1Such transfer is made employing a vapor control system that prevents the release to the atmosphere of not less than 95% by weight of the organic vapors displaced; and

312.2Such transfer is made employing a submerged fill pipe.

~~3123~~ **SWITCH LOADING:** ~~When organic liquids with vapor pressures less than 1.5 pounds per square inch at storage conditions are being transferred or stored such that vapors of organic liquids with vapor pressures of 1.5 pounds per square inch or greater can be emitted or vented to the ambient air, such transfer and storage are~~ Switch loading shall be subject to the requirements of Sections 308, 309, 310, 311 and 311.2, as applicable.

~~3134~~ **OPERATING PRACTICES:** Organic liquids subject to this rule shall not be discarded to public sewers, stored in open containers, or handled in any other manner that would result in evaporation to the atmosphere.

~~3145~~ **STORAGE TANK CLEANING:** The emissions of organic compounds resulting from degassing a storage tank subject to the requirements of Section 301 of this rule shall be controlled by a system which collects and processes all organic vapors and gases and has an abatement efficiency of at least 90% by weight. The system shall be operated until the concentration of volatile organic compounds in the tank is less than 10,000 ppm expressed as methane as determined in accordance with the test method specified in Section 605.

~~400 ADMINISTRATIVE REQUIREMENTS~~

~~401 COMPLIANCE SCHEDULE:~~ Any person who must install or modify equipment in order to meet the requirements of Section 301 of this rule shall meet the following increments of progress:

~~401.1~~ Submit an complete application for Authority to Construct to the Air Pollution Control Officer no later than December 12, 2002.

~~401.2~~ Demonstrate full compliance with all provisions of this rule no later than June 12, 2004.

500 MAINTENANCE, MONITORING, REPORTING, AND RECORD KEEPING

501 **MAINTENANCE:** The owner or operator of tanks subject to Section 301, shall submit a maintenance plan to the APCO at least 7 days prior to performing maintenance on any equipment subject to the requirements of this rule. The plan shall state the equipment Permit to Operate number, a detailed description of the maintenance to be performed, the expected duration of the maintenance, the reason that the maintenance is necessary, emission control measures that will be employed, and the effect of not performing the maintenance.

502 **MONITORING:** The owner or operator shall submit written notification to the APCO at least 7 days prior to performing monitoring on equipment subject to the requirements of this rule and meet the following:

502.1 To demonstrate compliance with Section 302, the owner or operator shall conduct the following in accordance with the District-approved report format:

- a. Perform complete gap measurements of the primary and secondary seals every 12 months and each time the tank is emptied and degassed.
- b. Perform complete gap measurements of all deck fittings every 12 months and each time the tank is emptied and degassed.

502.2 To demonstrate compliance with Section 303, the owner or operator shall conduct the following in accordance with the District-approved report format:

- a. Visually inspect the secondary seal, floating roof, and deck fittings. Use an explosimeter that is calibrated in accordance with the manufacturer's specifications to measure the lower explosive limit (LEL). Compliance shall be verified every 3 months at a distance of no less than 4 feet from the viewport or access

- hatch.
- b. After March 23, 1995, perform complete gap measurements of the primary and secondary seals every 10 years and each time the tank is emptied and degassed.
 - c. After March 23, 1995, perform complete gap measurements of all deck fittings every 10 years and each time the tank is emptied and degassed.

502.3 To demonstrate compliance with Section 308, the owner or operator shall conduct the following in accordance with the District-approved report format:

- a. Measure the vapor recovery system emission rate at least once every 12 months in accordance with the test method specified in Section 608~~7~~ and the terminal operating conditions shall correspond to those established during the testing conducted for the initial certification criterion.

~~502.4 To demonstrate compliance with Section 309, the owner or operator shall conduct the following in accordance with the District-approved report format:~~

- ~~a. Measure the vapor recovery system emission rate at least once every 12 months in accordance with the test method specified in Section 607 and the bulk plant operating conditions shall correspond to those established during the testing conducted for the initial certification criterion.~~

502.4 To demonstrate compliance with section 311, the owner or operator shall conduct and successfully pass the applicable source test using the most recent applicable CARB Executive Orders, in accordance with the test methods and procedures as specified in Section 608 annually. The person conducting the performance or reverification test shall comply with the following:

- a. Conduct tests in accordance with the applicable test methods specified in Section 608 and other CARB testing procedures. Tests shall be conducted using calibrated equipment meeting the calibration range and

calibration intervals specified by the manufacturer.

b. Provide notification to the District at least 3 days prior to testing.

c. Conduct the tests any time Monday through Friday from 9:00 a.m. through 4:00 p.m.

503 **REPORTING:** The owner or operator subject to the requirements of this rule shall meet the following requirements:

503.1 All reports specified in Section 502 shall include sufficient detail to verify compliance with all applicable rule requirements and shall be submitted to the APCO within 45 calendar days after the monitoring work is completed.

503.2 All source tests performed shall be documented in a report in accordance with the test methods and procedures specified in Section 600. The report shall include sufficient detail to verify compliance with all applicable rule requirements and shall be submitted to the APCO within 45 calendar days after the completion of the test. The source test report shall include the date of test and names and titles of personnel performing the test.

503.3 For storage tanks, gasoline bulk plants, and terminals, submit throughput reports to the APCO no later than March 31 for the previous calendar year. Storage tank throughput reports shall include the actual quarterly volume of organic liquid transferred into each tank. Gasoline Bulk plant and terminal throughput reports shall include the actual quarterly volume of organic liquid transferred.

503.4 All sources claiming the exemption in Section 111 for preventative maintenance shall send to the District a report including an identification of the tank the maintenance was performed on, a description of the maintenance performed, the day(s) the maintenance was performed, and exact time the exemption was claimed.

504 **RECORD KEEPING:** The owner or operator subject to the requirements of this rule shall maintain accurate records to

demonstrate compliance in accordance with the requirements of Sections 501, 502, and 503 on site for a period of at least 5 years and make such records available to the APCO upon request.

- 600 TEST METHODS:** A result by any of the test methods or test procedures listed below, or any amendments and successors thereto, which shows non-compliance with any provision of this rule shall constitute a violation of this rule.
- 601 ASTM METHOD D-323-99a:** Reid vapor pressure shall be determined in accordance with American Society of Testing and Materials D-323-99a, Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).
- 602 ASTM METHOD D-2879-97(2002)(e1):** True vapor pressure shall be determined in accordance with American Society of Testing and Materials D-2879-97(2002)(e1), Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope.
- 603 EPA METHODS 2A OR 2B:** The gas flow rate shall be determined in accordance with EPA Method 2A, Direct Measurement of Gas Volume Through Pipes and Small Ducts; or EPA Method 2B, Determination of Exhaust Gas volume flow rate From Gasoline Vapor Incinerators, as applicable.
- 604 EPA METHOD 18:** Exempt compounds shall be determined in accordance with EPA Method 18, Measurement of Gaseous Organic Compound Emissions by Gas Chromatography.
- 605 EPA METHOD 21:** The gas tight condition shall be determined in accordance with EPA Method 21, Determination of Volatile Organic Compound Leaks, using a portable analyzer calibrated with methane gas.
- 606 EPA METHODS 25A OR 25B:** VOC emissions shall be determined in accordance with EPA Method 25A, Determination of Total Gaseous Organic Concentration Using a Nondispersive Infrared Analyzer, calibrated with methane gas; or EPA Method 25B, Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer, calibrated with methane gas, as applicable.

- ~~607~~ ~~**CARB TEST PROCEDURE TP-202.1:** The bulk plant vapor recovery system efficiency shall be determined in accordance with CARB Vapor Recovery Test Procedure TP-202.1, Determination of Emission Factor of Vapor Recovery Systems of Bulk Plants.~~
- 6087 **CARB TEST PROCEDURE TP-203.1:** The terminal vapor recovery system efficiency shall be determined in accordance with CARB Vapor Recovery Test Procedure TP-203.1, Determination of Emission Factor of Vapor Recovery Systems of Terminals.
- 608 **CARB TEST PROCEDURES TP-201.1B, TP-201.1C, TP-201.1D, TP-201.1E, TP-201.3, TP-201.3B :** The vapor recovery system efficiency shall be determined in accordance with any of the CARB Vapor Recovery Test Procedures listed above, or the most current CARB Executive Orders as listed on the Permit to Operate.
- 609 **ALTERNATIVE TEST METHODS:** Other test methods demonstrated to provide results that are acceptable for determining Reid or true vapor pressure for purposes of demonstrating compliance with Rule 2.21, after review and approval in writing by the District, the ARB, and the U.S. EPA, may also be used.
- 610 **MULTIPLE TEST METHODS:** When more than one test method is specified for any testing, 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 this rule.

TABLE 2 1. STORAGE TEMPERATURE VERSUS PRODUCT TRUE VAPOR PRESSURE

Organic Liquid	Reference Properties			Not to Exceed Max. Temperature Deg F	
	Density lb/gal	Gravity deg API	Initial Boiling Point deg F	0.5 psia	1.5 psia
Kerosene	---	42.5	350	195	250
Diesel	---	36.4	372	230	290
Gas Oil	---	26.2	390	249	310
Stove Oil	---	23.0	421	275	340
Jet Fuel JP-1	---	43.1	330	165	230
Jet Fuel JP-3	---	54.7	110	---	25
Jet Fuel JP-4	---	51.5	150	20	68
Jet Fuel JP-5	---	39.6	355	205	260
Jet Fuel JP-7	---	44-50	360	205	260
Fuel Oil No. 1	---	42.5	350	195	250
Fuel Oil No. 2	---	36.4	372	230	290
Fuel Oil No. 3	---	26.2	390	249	310
Fuel Oil No. 4	---	23.0	421	275	340
Fuel Oil No. 5	---	19.9	560	380	465
Residual Fuel Oil	---	19-27	---	405	---
Fuel Oil No. 6	---	16.2	625	450	---
Asphalt 60-100 pen.	---	---	---	490	550
Asphalt 120-150 pen.	---	---	---	450	500
Asphalt 200-300 pen.	---	---	---	360	420
Acetone	6.6	47	133	---	35
Acrylonitrile	6.8	41.8	173	30	62
Benzene	7.4	27.7	176	34	70
Carbon Disulfide	10.6	22.1	116	---	10
Carbon Tetrachloride	13.4	---	170	20	63
Chloroform	12.5	---	142	---	40
Cyclohexane	6.5	49.7	177	30	65
1,2 Dichloroethane	10.5	---	180	35	75
Ethyl Acetate	7.5	23.6	171	38	70
Ethyl Alcohol	6.6	47.0	173	55	85
Isopropyl Alcohol	6.6	47.0	181	62	95
Methyl Alcohol	6.6	47.0	148	30	62
Methyl Ethyl Ketone	6.7	44.3	175	30	70
Toluene	7.3	30.0	231	75	120
Vinyl Acetate	7.8	19.6	163	30	65

ATTACHMENT B

NOTICE OF EXEMPTION FROM CEQA GUIDELINES

Notice of Exemption

To: **G** Office of Planning and Research
 1400 Tenth Street., Room 121
 Sacramento, CA 95814

? County Clerk
 County of Yolo
 625 Court Street Room 105
 Woodland, CA 95695

? County Clerk
 Solano County
 675 Texas Street Suite 6500
 Fairfield, CA 94533

From: Yolo-Solano Air Quality Management District
 1947 Galileo Court, Suite 103
 Davis, CA 95616

Project Title: Revision of Rule 2.21- ORGANIC LIQUID STORAGE AND TRANSFER

Project Location: Yolo-Solano Air Quality Management District

Project description: Rule 2.21 is being amended to correct a deficiency (the exemption for scheduled maintenance on large storage tanks) cited by the Environmental Protection Agency (EPA). In addition, the District is proposing to revise the applicability of the rule by lowering the true vapor pressure from 1.5 to 0.5 psia, change the vapor recovery system standard for bulk plants to 95% efficiency, remove the requirement to annually re-certify bulk plants, and clarify that the vapor recovery system for all gasoline tanks greater than 250 gallons must be a California Air Resources Board (CARB) certified system.

Name of Public Agency Approving Project: Yolo-Solano Air Quality Management District

Name of Person or Agency Carrying Out Project: Yolo-Solano Air Quality Management District

Exempt Status:

G Ministerial

G Emergency Project

? Categorical Exemption (CEQA Guidelines Section 15308, Action by Regulatory Agency for Protection of the Environment)

G Statutory Exemption

Reason why project is exempt: The revision of Rule 2.21 is an action taken to protect the environment and is therefore exempt from CEQA because it constitutes a Class 8 categorical exemption pursuant to CEQA Guidelines 15308.

Lead Agency Contact Person: Mat Ehrhardt, Air Pollution Control Officer

Telephone Number: (530) 757-3650

Signature: _____ **Date:** _____ **Title:** _____

ATTACHMENT C
RESOLUTION NO. 05-05

RESOLUTION NO. 05-05

**RESOLUTION AMENDING YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT
RULE 2.21**

WHEREAS, California Health and Safety Code section 40702 provides that an air quality management district shall adopt rules and regulations as may be necessary or proper to execute the powers and duties granted to, and imposed upon, the district by Division 26 of the Health and Safety Code; and

WHEREAS, Health and Safety Code section 40727 provides that before adopting, amending, or repealing a rule or regulation, a district board shall make findings of necessity, authority, clarity, consistency, nonduplication, and reference, based upon information developed pursuant to section 40727.2, information in the rulemaking record maintained pursuant to section 40728, and relevant information presented at the public hearing required by section 40725; and

WHEREAS, section 15308 of the CEQA Guidelines provides that actions taken by regulatory agencies as authorized by state law to assure the maintenance, restoration, or enhancement of the environment where the regulatory process involves procedures for protection of the environment, are categorically exempt from CEQA review (Class 8 Categorical Exemption); and

WHEREAS, the District Rule 2.21, Organic Liquid Storage and Transfer, was amended June 12, 2002 to meet the requirements of Health and Safety Code sections 40914 and 40920;

WHEREAS, on August 6, 2002 Rule 2.21, Organic Liquid Storage and Transfer was submitted to the United States Environmental Protection Agency (US EPA) for revision to *California's State Implementation Plan for Achieving and Maintaining the National Ambient Air Quality Standards (SIP)*; and

WHEREAS, on January 22, 2004 the US EPA published a final decision of limited approval and limited disapproval of Rule 2.21, Organic Liquid Storage and Transfer, citing certain provisions of Rule 2.21 that were in conflict with Section 110 of the Federal Clean Air

Act; and

WHEREAS, District staff and other agencies identified concerns regarding the clarity and enforceability of certain provisions of Rule 2.21, Organic Liquid Storage and Transfer: and

WHEREAS, the proposed amendments to Rule 2.21, Organic Liquid Storage and Transfer will correct the SIP rule deficiencies identified by the US EPA, and will improve clarity and enforceability; and

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Yolo-Solano Air Quality Management District hereby finds, authorizes, directs and declares as follows:

2. The Board of Directors has considered and hereby adopts by reference the staff report prepared in this matter.
2. The Board of Directors makes the following findings pursuant to Health and Safety Code section 40727:
 - a. Necessity: The Governing Board finds based on the staff report a need exists for the amendment of Rule 2.21. Said action is necessary to comply with the Clean Air Act requirements and US EPA policies, and to clarify certain provisions of Rule;
 - b. Authority: Health and Safety Code section 40702 permits the District to amend District Rule 2.21;
 - c. Clarity: District Rule 2.21 as amended is written so that its meaning can be easily understood by the persons directly affected by it;
 - d. Consistency: District Rule 2.21 as amended is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations;
 - e. Nonduplication: District Rule 2.21 as amended does not impose the same requirements as an existing state or federal regulation;
 - f. Reference: District Rule 2.21 is consistent with provisions of the Clean Air Act.
3. The Board of Directors finds that the District has complied with the procedural requirements set forth in Chapters 6 and 6.5 of Part 3 of Division 26 of the Health and Safety Code.
4. The Board of Directors finds that amending District Rule 2.21 is an action taken by a regulatory agency as authorized by state law to assure the maintenance, restoration, or enhancement of the environment where the regulatory process involves procedures for protection of the environment, and is therefore

categorically exempt from CEQA review as a Class 8 Categorical Exemption.

5. The Board of Directors hereby amends District Rule 2.21, Organic Liquid Storage and Transfer, as set forth in Exhibit 1 (Attachment B of the Staff Report), which is attached and incorporated by reference. The amendment is effective September 14, 2005.

PASSED AND ADOPTED by the Board of Directors of the Yolo-Solano Air Quality Management District this 14th day of September, 2005, by the following vote:

Ayes:

Noes:

Absent:

Abstain:

Frank Sieferman, Jr., Chair
Board of Directors
Yolo-Solano Air Quality Management District

Attest:

Approved as to Form:

Kay Mahorney, Clerk
Board of Directors

Hope Welton, District Counsel

ATTACHMENT D
WRITTEN COMMENTS RECEIVED



Shell Oil Products US
Carson Terminal
20945 S. Wilmington Ave.
Carson, CA 90810

April 5, 2005

Ms. Nancy Fletcher
Yolo-Solano Air Quality Management District
1947 Galileo Court, Suite 103
Davis, CA 95616

**Subject: Equilon Enterprises LLC dba Shell Oil Products US Sacramento Terminal
Yolo-Solano AQMD Rule 2.21 - Comments**

Dear Ms. Fletcher:

Shell is pleased to provide comments on Rule 2.21 to assist in the Yolo-Solano rule development process. The Shell Sacramento facility is located at 1509 S. River Road, West Sacramento. Shell's comments are as follows:

Section 111 – Limited Exemption - Preventative Maintenance

The provisions of sections [302](#), [303](#), [304](#), 305, 306, and 307 shall not apply to tanks involved in [preventative maintenance](#) provided all of the following conditions are met.

Based on the definition of "Preventative Maintenance" sections 302,303 and 304 should be added to Section 111 as not applying to tanks involved in periodic or preventative maintenance.

Shell's only other concern is the limited ability to be able to come into compliance with Rule 5.2 – Upset/Breakdown Conditions: Emergency Variance. The operation of a storage tank is very different than most sources. If a problem exists such as a seal failure, the source cannot be shut down within 24 hours due to logistics, including the mobilization of degassing equipment and the time it takes to pump the product out of a tank. Shell would like to have some language within the maintenance section that says the following:

Any tank, which does not comply, with any provision of this rule shall be brought into compliance within 72 hours of the determination of non-compliance.

At the end of this time period, an emergency variance could be in place or if the breakdown or non-compliance occurred on a Saturday, the facility would be covered over the weekend.

Thank you for your consideration in this matter. If you have any questions or need additional information please contact me at (310) 816-2016.

Final Staff Report - Rule 2.21, Organic Liquid Storage and Transfer

August 10, 2005

Sincerely,

Christine Davies
Senior Environmental Engineer

Enclosure

cc: JDomagala file



April 4, 2005

Ms. Nancy Fletcher
Associate Air Quality Engineer
YSAQMD
1947 Galileo Ct. Suite, 103
Davis, CA. 95616

Re: BP Comments on Proposed Amendments to
YSAQMD Rule 2.21- Organic Liquid Storage and Transfer

Ms. Fletcher–

After attending the YSAQMD Rule 2.21 workshop on March 24, 2005 BP is providing the following comments to assist in the development of the proposed rule amendments. We have reviewed recently revised language sent to us April 1, 2005 and appreciate the Districts work to incorporate our concerns raised at the workshop. However, we have a few remaining concerns.

**Section 111 – Limited Exemption - Preventative Maintenance and
Section 220 – Preventative Maintenance**

The District has provided helpful guidance by adding and clarifying language in this section. In this letter, we are providing a few suggestions to both section 111 and new definition in section 220 (Preventative Maintenance) to further clarify what actions are taken during preventative maintenance. It is important to industry that the rule provides a clear mechanism for industry to adjust, repair or replace equipment worn due to normal wear to ensure compliance with District standards as well as to maintain the longevity and operational integrity of that equipment.

BP Recommends the following changes (see *Arial font, bold, italics*):

LIMITED EXEMPTION - SCHEDULED PREVENTATIVE MAINTENANCE: The provisions of Section 301 shall not apply to tanks involved in periodic scheduled maintenance or replacement operations of primary or secondary seals that cause the emissions of volatile organic compounds. Such periodic scheduled maintenance shall be done in accordance with a plan as defined in Section 501 which has prior written approval of the Air Pollution Control Officer. **The provisions of sections 303, 304, 305, 306, and 307 shall not apply to tanks involved in periodic *while undergoing preventative maintenance to identify and prevent potential equipment problems, extend the life of equipment, or keep the equipment operating at peak efficiency* provided all of the following conditions are met:**

111.1 The operator shall notify the APCO prior to performing maintenance, identifying the affected tank, the requirement(s) for which the exemption is necessary, how the maintenance will prevent compliance with the requirement(s), the expected duration of the maintenance, what measures will be taken to minimize emissions, and the anticipated effect of not performing the maintenance

111.2 The tank is in compliance with **the applicable provisions of this** all District regulations **rule** prior to **beginning** maintenance **work**.

111.23 **Replacement of any tank seal section must comply with the applicable provisions of this rule and the District must receive written notification of the tank permit number and seal type at least three days prior to the installation. Replacement of seal sections having length greater than 50% of the tank circumference would be subject to permitting provisions in Rule 3.1.**

111.24 The tanks shall not receive or empty product during, the relief maintenance period.

111.35 Emissions shall be minimized, and

111.46 The time of exemption allowed under this subsection does not exceed 7 days per event.

We also suggest this clarification to corresponding definition:

PREVENTATIVE MAINTENANCE: Maintenance performed ***consisting of tightening, adjusting, removing, repairing or replacing equipment parts worn due to reasonable wear during normal use*** on a vapor control device, tank roof, roof fitting, or tank seal, in order to minimize emissions or prevent the occurrence of a breakdown condition.

After closer consideration BP recommends that the district word the proposed exemption to allow temporary relief from sections 303 and 304 as well as 305, 306 and 307. This is needed as preventative maintenance work on either internal floating roof tanks or fixed roof tanks with vapor recovery could possibly result in a temporary conflict with provisions in section 303 and 304. For example, replacement of a small section of a secondary seal in an internal floating roof tank could possibly cause LEL to be elevated temporarily in an internal floating roof tank.

It is also important to industry to be able to resolve equipment failures when they might occur as rapidly as possible to minimize safety hazards, excess emissions and to mitigate potential disruption of regional product distribution. The emergency variance process outlined by 5.2 appears to require that immediate corrective measures be taken or the process be shutdown within 24 hours. This cannot be easily achieved with tanks within the Yolo Solano Air District. As you well know, taking a tank out of service requires that a regulated source secure tank degassing equipment permitted within the Air District. To BP's knowledge there is only one tank degassing company with equipment currently permitted within Yolo Solano Air District. Unfortunately, this company and its equipment is based in Los Angeles. Thus, there are no guarantees that equipment can be scheduled to arrive in time to meet the 24 hour requirement outlined by Rule 5.2. This is a true and real constraint impacting tank management decisions critical for the supply of product in the region and needs to be acknowledged by the District in some manner.

Air District rules are most effective in achieving compliance when rules are structured with both clear inspection and maintenance provisions in combination with short repair periods. The leak detection and repair programs for piping components are an example of this. A similar mechanism should be incorporated into Rule 2.21 to allow limited repairs within a specified period for storage tanks. **BP requests that the District consider adding a provision that allows a timeline to implement immediate mitigation measures and up to a 72 hour period to achieve final repairs.** This will provide a reasonable window of time to coordinate removing product from a tank and to allow tank degassing equipment to arrive in the District or to obtain materials for needed repairs. The South Coast Air Quality Management District has had this type of Maintenance provision in their Rule 463 section (e)4 for many years. Structuring this repair period into the Rule 2.21 would ensure that both industry's and the District's man power and resources were focused towards expediting corrective actions for unexpected and unforeseen problems with the tanks rather than efforts to prepare and coordinate activities associated with pursuing an emergency variance under Rule 5.2. BP suggests the following type of provision be added into Rule 2.21.

Corrective Maintenance and Repair: Any tank which does not comply with the provisions of sections 303,304, 305, 306, and 307 shall be brought into compliance as quickly as reasonably possible. The provisions of the Rule shall be deemed to be met provided that 1) Mitigation measures are implemented immediately and 2) Corrective maintenance and repair activities can be accomplished within 72-hours of discovery of non-compliance. In the event the maintenance and repairs cannot reasonably be accomplished within the 72-hours the owner/operator, upon notification to the District per Rule 5.2, shall accomplish the repairs within an additional 24-hours or alternative period approved by the District.

Additionally, the District appears to be changing both the applicability of Rule 2.21 as well as tightening the leak standard. These changes could possibly impose a new previously unidentified compliance burden to existing sources and the cost effectiveness of these proposed changes needs to be considered. With the new proposed language tanks storing organic liquids with true vapor pressure of 0.5 psia will now be subject to Rule 2.21. The District is also proposing to change the control standards for some tank components by changing the gas leak definition. Your most recent proposal indicates that the new gas leak definition 204 will now be based on a 1,000 ppm threshold rather than 10,000 ppm. These are significant changes to the rule and there appears to be no compliance schedule identified to allow facilities impacted by this change to add or modify controls or to implement internal compliance programs that would assist in meeting standards outlined by a these newly proposed provisions of Rule 2.21. **BP recommends that the District incorporate a six month compliance schedule for sources subject to these new applicability requirements and leak standard to review and prepare for the impact of these changes.** Some sources may need time to submit applications to the Air District if new control equipment is needed. Finally, the initial Staff report reviewed by BP does not identify or quantify how proposed changes to Rule 2.21 will result in emission reductions within the air basin. No cost benefit analysis has been provided in the Staff report. The documentation of emission reduction benefits associated with changes to control standards would seem to be an important evaluation to include in the Staff Report for the public's review.

BP appreciates the opportunity to provide comments. YSAMQD has been open to listening to our concerns and BP believes these remaining concerns can be resolved reasonably. If you'd like to discuss in more detail feel free to contact me at (510) 231-4704.

Sincerely,

Debra Portello
HSE Advisor, West Coast
BP US Logistics

Attachments

Cc: J. Feris – BP Sacramento Terminal Manager
K. Buchan - WSPA

**STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
AIR RESOURCES BOARD**

P. O. Box 2815
Sacramento, California 95812

March 22, 2005

**Transmittal
of
ARB Staff Rule Review Comments**

To: Mr. Paul Hensleigh
Air Quality Engineer
Yolo Solano Air Quality Management District
Telephone Number: (530) 757-3665
e-mail: Phensleigh@ysaqmd.org

From: Alex Krichevsky, (916) 324-6222
e-mail: akrichev@arb.ca.gov

The following draft rule, which is scheduled for a public workshop to be held by your District staff on March 24, 2005, was received by us on March 2, 2005, for our review:

Rule 2.21 Organic Liquid Storage and Transfer

We have reviewed the rule and have the comments on the following pages. We believe that our comments are important to the effectiveness and enforceability of Rule 2.21.

We received the rule after the ARB/CAPCOA protocol date. When we receive draft rules at least 30 days before a workshop, our staff is afforded sufficient time to conduct a thorough, comprehensive review, and you will likely receive our comments well before the workshop.

If you have any questions about our comments, please contact Mr. Erik White, Manager of the Engineering Evaluation Section, Criteria Pollutants Branch, Stationary Source Division at (916) 324-8029.

Rule review comments are on the following pages

Date: March 22, 2005Air Resources Board Staff Comments on
Yolo Solano Air Quality Management District
Draft Rule 2.21

Rule 2.21 Organic Liquid Storage and Transfer

1. General: Since there is no accepted methodology for determination of "actual storage conditions", staff should consider replacing the terminology of "actual storage conditions" and replacing it with "actual storage temperature". A definition for "actual storage temperature" should also be provided and could be based on the methodology, as contained in the American Petroleum Institute Manual of the Petroleum Measurement Standards, Chapter 7 - Temperature Determination, 1st Edition, June 2001. This test method should also be added to the test methods identified in Section 600.
2. General: The rule does not appear to apply to storage of organic liquids between 0.5 and 1.5 psia in tanks between 250 and 40,000 gallons. Provisions for the loading and/or storage of these liquids into storage tanks between 250 and 40,000 gallons should be included.
3. Section 206: The definition of "gas leak" in this section should use a gas leak standard of no greater than 1,000-parts per million by volume (ppmv) above background to define a gas leak. Other districts have established similar or more stringent leak threshold standards. The South Coast Air Quality Management District (SCAQMD) Rule 463, defines "vapor tight" as "a condition that exists when the reading on a portable hydrocarbon meter is less than 1,000 ppm, expressed as methane, above background." In Regulation 8-5, the Bay Area Air Quality Management District (BAAQMD) defines "gas tight" as "a concentration of organic compounds ... of less than 100 ppm expressed as methane) above background, for any point or item, except for pressure vacuum valves and atmospheric pressure relief devices; and less than 500 ppm (expressed as methane) above background, for pressure vacuum valves and atmospheric pressure relief devices only."
4. Section 217: The definition of "organic liquid" in this section should be changed to remove the reference to true vapor pressure of the liquid, or else the reference to vapor pressure should cite "0.5 psia" to be consistent with other components of the rule.
5. Section 311: It is unclear whether, for gasoline loading into tanks from 250 to 40,000 gallons, the use of a submerged fill pipe is acceptable as the sole means of compliance with this section. A submerged fill pipe is not an acceptable stand alone control strategy for gasoline loading or storage. The rule should be clarified such that section 311 requires compliance with both sections 311.1 and 311.2. As an alternative, gasoline loading and/or storage could require either vapor recovery, an internal floating roof tank, an external floating roof tank, or a pressure vacuum valve. Also, the SCAQMD and BAAQMD rules cited in Comment 3 place an upper limit of about 20,000 gallons for gasoline storage using a pressure vacuum valve.
6. Section 312: This section states that, for organic liquid loading into tanks between 250 gallons

and 40,000 gallons and for liquids with a vapor pressure greater than 1.5 psia, the use of a submerged fill pipe is not an acceptable stand alone control strategy. The rule should be clarified such that section 312 requires compliance with both sections 312.1 and 312.2. As an alternative, loading and/or storage of organic liquids under these tank and vapor pressure conditions could require either require vapor recovery, an internal floating roof tank, an external floating roof tank, or a pressure vacuum valve.

United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

May 05, 2005

Transmittal of EPA Rule Review Comments

To: Paul Hensleigh, Yolo-Solano Air Quality Management District
phensleigh@ysaqmd.org

Mike Guzzetta, California Air Resources Board
mguzzett@arb.ca.gov

From: Andrew Steckel, Rulemaking Office Chief
steckel.andrew@epa.gov

Re: April 14, 2005 draft of YSAQMD Rule 2.21 - Organic Liquid Storage and Transfer

In January 2004, EPA finalized a limited approval and limited disapproval of YSAQMD Rule 2.21. The first sanction clock associated with this action is scheduled to expire in August 2005. The proposed amendments referenced above generally remedy the deficiencies listed in our disapproval action by removing the scheduled maintenance exemption and the associated director's discretion. We have several concerns, however, with specific proposed revisions to the rule which we have listed below. Please direct any questions about our comments to me at (415) 947-4115 or to Jerry Wamsley at (415) 947-4111.

Approvability Issues

As discussed in our limited disapproval, EPA's "Excess Emissions Policy" addresses exemptions during equipment malfunctions, shutdown and start-up such as the limited exemption proposed for preventative maintenance in Section 111. In general, any preventative maintenance must be accomplished as quickly as practicable and resulting emissions must be minimized to the maximum extent practicable. Any facility taking advantage of the preventative maintenance provision must maintain records of such actions and be prepared to demonstrate that they have minimized, as much as practicable, the duration and the impact of any period of non-compliance allowed by the exemption. As a result, we recommend the following changes to Sections 111 and 220.

Section 111.1: Insert a requirement for specifying how the mitigation measures associated with the preventative maintenance will reduce emissions as much as practicable.

Section 111.5: Insert a requirement for minimizing emissions to the maximum extent practicable during preventative maintenance.

Section 111.6: Limit the preventative maintenance period to no more than 72 hours per event and 12

days annually per tank. This provision should also create a requirement for accomplishing the preventative maintenance as expeditiously as practicable.

Section 220: To improve clarity and enforceability, we recommend the definition of preventative maintenance be revised to read: "Tightening, adjusting, repairing, or replacing a component of a vapor control device, tank roof, roof fitting, or tank seal that has become worn due to normal use. The purpose of preventative maintenance is to prevent equipment breakdowns and to minimize emissions, as much as practicable, over the useful life of the component."

Section 506: The phrase, "To demonstrate compliance with Section 301" is potentially misleading and inappropriate. We understand that you intend to replace it with a facility size cut-off for requiring facilities to submit a maintenance plan.

Sections 601 and 602: YSAQMD has inquired about rule language needed to allow alternative test methods for determining Reid vapor pressure and applicability to rule requirements. Note that the process for determining "equivalent" test methods in a rule is more rigorous than determining "alternative" test methods. We recommend insertion of the following two provisions.

Alternative Test Methods: Other test methods demonstrated to provide results that are acceptable for purposes of determining compliance with Section (insert references), after review and approval in writing by the District, the ARB and the U.S. EPA, may also be used.

Multiple Test Methods: When more than one test method or set of methods is specified for any testing, 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 this rule.

Additional Recommendations

Section 111.1: We suggest a notification requirement of 3-7 days for rule specificity and clarity and to allow the YSAQMD time to review the intended action and any related issues prior to the exemption period.

Section 111.3: We suggest moving the language concerning the need to obtain an Authority to Construct should more than 50% of a tank seal need replacement. While appropriate to the rule, this provision appears inconsistent with the definition of preventative maintenance.