

**Technical Support Document**

for

**Approval and Promulgation of Implementation Plans; Arizona-- Maricopa  
Nonattainment Area; PM-10**

**Notice of Proposed Rulemaking**

June 22, 2001

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## **I. Introduction**

EPA is proposing to approve under the Clean Air Act (CAA), as a revision to the Arizona State Implementation Plan (SIP), a general permit rule that provides for the expeditious implementation of best management practices (BMPs) to reduce particulate matter (PM-10) from agricultural sources in the Maricopa County (Phoenix) PM-10 nonattainment area. EPA is proposing to approve the general permit rule as meeting the “reasonably available control measure” (RACM) requirements of the Act.

This Technical Support Document (TSD) outlines the information submitted in support of the State’s agricultural general permit. The TSD includes numerous attachments which provide important background information relating to this action.

## **II. History of General Permit**

For the sake of brevity, discussions provided in the Notice of Proposed Rulemaking (NPR) in today’s action are not wholly repeated in the TSD. Rather, major highlights in the development of the general permit are provided.

On August 3, 1998, EPA promulgated under the authority of CAA section 110(c)(1) a federal implementation plan (FIP) to address the CAA’s moderate area PM-10 requirements for the Phoenix PM-10 nonattainment area. 63 FR 41326 (August 3, 1998). In the FIP, EPA promulgated, among other things, a demonstration that RACM will be implemented in the Phoenix area as soon as practicable. As part of its RACM demonstration, EPA promulgated an enforceable commitment, codified at 40 CFR 52.127, to ensure that RACM for agricultural sources would be expeditiously adopted and implemented. See 63 FR 41326, 41350.

In May 1998, Arizona Governor Hull signed into law Senate Bill 1427 (SB 1427) which revised title 49 of the Arizona Revised Statutes (ARS) by adding section 49-457. This legislation established an Agricultural Best Management Practices (BMP) Committee that was required to adopt by rule by June 10, 2000, an agricultural general permit specifying BMPs for regulated agricultural activities to reduce PM-10 emissions in the Maricopa PM-10 nonattainment area, including implementation of an education program by June 10, 2000.

On September 4, 1998, the State submitted ARS 49-457 to EPA for inclusion in the Arizona SIP as meeting the RACM requirements of CAA section 189(a)(1)(C) and requested that the Agency approve that legislation in place of the FIP commitment in 40 CFR 52.127. On June 29, 1999, EPA approved ARS 49-457 as meeting the RACM requirements of the CAA and withdrew the FIP commitment.

64 FR 34726.

As directed by ARS 49-457, the Agricultural BMP Committee adopted the agricultural general permit and associated definitions, effective May 12, 2000, at Arizona Administrative Code (AAC) R18-2-610, "Definitions for R18-2-611," and 611, "Agricultural PM-10 General Permit; Maricopa PM10 Nonattainment Area" (collectively, general permit rule). On July 11, 2000, the State submitted AAC R18-2-610 and 611 to EPA as a revision to the Arizona SIP.

In addition to fulfilling the commitment in ARS 49-457 approved by EPA as part of the moderate area PM-10 plan, this submittal was intended to partially satisfy the CAA's serious area PM-10 requirements; the State indicated that documentation for the remaining portions of the serious area SIP revision package would be submitted at a later date. On April 26, 2001, the State submitted this additional documentation as part of a draft revision to the 1999 serious area plan and requested parallel processing, a procedure adopted by EPA to expedite review of a state plan. See 40 CFR part 51, appendix V, section 2.3.1. The State formally submitted the final revision to EPA on June 13, 2001.

In today's action, EPA is proposing only to approve the general permit rule as meeting the CAA's RACM requirements.

AAC R18-2-611 includes thirty-four BMPs identified by the BMP Committee as feasible, effective, and common sense practices that will reduce PM-10 emissions while minimizing negative economic impacts on local agriculture.

AAC R18-2-611 requires a commercial farmer to implement by December 31, 2001 at least one BMP to control PM-10 for three categories of emission sources: tillage and harvest, non-cropland, and cropland.

The BMP Committee began implementing the general permit rule in June 2000 by means of an extensive educational outreach program informing growers about the BMPs. In addition, the BMP Committee developed a Guide to Agricultural PM-10 Best Management Practices to provide information and guidance on how to effectively implement BMPs. The BMP Committee also developed an Agricultural BMP General Permit Education Program to inform and educate the public and growers about the forthcoming general permit. As of July 2000 nine public presentations had been given in addition to the twenty-two public meetings held by the BMP Committee. Informational public workshops for growers were held on February 20, 2001 and March 1, 2001. In addition, ADEQ plans to hold an annual workshop to educate growers, inspectors, and interested stakeholders. In addition to the guide referenced above, the BMP Committee developed a brochure to inform the public and growers about PM-10 and the BMPs.

### **III. Evaluation of the Agricultural General Permit Rule**

CAA section 189(a)(1)(C), as interpreted by EPA under the current circumstances, requires that a moderate area plan provide for the implementation of RACM as soon as practicable. Arizona's requirements regarding the timing of the implementation of the BMPs are contained in ARS 49-457. Since EPA already approved this legislation as meeting the "as expeditiously as practicable" test and the general permit rule was adopted in compliance with the statute, EPA need not revisit the timing issue in this rulemaking. See 64 FR 34726.

Therefore EPA need only determine whether the BMPs in the general permit rule meet the level of control required by CAA section 189(a)(1)(C). In September 1998, the Agricultural BMP Committee was established for the purpose of developing an agricultural general permit specifying BMPs. The BMP Committee established an Ad-hoc Technical Group to develop a comprehensive list of potential BMPs for regulated sources in the Maricopa nonattainment area.

The Ad-hoc Technical Group reviewed available dust control regulations, literature, and technical documents, and developed a list of conservation practices potentially suitable to agricultural sources in the Maricopa County nonattainment area. The information sources evaluated included: (1) NRCS Field Office Technical Guide;

(2) South Coast Air Quality Management District Rule 403 (fugitive dust) Agricultural Handbook; (3) San Joaquin Valley Unified Air Pollution Control District 1997 PM-10 Attainment Demonstration Plan; (4) University of Arizona Cooperative Extension Mojave Valley research project; (5) University of Washington Columbia Plateau research project; (6) ENSR Report: Evaluation of Fugitive Dust Control in the Maricopa County PM-10 Nonattainment Area. March 1997. Document Number 0493-015-500.

Particulate Control Measure Feasibility Study: Volumes I and II. Prepared for the Maricopa Association of Governments by Sierra Research. January 1997

From a review of these information sources, 65 potential practices for further consideration were selected. These 65 measures represented a broad spectrum of potential BMPs represented a list of potential practices to be considered in determining what measures are actually available for implementation in the Phoenix area.

The USDA Natural Resources Conservation Service (NRCS) provided technical assistance to the BMP Committee and Ad-hoc Technical Group and was instrumental in helping evaluate the potential conservation practices. NRCS is the lead federal agency involved with determining conservation practices for reducing soil erosion. NRCS's conservation practices are based on scientific

research and, upon approval, are compiled in NRCS's National Engineering Field Manual and Field Office Technical Guides (FOTG). Practices in the local FOTG are tailored to meet local conditions (e.g., soil types) applicable to a given area. The majority the BMPs selected by the Committee are consistent with the conservation practices found in NRCS's Field Manual and Technical Guide.

The Agricultural BMP Committee thoroughly reviewed the potential practices presented by the Ad-hoc Technical Group and identified 34 of the 65 BMPs to include in the general permit rule that the Committee deemed to be feasible, effective and common sense practices for the Phoenix area which also minimized potential negative impacts on local agriculture.

Of the 31 potential BMPs eliminated, the majority were dropped because they either duplicated another BMP or did not reduce PM-10. Other reasons for elimination included the impracticability of a BMP for the Maricopa County Area, lack of cost effectiveness, or infeasibility of implementation. Because of the variety, complexity, and uniqueness of farming operations, the BMP Committee concluded that farmers need a variety of BMPs to choose from in order to tailor PM-10 controls to their individual circumstances. Further, the BMP Committee acknowledged that there is a limited amount of scientific information available concerning the emission reduction and cost effectiveness of some BMPs, especially in relation to Maricopa County. The BMP Committee balanced these limitations with the common sense recognition that the BMPs would reduce wind erosion and the entrainment of agricultural soils, thereby reducing PM-10. Given the limited scientific information available and the myriad factors that affect farming operations, the BMP Committee concluded that requiring more than one BMP could not be considered technically justified and could cause an unnecessary economic burden to farmers. Instead, the BMP Committee and ADEQ committed to monitor the effectiveness of the BMPs and adjust the program, if needed, in the future.

There are only two PM-10 nonattainment areas in the nation that are currently requiring agricultural sources to reduce PM-10 emissions. The South Coast Air Quality Management District (SCAQMD), which includes the agricultural areas of western Riverside County and the Coachella Valley, is implementing Rules 403 and 403.1 to reduce PM-10 emissions from agricultural sources. The Arizona general permit rule represents the only other measure in the country that requires the implementation of BMPs to reduce PM-10. Because agricultural sources vary by factors such as regional climate, soil type, growing season, crop type, water availability, and relation to urban centers, agricultural PM-10 strategies must be based on local factors. Therefore, while the Committee surveyed measures adopted in other geographic areas, they are of limited utility in determining what

measures are available for Maricopa County area. In order to justify additional requirements for farming operations in the area beyond those in the general permit rule, a significant influx of money and additional research would be needed.

The development of the general permit rule was a multi-year endeavor involving an array of experts in agricultural practices. As noted, Arizona is one of the few areas where regulation of PM-10 emissions from the agricultural sector has even been attempted. Based on the available information, EPA believes that the general permit rule represents a comprehensive, sensible approach that meets, and in fact far exceeds, the RACM requirements of CAA section 189(a)(1)(C) and EPA guidance interpreting those requirements.

#### **IV. General SIP & CAA Section 110(l) Requirements**

EPA has concluded that the State's June 13, 2001 submittal provides the necessary assurances of adequate personnel and funding required by CAA section 110(a)(2)(E)(i) and 40 CFR 51.280 to carry out the general permit program.

In its rulemaking on ARS 49-457, EPA concluded that approval of the State legislation and withdrawal of the FIP commitment would not interfere with the attainment, reasonable further progress and RACM requirements of the CAA. 63 FR 71815, 71817. Since the general permit rule strengthens the SIP by providing specific BMPs in place of the commitment to adopt BMPs in ARS 49-457, EPA's proposed approval meets the requirements of CAA section 110(l).

#### **V. Additional Supporting Information**

The majority of information used by EPA in support of the proposed action is found in the FR and CFR citations referenced in the NPR and in State's SIP June 13, 2001 submittal. Key documents referenced in the State's submittal are attached. FR and CFR documents are not attached.

Additional information, including links to other sources and minutes from the BMP Committee meetings during the 1998-2000 period, can be viewed at: <http://www.adeq.state.az.us/environ/air/plan/pcp.html#bmp>.

If the reader would like copies of any of the documents mentioned in the NPR or this TSD, please contact John Ungvarsky at 415-744-1286 or [ungvarsky.john@epa.gov](mailto:ungvarsky.john@epa.gov).

**Attachments**

## List of Attachments

Attachments are not available on EPA Region 9's Web Site. Attachments 1 and 6 are available at <http://www.adeq.state.az.us/environ/air/plan/pcp.html#bmp>. To obtain copies of the other attachments, contact John Ungvarsky at 415-744-1286 or at [ungvarsky.john@epa.gov](mailto:ungvarsky.john@epa.gov).

1. Arizona Revised Statutes 49 - 457. Agricultural best management practices committee; members; powers; permits; definitions
2. Maricopa County PM<sub>10</sub> State Implementation Plan Revision: Agricultural Best Management Practices, Richard W. Tobin II, ADEQ, to Felicia Marcus, EPA, July 11, 2000.
3. Submittal of State Implementation Plan Revision for the Agricultural Best Management Program in the Maricopa County PM<sub>10</sub> Nonattainment Area from Jacqueline E. Schafer, ADEQ, to Laura Yoshii, EPA, June 13, 2001.
4. Arizona Administrative Register, Title 18. Environmental Quality, Chapter 2. Department of Environmental Quality Air Pollution Control, Article 6. Emissions from Existing and New Nonpoint Sources. R18-2-610. Definitions for R18-2-611. June 2, 2000.
5. Arizona Administrative Register, Title 18. Environmental Quality, Chapter 2. Department of Environmental Quality Air Pollution Control, Article 6. Emissions from Existing and New Nonpoint Sources. R18-2-611. Agricultural PM<sub>10</sub> General Permit; Maricopa PM<sub>10</sub> Nonattainment Area. June 2, 2000.
6. Guide to Agricultural PM-10 Best Management Practices, Maricopa County, Arizona PM-10 Nonattainment Area," Governor's Agricultural BMP Committee, First edition, February, 2001.
7. Final Revised Background Information from Submittal of State Implementation Plan Revision for the Agricultural Best Management Program in the Maricopa County PM<sub>10</sub> Nonattainment Area from Jacqueline E. Schafer, ADEQ, to Laura Yoshii, EPA, June 13, 2001.
8. How Agriculture is Improving Maricopa County's Air Quality, Governor's Agricultural BMP Committee, March, 2001.
9. USDA Natural Resources Conservation Service, Arizona; Conservation Practice Summary; Air Quality (cropland - irrigated), Field Office Technical Guide Section IV, November, 1998.
10. Comprehensive List of Potential Practices, Enclosure 3, Attachment 8 of June 13,

**2001, Submittal of State Implementation Plan Revision for the Agricultural Best Management Program in the Maricopa County PM<sub>10</sub> Nonattainment Area.**

- 11. Evaluation of Fugitive Dust Control in the Maricopa County PM10 Nonattainment Area, ENSR Document No. 0493-015-500, March 1997, Only pages relevant to agricultural BMPs included.**
- 12. Submittal of State Implementation Plan Revision for the Agricultural Best Management Program in the Maricopa County PM<sub>10</sub> Nonattainment Area from Jacqueline E. Schafer, ADEQ, to Laura Yoshii, EPA, June 13, 2001.**



## **Attachment 1**

**Arizona Revised Statutes 49 - 457.  
Agricultural best management practices committee;  
members; powers; permits; definitions.**

## **Attachment 2**

**Maricopa County PM10 State Implementation Plan Revision:  
Agricultural Best Management Practices,  
Richard W. Tobin II, ADEQ, to Felicia Marcus, EPA,  
July 11, 2000.**

**Attachment 3**

**Submittal of State Implementation Plan revision for the Agricultural  
Best Management program in the Maricopa County PM<sub>10</sub>  
Nonattainment Area;  
Jacqueline E. Schafer, ADEQ, to Laura Yoshii, EPA,  
June 13, 2001.**

**Attachment 4**

**Arizona Administrative Register**

**Title 18. Environmental Quality**

**Chapter 2. Department of Environmental Quality Air Pollution Control**

**Article 6. Emissions from Existing and New Nonpoint Sources**

**R18-2-610. Definitions for R18-2-611.**

**June 2, 2000.**

**Attachment 5**

**Arizona Administrative Register  
Title 18. Environmental Quality**

**Chapter 2. Department of Environmental Quality Air Pollution Control**

**Article 6. Emissions from Existing and New Nonpoint Sources.**

**R18-2-611. Agricultural PM10 General Permit; Maricopa PM10  
Nonattainment Area June 2, 2000.**

## **Attachment 6**

**Guide to Agricultural PM-10 Best Management Practices,  
Maricopa County, Arizona PM-10 Nonattainment Area,  
Governor's Agricultural BMP Committee,  
First edition, February, 2001.**

## **Attachment 7**

**Final Revised Background Information,  
Submittal of State Implementation Plan Revision  
for the Agricultural Best Management Program  
in the Maricopa County PM<sub>10</sub> Nonattainment Area  
from Jacqueline E. Schafer, ADEQ, to Laura Yoshii, EPA,  
June 13, 2001.**

**Attachment 8**

**How Agriculture is Improving Maricopa County's Air Quality  
Governor's Agricultural BMP Committee  
March, 2001.**



**Attachment 9**

**USDA Natural Resources Conservation Service, Arizona;  
Conservation Practice Summary;  
Air Quality (cropland - irrigated),  
Field Office Technical Guide Section IV,  
November, 1998.**

## **Attachment 10**

**Comprehensive List of Potential Practices,  
Enclosure 3, Attachment 8 of June 13, 2001 Submittal of State  
Implementation Plan Revision for the Agricultural Best Management  
Program in the Maricopa County PM<sub>10</sub> Nonattainment Area.**

## **Attachment 11**

**Evaluation of Fugitive Dust Control in the  
Maricopa County PM10 Nonattainment Area,  
ENSR Document No. 0493-015-500, March 1997,  
Only pages relevant to agricultural BMPs included.**

## **Attachment 12**

**Submittal of State Implementation Plan Revision for the  
Agricultural Best Management Program  
in the Maricopa County PM<sub>10</sub> Nonattainment Area  
from Jacqueline E. Schafer, ADEQ, to Laura Yoshii, EPA,  
June 13, 2001.**