

State of California
Air Resources Board

BOARD ITEM SUMMARY

ITEM # 07-6-1: Procedure for Considering Concurrence with Agricultural Burning Rules in the San Joaquin Valley

STAFF RECOMMENDATION:

Not applicable. Informational item.

DISCUSSION:

Senate Bill 705, Florez, enacted in 2003, generally requires the phase-out of agricultural burning of certain crops and waste in the San Joaquin Valley. However, SB 705 allows the SJV Unified Air Pollution Control District to postpone the burning prohibition for any category of crop or crop waste if the District determines certain criteria are met, and ARB concurs with those determinations. The District has adopted Open Burning Rule 4103 to implement the prohibitions of SB 705 with certain exceptions. ARB staff reviewed and concurred with the initial version of the Rule in 2005. Recently, Rule 4103 was amended to allow the continued burning of pulled orchard trees until June 1, 2010. ARB's concurrence with the latter amendments is pending.

SUMMARY AND IMPACTS:

Staff will present the procedure for determining ARB concurrence with the District's recent amendments to Rule 4103 relating to pulled orchard trees.

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ITEM # 07-6-2: San Joaquin Valley 2007 Ozone Plan

STAFF RECOMMENDATION:

Approve the San Joaquin Valley ozone plan contingent on subsequent approval of the Board's statewide strategy on June 22, 2007. Approve related technical updates (described below). Direct the Executive Officer to take final action to adopt the District's plan once the statewide strategy is approved and to submit the plan to the U.S. Environmental Protection Agency as a revision to the California State Implementation Plan.

DISCUSSION:

The federal Clean Air Act establishes planning requirements for areas that exceed National Ambient Air Quality Standards. Such areas must develop State Implementation Plans (SIPs) that demonstrate how they will attain federal air quality standards by specified dates. In July 1997, U.S. EPA promulgated a new 8-hour ozone standard. Subsequently, the U.S. EPA classified the San Joaquin Valley Air Basin as a "serious" ozone nonattainment area with an attainment date of June 15, 2013. Nonattainment areas needing more time to achieve emission reductions can request a "bump up" to a higher classification of "severe" or "extreme," with correspondingly more stringent control requirements and later deadlines for attainment. The federal approval of bump-up requests is nondiscretionary.

On April 30, 2007, the San Joaquin Valley Unified Air Pollution Control District adopted its ozone plan after extensive input from the public. Within the plan, the District requested reclassification to "extreme" which carries an attainment deadline of June 15, 2024. The reclassification to extreme is driven by the extraordinary amount of emission reductions needed to attain – particularly from mobile sources – and the District's and ARB staff's joint determination of how quickly they can be achieved. The bump-up to extreme is controversial but, legally speaking, is the only course of action the District can pursue. To assure the public that every feasible action will be taken expeditiously, the District has separately committed to "beat the SIP" wherever possible.

The plan includes commitments for new emission control rules to be adopted by the District. The plan also relies on the emission reduction benefits of the proposed 2007 State Strategy, which will be considered by the Air Resources Board at its June 21-22, 2007 hearing. These new measures combined with the emission reductions from existing federal, State and local rules will achieve all of the reactive organic gas (ROG), and nearly 85% of the nitrogen oxide (NOx),

reductions needed to attain the 8-hour ozone standard. The remaining 80 tons per day of NOx reductions necessary for attainment will come from advanced technologies expected to develop over the coming years.

The ARB staff proposal includes three technical updates to the San Joaquin Valley 2007 Ozone Plan:

- An update to the pesticide emissions inventory based on a new methodology which includes updated emission factors and an application use factor;
- An updated Reasonable Further Progress (RFP) demonstration to reflect the revised pesticide emissions; and
- Updated transportation conformity budgets for Madera and San Joaquin counties which correct a data entry error in the 2008 emissions budget (San Joaquin) and incorporate revised activity data (Madera) that was not available in time for the local adoption hearing.

ARB staff has analyzed the San Joaquin Valley 2007 Ozone Plan and concurs that it meets all applicable federal requirements and demonstrates attainment of the 8-hour ozone standard by June 15, 2024.

SUMMARY AND IMPACTS:

Approval of the District's 2007 ozone plan will put the San Joaquin Valley will continue the steady progress in reducing public exposure to unhealthful air pollution. It will also put the District and ARB on legally enforceable course to attain the federal ozone standard by June 2024.

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ITEM # 07-6-3: Amendments to the Phase 3 California Reformulated Gasoline (CaRFG3) Regulations

STAFF RECOMMENDATION:

Approve the proposed amendments to the regulations.

DISCUSSION:

California gasoline used to contain methyl teryl butyl ether (MTBE) as an oxygenate. MTBE was phased-out in 1999 due to water contamination concerns. At the time, federal law still required oxygenates in gasoline (as opposed to the national renewable fuel requirement that is in place today). To comply with that federal mandate, refiners substituted ethanol for MTBE.

As part of the MTBE phase-out, State law required that ARB amend its gasoline regulations to preserve all of the existing benefits from the MTBE blends. Ethanol increases vehicular exhaust emissions of oxides of nitrogen (NOx). Accordingly, ARB staff adjusted the gasoline regulations to mitigate that effect. Ethanol was also thought to increase permeation emissions of volatile organic compounds (VOC) through vehicle hoses, particularly in older cars. However, ARB was unable to quantify that effect at the time, so instead commissioned a study to determine the actual impact. Since then, staff has determined that permeation emissions from on-road motor vehicles will account for 18 tons per day of excess VOC in 2010. The proposed rule changes require gasoline formulations that mitigate those emissions. Unfortunately, the permeation from off-road sources such as lawn mowers, gasoline-powered utility equipment and other units is still not known. Staff is conducting an offroad test program and will return to the board in the future with final rule adjustments once the offroad impacts are determined.

California's gasoline rule is a performance standard rather than one set formula. Refiners are allowed to adjust eight different properties of the fuel (boiling point, sulfur, volatility, etc), within specified ranges, to meet an overall emissions level. This balancing process is done through a mathematical "Predictive Model" which calculates the interactive effects of various fuel properties based on data drawn from extensive vehicle testing. The proposed amendments to the gasoline regulation adjust the Predictive Model and bring all other aspects of the rule up to date with current information. Specifically, staff is proposing to amend the CaRFG3 regulations as follows:

- Require gasoline formulations that mitigate on-road permeation emissions starting December 31, 2009.
- Make corresponding changes to the Predictive Model to enable those reformulations, based on the latest vehicle test data.
- Allow refiners an alternative compliance option where they may obtain some or all of the required emission reductions from other sources until December 31, 2011 (with a one year extension option), thereby providing sufficient time for refinery investments and on-site modifications.
- Reduce the current sulfur cap from 30 parts per million by weight (ppmw) to 20 ppmw to improve enforcement throughout the gasoline distribution system; allow emissions averaging for very low level sulfur blends to give refiners sufficient flexibility to manage individual batches of fuel.
- Allow ethanol blends to use the Reid Vapor Pressure flat limit of 7.00 pounds per square inch (psi); retain 6.90 psi for non-oxygenated fuels. This would eliminate an unnecessary requirement for ethanol blends while continuing to mitigate evaporative emissions caused by commingling of non-oxygenated and oxygenated fuels.
- Make various other minor clarifications to increase flexibility, consistency and enforceability of the CaRFG3 regulation.

The net effect of these changes is as follows. To mitigate permeation emissions, refiners will have to reduce the sulfur content of their fuels and, paradoxically, use even more ethanol than they do today. That is because they have very few options to reduce evaporative VOC emissions and must instead compensate by reducing combustion-related NOx. Once the rule takes effect in 2010, staff expects California gasoline to have extremely low sulfur levels and to contain roughly 8-10% ethanol (as compared to 5.7% ethanol today).

SUMMARY AND IMPACTS:

The proposed amendments restore part of the air quality benefits lost from the phase-out of MTBE and will therefore improve public health. There are no significant impacts to water quality or the environment.

Staff estimates that the proposed amendments will require equipment upgrades at California refineries and increase gasoline production costs between 0.3 to 0.8 cents per gallon of gasoline. There is a 1.3 percent fuel economy penalty associated with increased ethanol in gasoline, assuming an ethanol increase from 6 to 10 percent. Considering both effects, staff estimates that the total cost to the end user will be about \$36 per year or about 1.5 percent of total annual fuel costs for a typical California driver.