VENTURA COUNTY APCD
DRAFT STAFF REPORT – DRAFT REVISIONS TO VCAPCD
RULE 71 - CRUDE OIL AND REACTIVE ORGANIC COMPOUND LIQUIDS
RULE 71.1 - CRUDE OIL PRODUCTION AND SEPARATION
RULE 71.3 - TRANSFER OF REACTIVE ORGANIC COMPOUND LIQUIDS
Advisory Committee Meeting - March 24, 2015

EXECUTIVE SUMMARY

The Rule 71 series applies to the production, gathering, separation and processing of crude oil and natural gas, and the storage and transfer of petroleum material and reactive organic compound (ROC) liquids.

Rule 71.1 requires crude oil storage tanks and wastewater separators to be equipped with air pollution controls for vapor emissions. Over 650 crude oil tanks in Ventura County are controlled by vapor recovery systems pursuant to this rule. Subsection D.4 exempts 18 tanks where the District has determined that vapor recovery is not cost effective (i.e., emission controls would cost more than $9 per pound of ROC reduced). Staff is proposing to disallow the use of this exemption in cases where the tank is within 300 feet of a sensitive receptor such as a home. The following two facilities would be affected by this rule amendment:

• Permit #01146 – Barnett Oil Facility, 200 barrel crude oil storage tank, three oil wells, and a loading facility, 1,095 barrels per year
• Permit #00053 – Van Lente Oil Facility, 500 barrel crude oil storage tank and one oil well, 800 barrels per year

These two facilities would be required to install vapor recovery systems. It would also disallow the exemption for any future installation of a tank within 300 feet of a sensitive receptor.

Rule 71.3 requires crude oil loading facilities that exceed specified throughputs to have vapor recovery systems and use tank trucks that have vapor recovery. The rule revision would require these emission controls to be used at any crude oil loading facility that is within 300 feet of a sensitive receptor, regardless of throughput. The Barnett loading facility would also be required to install these controls.

Rule 71 contains the definitions of terms used in the Rule 71 series. A new definition is proposed to be added for the term “Sensitive Receptor.” The definition comes from SCAQMD Rule 1148.2, Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers.

APCD staff (staff) is proposing these rule amendments in response to concerns expressed by residents of homes near the Barnett oil facility in Simi Valley. The residents are concerned about the potential health effects of exposure to crude oil vapors and odors. Staff conducted a toxics health risk assessment for this facility. The assessment indicates that no receptor is being exposed to a lifetime excess cancer risk of greater than 10 in a million (the significance threshold adopted by the Air Pollution Control Board) or emissions that could lead to non-cancer adverse health effects. The proposed rule revision will require emission controls that will reduce odors to more acceptable levels.

These rule revisions would affect only two existing facilities. Any new oil tank or loading facility within 300 feet of a sensitive receptor would also be required to have vapor recovery pursuant to the District’s permitting program and New Source Review rules.

BACKGROUND

Rule 71.1 requires oilfield storage tanks to be equipped with a vapor recovery system with a vapor disposal system that directs all vapors to a fuel gas system, a sales gas system, a flare, or any other system that reduces ROC emissions by at least 90 percent. Section D of Rule 71.1 exempts the following equipment from those requirements:
• **D.1.a** - Equipment installed prior to June 20, 1978, that process liquids with a modified Reid vapor pressure less than 0.5 psia.

• **D.1.b** - Temporary tanks, for up to 90 days, used during the development of a new well.

• **D.1.c** - Temporary portable tanks, for up to 60 days, used during maintenance activities.

• **D.2** - Temporary maintenance activities lasting less than 24 hours.

• **D.3** - Tanks containing liquids with a low ROC content (less than 5 milligrams ROC per liter).

• **D.4** - Tanks where it has been demonstrated that the cost of emission controls would exceed $9.00 per pound of ROC reduction. This is known as the BACT cost-effectiveness exemption (Best Available Control Technology).

The purpose of this rule amendment is to authorize the District to require emission controls on the Barnett oil facility, which is located within 100 feet of homes where the occupants have expressed health concerns about the toxicity of its emissions and odors.

Staff has reevaluated all the exemptions, and concluded the following:

• **D.1.a** - This exemption grandfathers five existing tanks. None are near homes.

• **D.1.b and D.1.c** - Temporary tanks are exempted to allow for efficient oilfield development and maintenance.

• **D.2** - Temporary maintenance activities lasting less than 24 hours are exempted to allow for efficient oilfield maintenance. This exemption is used when a vapor recovery system needs repairs.

• **D.3** - Tanks containing liquids with an ROC content less than 5 milligrams per liter are exempt because they contain mostly water and have low emissions.

• **D.4** - Eighteen tanks are currently exempted by the BACT exemption. Two of those tanks are near homes. This rule revision will eliminate the exemption for those two tanks.

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**PROPOSED RULE REVISIONS**

**Current Proposal**

Staff is proposing to revise the BACT exemption in Section D.4 of Rule 71.1 so that it would no longer be available to any tank that is located within 300 feet of a sensitive receptor.

Staff selected the 300 foot limit based on two existing precedents: 1) California Code of Regulations Title 14, Division 2 Department of Conservation, Chapter 4 - Development, Regulation and Conservation of Oil and Gas Reserves defines the term “Environmentally Sensitive” to include locations within 300 feet of a residence. Environmentally sensitive locations must comply with more stringent safety and reporting requirements. 2) The Ventura County Agricultural Commissioner’s Agriculture/Urban Buffer Policy requires a 300 foot setback.

Section B.2 of Rule 71.3 is proposed to be revised to require vapor recovery on any ROC loading facility located within 300 feet of a sensitive receptor. This revision would also trigger an existing provision in Rule 71.3 that requires the use of tank trucks with vapor recovery.

The proposed definition for the term “Sensitive Receptor” comes from SCAQMD Rule 1148.2.

**Public Workshops**

Staff presented proposed rule revisions at a public workshop on January 21, 2015. Based on input at that meeting, staff revised the proposal and conducted a second public workshop on March 3, 2015. Based on input at that meeting, staff revised the definition of Sensitive Receptor.

1) At the January workshop staff had proposed to disallow the vapor recovery exemptions of Rule 71.1D.1.b and D.1.c. for any temporary equipment that was to be located within 300 feet of a sensitive receptor. Staff proposed this revision as a safeguard against possible odor complaints. Staff withdrew this proposed revision in response to concerns raised by the Western States Petroleum Association and Aera
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Energy. Staff will revisit the temporary tank exemption if the California Air Resources Board adopts oil and gas production rules to control methane as a greenhouse gas, as is expected.

2) Residents living near the Barnett oil facility commented that the precedents used for selecting the 300 foot distance were inappropriate and, instead, the distance should be based on the health risks of exposure to crude oil vapors and produced gas.

District staff has conducted air toxics health risk assessments for many sources of air toxics in Ventura County. Existing sources are evaluated under the Air Toxics Hot Spots Program and new sources are examined as part of the District’s permitting program. Staff has reviewed a number of oil production facilities under these programs. Facilities that cause a lifetime excess cancer risk of greater than 10 in a million or that have emissions that could lead to noncancer adverse health effects are required to reduce their risks. Facilities are reviewed regularly to make sure that there has been no increase in the air toxics risk. The District’s air toxics program looks at hundreds of chemical compounds.

In response to the concerns raised at the workshop, staff conducted an air toxics health risk assessment focused on the area around the Barnett oil facility. The health risk assessment is attached (See Attachment 5). It shows that the facility is not causing an incremental lifetime excess cancer risk of greater than 10 in a million. Therefore, the health risk assessment does not support the idea that a more restrictive distance (i.e., greater than 300 feet) should be specified in the rule. Staff is retaining the proposed 300 foot distance which is sufficient to require the Barnett oil facility to install vapor recovery. Staff is also proposing to allow 90 days for installation of new emission controls.

3) Residents stated that emission controls should be required on the loading facility at the Barnett oilfield. Existing Rule 71.3 requires vapor recovery and the use of controlled tank trucks on loading facilities having liquid throughputs that exceed 20,000 gallons per day of ROC liquid with a MRVP of 1.5 psia or higher, or 150,000 gallons per year of ROC liquid with a MRVP of 0.5 psia or higher. Staff is now proposing to revise Rule 71.3 to require vapor recovery and the use of controlled tank trucks at any loading facility within 300 feet of a sensitive receptor, regardless of liquid throughput. Therefore, the Barnett loading facility would be required to use emission controls. No other uncontrolled loading facilities are within 300 feet of a sensitive receptor.

4) A participant at the first public workshop commented that the definition of “sensitive receptor” should be expanded to include playgrounds, and other places frequented by the public. Staff proposed a new definition at the second workshop that included an expanded list of public venues. Staff received comments from the Western States Petroleum Association and Aera Energy that the definition should be limited to people that are particularly susceptible to health effects of air contaminants such as hospitals, schools, daycare facilities, elder housing and convalescent facilities. In response, staff is now proposing a new definition that is identical to the language in SCAQMD Rule 1148.2.

5) Residents commented that the rule should require the captured crude oil vapors and produced gas to be controlled by activated carbon canisters, and that the use of a flare at the Barnett facility should be prohibited. Staff is not proposing to require carbon canisters because they do not control methane, a major component of produced gas. Staff is not proposing a rule amendment to prohibit the use of a flare at the Barnett oil facility. However all flares will continue to be subject to restrictions under the District’s air toxic program and permitting program.

6) Residents commented that if the District does not prohibit the use of a flare at the Barnett oil facility, the rule should require any flare used there to be placed at least 300 feet away from sensitive receptors. Staff is not proposing a rule revision to regulate the placement of a flare at the Barnett oil facility. However the placement of all flares will continue to be subject to restrictions under the District’s air toxic program and permitting program, and may be subject to restrictions of the fire department and the City of Simi Valley.

7) Residents commented that air monitoring should be done before the installation of any control equipment at the Barnett facility and that routine monitoring for toxic compounds should be conducted in the area after installation of control equipment. Residents also requested more frequent APCD inspections and warning signs at the facility. The District will be addressing these issues outside the rule development process.
SOCIOECONOMIC IMPACTS

California Health and Safety Code Section 40728.5 requires the APCD Board to consider the socioeconomic impacts of the adoption, amendment, or repeal of any rule that will significantly affect air quality or emissions limitations. This section does not apply to the proposed amendments to Rules 71 and 71.1 as the revisions do not significantly affect air quality or emissions limitations.

COST-EFFECTIVENESS

California Health and Safety Code Section 40703 requires the District, in adopting a regulation, to consider and make public its findings related to the cost-effectiveness of control measures and direct costs to regulated parties.

Staff discussed the costs of complying with the proposed rule amendments with knowledgeable parties. Estimated costs are as follows:

Permit #01146 - 200 barrel crude oil storage tank
The vapor collection and flaring system is expected to cost approximately $2,000, and have annual operation maintenance costs of $200. Equipment life is estimated to be at least five years. Annualized cost is therefore estimated to be less than $1,000 per year. The cost estimate excludes labor costs for installation as it is assumed that the operator will install the system. The vapor recovery system will also control the associated loading rack.

Permit #00053 - 500 barrel crude oil storage tank
This tank is associated with a single well that can produce up to five barrels per day of liquid, including two barrels per day of crude oil. The operator estimates costs of up to $50,000 to install an activated carbon vapor recovery system on this tank. A potentially less expensive compliance option would be to install a flare system.

The purpose of this rule amendment is to reduce odors, not to reduce ROC emissions. Therefore, emission reductions and cost-effectiveness were not calculated.

INCREMENTAL COST-EFFECTIVENESS ANALYSIS

Health and Safety Code Section 40920.6(a) requires air districts to identify one or more potential control options, assess the cost-effectiveness of those options, and calculate the incremental cost-effectiveness. Health and Safety Code Section 40920.6 also requires an assessment of the incremental cost-effectiveness for proposed regulations relative to ozone, CO, SO\textsubscript{X}, NO\textsubscript{X}, and their precursors.

Because Rules 71 and 71.1 are not being amended to meet the Best Available Retrofit Control Technology or Every Feasible Measure requirements of the California Clean Air Act, an incremental cost-effectiveness analysis is not required.

CEQA

The proposed revisions are exempt from CEQA under section 15061(b) (3) of the CEQA Guidelines because it can be seen with certainty that there is no possibility that these changes may have a significant effect on the environment.

ENVIRONMENTAL IMPACTS OF METHODS OF COMPLIANCE

California Public Resources 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 on the proposed revisions to Rules 71 and 71.1:

(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.

The following table lists all reasonably foreseeable compliance methods, the environmental impacts of those methods, and measures that could be used to mitigate the environmental impacts.
The above analysis demonstrates that the adoption of Rules 71 and 71.1 will not have a significant effect on the environment due to unusual circumstances, and that the adoption of these rules is categorically exempt from the requirements of the California Environmental Quality Act (CEQA).

### ANALYSIS OF EXISTING FEDERAL AND EXISTING OR PROPOSED DISTRICT AIR POLLUTION CONTROL REGULATIONS

Health and Safety Code Section 40727.2 subdivision (a) requires that the district prepare a written analysis that identifies all existing federal air pollution control requirements that apply to the same equipment or source type as the proposed revisions to Rule 71.1. This analysis shall also identify any of the District’s existing or proposed rules that apply to the same equipment or source type and all air pollution control requirements and guidelines that apply to the same equipment or source type.

Rule 71.1 applies to Crude Oil and Natural Gas Production and Processing Facilities. The existing federal regulations that apply to this source type are: 1) National Emission Standards for Hazardous Air Pollutants (NESHAP) for Crude Oil and Natural Gas Production Facilities, Code of Federal Regulations, Title 40, Part 63, Subpart HH, and 2) Standards of Performance (NSPS) for Crude Oil and Natural Gas Production, Transmission, and Distribution, Code of Federal Regulations, Title 40, Part 60, Subpart OOOO. The existing or proposed District rules that contain emission control standards that may apply to oilfield production operations are listed below.

#### EMISSION CONTROL RULES APPLICABLE TO OILFIELD PRODUCTION OPERATIONS

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<th>Reasonably Foreseeable Mitigation Measures</th>
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<td>06</td>
<td>New Source Review</td>
<td>Vapors can be incinerated using a flare. Air Quality Impacts: Flare will emit NOx. NOx emissions are expected to be small and insignificant.</td>
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<td>30</td>
<td>Opaque</td>
<td>Vapors can be captured in carbon canisters. Water and Solid Waste Impacts: Improper disposal of spent carbon may cause water and solid waste impacts. Carbon does not control methane. Compliance with wastewater discharge standards and waste disposal requirements will mitigate the waste impacts. A flare would control methane.</td>
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