DRAFT NOTICE OF FINAL RULEMAKING

Rule 325

Maricopa County Air Pollution Control Regulations

PREAMBLE

1.	**Rules Affected**	**Rulemaking Action**
	Rule 325 – Brick and Structural Clay Products (BSCP) Manufacturing	New Rule

2. The statutory authority for the rulemaking, including both the authorizing statute (general) and the statutes the rule is implementing (specific):

Authorizing Statutes: Arizona Revised Statutes (A.R.S.) § 49-112 (A) and § 49-479

Implementing Statute: Arizona Revised Statutes (A.R.S.) § 49-479

3. The effective date of the rule:

August 10, 2005

4. A list of all previous notices appearing in the Register addressing the final rule:

Notice of Rulemaking Docket Opening, May 27, 2005
Arizona Administrative Register (A.A.R.), Volume 11, Issue 22.

Notice of Proposed Rulemaking, May 27, 2005
Arizona Administrative Register (A.A.R.), Volume 11, Issue 22

Notice of Proposed Rulemaking, Oral Proceeding Date: August 1, 2005
Arizona Administrative Register (A.A.R.), Volume 11, Issue 22

5. The name and address of department personnel with whom persons may communicate regarding this rulemaking:

Name:	Patricia P. Nelson or Jo Crumbaker, Air Quality Division
Address:	1001 North Central Avenue, Suite # 695, Phoenix, AZ 85004
Telephone Number:	602-506-6709 or 602-506-6705
Fax Number:	602-506-6179
E-Mail Address:	pnelson@mail.maricopa.gov or jcrumbak@mail.maricopa.gov

6. **An explanation of the rule, including the department's reasons for initiating the rule:**

Maricopa County is promulgating a new rule, Rule 325, Brick and Clay Structural Products (BCSP) Manufacturing to regulate industries that are now regulated by Rule 311, Particulate

Matter from Process Industries. Maricopa County will incorporate Best Available Control Measures (BACM) and Most Stringent Measures (MSM) proposed in the Salt River PM_{10} State Implementation Revision by implementation of this rule.

Section by Section Explanation of Changes:

Section 101	This text lists the purpose of the rule.
Section 102	This text outlines the applicability of the rule.
Section 103	This text lists the exemptions to the rule.
Section 201	This text defines a "brick and structural clay manufacturing facility".
Section 202	This text defines a "continuous kiln."
Section 203	This text defines the term "existing kiln."
Section 204	This text defines the term "kiln feed."
Section 205	This text defines the term "periodic kiln."
Section 206	This text defines the term "research and development kiln."
Section 207	This text defines the term "tunnel kiln."
Section 301	This text states the opacity limitation for all tunnel kilns subject to the rule.
Section 302	This text lists the particulate matter limitations for existing kilns.
Section 303	This text lists the two different particulate matter limitations for existing kilns with a capacity of less than 10 tons per hour throughput and of those with greater than 10 tons per hour.
Section 401	This text lists the compliance time schedule for the rule.
Section 501	This text lists the method for proving compliance with the rule.
Section 502	This text states the fact that records shall be kept for 5 years.
Section 502.1	This text states that daily records of kiln fees and hours of operation shall be kept.
Section 502.2	This text states the type of monthly records of materials delivered and product reports that shall be kept.
Section 503	This text lists where the test methods in the Code of Federal Regulations are kept at Maricopa County.
Section 503.1	This text lists EPA reference Method 9.
Section 503.2	This text lists EPA reference Method 5.

Section 503.3 This text lists EPA reference Method 202.

7. A reference to any study relevant to the rule that the agency reviewed and either relied on in its evaluation of or justification for the rule or did not rely on in its evaluation of or justification for the rule and where the public may obtain or review the study, all data underlying each study, any analysis of the study, and other supporting material:

1. "Economic Impact Analysis on Particulate Matter Emissions for Brick and Structural Clay Products Manufacturing" by David Lillie, Economist at Arizona Department of Environmental Quality, September 28, 2004.

2. *National Emission Standards for Hazardous Air Pollutants for Brick and Structural Clay Products Manufacturing; and National Emission Standards for Hazardous Air Pollutants for Clay Ceramics Manufacturing*; Final Rule, Federal Environmental Protection Agency,40 CFR, Part 63, May 16, 2003.

8. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:
Not applicable.

9. The summary of the economic, small business, and consumer impact:
Arizona Department of Environmental Quality (ADEQ) had prepared an extensive economic impact analysis on this rule on September 20, 2004 which is summarized in the following text: There are 2 brick and structural clay product manufacturing facilities that have the potential to be regulated by this rule in Arizona and only one tunnel kiln in Maricopa County. The common materials used in both are clay minerals. Kilns used in these industries to dry and cure brick may be either periodic or batch kilns or continuous kilns such as tunnel kilns. The facility has been manufacturing brick in its present location since 1935. Its actual production rates of brick in 2002 and 2003 were approximately 45,400 tons and 40,500 tons, respectively. Reported PM emissions from curing and firing for those respective years were about 39,500 pounds and 35,200 pounds. These PM emissions from the tunnel kiln represent about 80 percent of total PM emissions at this facility. This rule will address tunnel kilns. Uncontrolled particulate matter emissions from these tunnel kilns range from 0.0350 lb/ton to 0.9756 lb/ton with an average of 0.492 lb/ton. Air pollution control devices for these kilns are dry lime scrubbers with fabric filter (DFLS) and dry injection fabric filter (DIFF) which can achieve 99 % control efficiency for PM. DLA (dry lime adsorption) technology is less efficient and is basically an acid gas device yet can provide some control for particulate matter in the range of 50% for an upper

range. The MACT (Maximum Achievable Control Technology) was established by EPA in the rulemaking process and the MACT floor was based upon the use of DIFF, DLS and WS (wet scrubbers). DLA was not considered at that time. Because of several retrofitting concerns with DIFF, DLS and WS, EPA now believes that DLA is the only technology currently that can be used to retrofit existing sources without significant impacts on the production process.

The average cost per ton of PM removed for a medium-sized tunnel kiln using DLS/FF control technology is approximately $21,125. For installing DIFF in a medium-sized tunnel kiln, the cost per ton of removing PM is estimated at $18,300. DLS data and kiln test results show that DLS/FF and DIFF control technology can achieve a 99 percent control efficiency for PM. Although DLA is an acid gas device, it does provide some control for PM. The upper bound of control of PM is probably 50 percent, according to EPA. DLA control devices are used around the world to control emissions from brick kilns. EPA test data from four DLAs, which control emissions from six kilns, revealed outlet PM emissions ranged from 0.0732 lb/ton to 0.411 lb/ton. If the removal efficiency of a DLA was 50 percent with uncontrolled PM emissions averaging 0.492 lb/ton, the cost per ton to remove PM for a medium-sized tunnel kiln would be about $20,400. Caution should be used in evaluating the cost effectiveness for a DLA control device because the removal efficiency may be less than 50 percent.

Health benefits accrue to the general public whenever enforcement of environmental laws takes place. Adverse health effects from air pollution result in a number of economic and social consequences, including:

1. Medical Costs: These include personal out-of-pocket expenses of the affected individual (or family), plus costs paid by insurance or Medicare, for example.

2. Work loss: This includes lost personal income, plus lost productivity whether the individual is compensated for the time or not. For example, some individuals may perceive no income loss because they receive sick pay, but sick pay is a cost of business and reflects lost productivity.

3. Increased costs for chores and caregiving: These include special caregiving and services that are not reflected in medical costs. These costs may occur because some health effects reduce the affected individual's ability to undertake some or all normal chores, and she or he may require caregiving.

4. Other social and economic costs: These include restrictions on or reduced enjoyment

of leisure activities, discomfort or inconvenience, pain and suffering, anxiety about the future, and concern and inconvenience to family members.

The purpose of the NESHAP is to protect public health. Control technologies for protecting public health are governed through EPA's MACT standards. These standards are based on the emission levels achieved by the best-performing similar facilities in the U.S. using a performance-based approach for reducing toxic emissions as well as PM. It also ensures that facilities operating with good pollution controls are not disadvantaged relative to their competitors with none or less effective controls. Likewise, Maricopa County's Rule 325 is designed to protect public health by reducing PM.

Improvement in air quality will generate cost-saving benefits by avoiding adverse-health effects, such as emergency room visits, hospital admissions, acute pediatric bronchitis, chronic adult bronchitis, acute respiratory symptom days, and even premature death. Potential benefits arising from a reduction PM and other pollutants emitted into the atmosphere can be inferred from data associated with the reduction of any airborne PM.

Some of the health effects of human exposure to PM can be quantified while others cannot. Quantified adverse-health effects include: mortality, bronchitis (chronic and acute), new asthma cases, hospital admissions (respiratory and cardiovascular), emergency room visits for asthma, lower and upper respiratory illness, shortness of breath, respiratory symptoms, minor restricted activity days, days of work loss, moderate or worse asthma status of asthmatics. Unquantifiable adverse-health effects include: neonatal mortality, changes in pulmonary function, chronic respiratory diseases (other than chronic bronchitis), morphological changes, altered host defense mechanisms, cancer, and non-asthma respiratory emergency room visits (U.S. EPA, "The Benefits and Costs of the Clean Air Act 1990 to 2010," Chapter 5, "Human Health Effects of Criteria Pollutants," Table 5-1, Report to Congress, November 1999).

Epidemiological evidence shows that particulates have negative health impacts in a variety of ways, including: increased mortality and morbidity; more frequent hospital admissions, emergency room and clinician visits; increased need and demand for medication; and lost time from work and school. There is also increasing evidence that ambient air pollution can precipitate acute cardiac episodes, such as angina pectoris, cardiac arrhythmia, and myocardial infraction, although the majority of PM-related deaths are attributed to cardiovascular disease (The EPA's Particulate Matter (PM) Health Effects Research Center Program, prepared by PM Centers Program staff, January 2002).

New evidence also links exposure to ambient PM concentrations to airway inflammation that in turn produces systemic effects, such as acute phase response with increased blood viscosity and coagulability, as well as increased risk of myocardial infraction in patients with coronary artery disease. Chronic effects of repeated airway inflammation may also cause airway remodeling, leading to irreversible lung disease. Individuals with asthma and chronic obstructive pulmonary disease may be at even higher risk from repeated exposure to particulates (The EPA's Particulate Matter (PM) Health Effects Research Center Program).

The Health Effects Institute confirmed the existence of a link between particulate matter and human disease and death (premature mortality). The data revealed that long-term average mortality rates, even after accounting for the effects of other health effects, were 17-26% higher in cities with higher levels of airborne PM (Health Effects of Particulate Air Pollution: What Does The Science Say**?** Hearing before the Committee on Science, House of Representatives, 107th Congress of the U.S., second session, May 8, 2002). Data further reveal that every 10-microgram increase in fine particulates per cubic meter produces a 6% increase in the risk of death by cardiopulmonary disease, and an 8% increase for lung cancer. Even very low concentrations of PM can increase the risk of early death, particularly in elderly populations with preexisting cardiopulmonary disease (STAPPA and ALAPCO, Controlling Particulate Matter Under the Clean Air Act: A Menu of Options, July 1996).

In 2002 alone, chronic obstructive pulmonary disease cost the U.S. more than $32 million, a sum not including costs attributable to asthma (American Lung Assoc., Trends in Chronic Bronchitis and Emphysema: Morbidity and Mortality, Epidemiology and Statistics Unit, Research and Scientific Affairs, March 2003). In Arizona, deaths attributable to asthma have equaled or exceeded national rates from 1991-1998. In 1998, some 316,200 Arizonans suffered breathing discomfort or asthma related stress (Arizona Department of Health Services, Asthma Control Program, Office of Nutrition and Chronic Disease Prevention Services, October, 2002).

ADEQ expects that a reduction in PM potentially will create commensurate cost-saving benefits to the general public by contributing towards reducing these emissions-related health problems. Maricopa County's Rule 325 will help improve the general quality of life for citizens of Arizona, particularly those residing near sources that have reduced PM emissions and other air pollutants associated with the manufacturing processes.

Because the installation of air pollution control devices also will reduce other air pollutants, additional health effects may accrue to the public and kiln employees due to reduced exposure levels. It has been demonstrated that exposure to HAPs (mainly HF, HCL, and associated HAP

metals) causes adverse chronic and acute health effects. Chronic health disorders include irritation to lung, skin and mucus membranes, certain effects on central nervous system, and damage to kidneys. Acute health effects include lung irritation and congestion, alimentary effects (e.g., nausea and vomiting), and effects on kidney and central nervous system (68 FR 26692-26694, May 16, 2003).

Adverse-Health Effect	Per Case Valuation (1990 dollars)	Per Case Valuation (2003 dollars)
Mortality	$4,800,000	$7,122,600
Chronic bronchitis	$260,000	$385,800
Hospital admissions for respiratory conditions	$6,900	$10,240
Hospital admissions for cardiovascular conditions	$9,500	$14,100
Emergency room visits for asthma	$194	$288
Acute Bronchitis	$45	$67
Asthma attack	$32	$48
Moderate or worse asthma day	$32	$48
Adverse-Health Effect	Per Case Valuation (1990 dollars)	Per Case Valuation (2003 dollars)
Acute respiratory symptom	$18	$27
Upper respiratory symptom	$19	$28
Lower respiratory symptom	$12	$18
Shortness of breath, chest tightness, or wheeze	$5	$7
Work loss day	$83	$123
Mild restricted activity day	$38	$56

Table 6 -1

Health benefits can be expressed as avoided cases of PM related-health effects and assigned a dollar value. EPA used an average estimate of value for each adverse-health effect of criteria pollutants. Table 6-1 contains valuation estimates from the literature reported in dollars per case of chronic bronchitis avoided air. An individual's health status and age prior to exposure impacts his/her susceptibility. At risk persons include those who have suffered a stroke or have cardiovascular disease. Some age cohorts are more susceptible to air pollution than others i.e. children and the elderly.

Mortality in Table 6 actually refers to statistical deaths, or inferred deaths due to premature mortality. The values have been adjusted for inflation. According to the Consumer Price Index for all urban consumers (U.S. Department of Labor, Bureau of Labor Statistics), the purchasing power of the dollar has declined about 48 percent between 1990 and 2003.

A small decline in the risk for premature death will have a certain monetary value for individuals, and as such, they will be willing to pay a certain amount to avoid premature death. For instance, if PM emissions are reduced so that the mortality risk on the exposed population is decreased by one in one-hundred thousand, then among 100,000 persons, one less person will be expected to die prematurely. If the average willingness-to-pay (WTP) per person for such a risk reduction were $75.00, the implied value of the statistical premature death avoided would be 7.5 million.

Potential PM Control Costs Offset by Potential PM Control Benefits:
An Illustrative Example

A reduction in PM, as well as associated HAPs, from a tunnel kiln operating in Maricopa County, theoretically, can contribute to avoided health incidents by the general public, and employees that would be exposed during the course of their employment as well. The problem is that it is not possible to calculate the share of adverse-health effects that would be avoided as a direct result of a brick producer reducing PM, and associated air pollutants.

One may conclude that a reduction in PM from a brick kiln would contribute an unknown proportion of overall improvements in the general health of a population. It is likely that a reduction of 20 tons per year of PM would generate some degree of health benefits in Maricopa County. The health benefits, for example, could be as simple as reduced asthma attacks or hospital admissions; reduced emergency room visits and lost work days; or fewer restricted activity days. Health benefits also could include avoided or reduced respiratory symptoms and chronic bronchitis, and reduced premature mortality. The reduction of a single premature death could be worth $4.8 million to $7.1 million dollars in benefits.

If a minimum of one of each of the adverse-health effects shown in Table 6 were to be avoided, the aggregated value of adverse-health effects avoided in 2003 dollars would be $7,533,450. If the impact is such that no effect is contributed toward reduced premature mortality, the minimum value of improved health benefits, as a result of avoided adverse-health effects, would be $410,850. However, a reduction in PM emissions is likely to lead to more than a single

health-effect avoided in Table 6-1. Therefore, it is logical to conclude that annual health benefits may be much greater than this minimum value.

A single case of chronic bronchitis avoided ($385,800) generates health benefits that are approximately equal to the dollar amount in the estimated annualized compliance cost for installing and operating a DIFF control device. Furthermore, if a combination of multiple health effects, as listed in Table 6-1, were avoided due to reduced PM emissions, a significant increase in the dollar value of health benefits as a result of Rule 325 would accrue to the general public. For instance, if a single chronic bronchitis condition could be avoided ($385,800), as well as ten cases each of the other adverse-health effects listed in Table 6-1, excluding premature mortality, the aggregated value of avoided-health benefits would be $636,300.

If the entire value of $636,300 in estimated health benefits could be contributed to the 20-ton reduction in PM from the brick producer, this would translate into a per ton health benefit of $31,815. Taking this argument one step further, if the aggregated value of the adverse-health benefits avoided due to a reduction of 20 tons annually of PM, ranged from even a low of $385,800 to a high of $7,533,450, the health benefit would range from $19,290 to $376,672 per ton. Compare the estimated annual abatement cost of $19,500 to remove one ton of PM (from p. 9) to the estimated health benefits gained from reduced PM emissions the range of $19,290 to $376,672 per ton. A logical conclusion of this analysis is that probable benefits will exceed the probable costs of Rule 325.

Considering the annualized cost of $390,000 for DIFF and the potential of passing on part of this cost to brick consumers, the cost effectiveness of removing 20 tons of PM under the two scenarios discussed on p. 9, results in a cost of $4,650 per ton or $9,600 per ton of PM removed. If the actual amount of PM removed annually exceeds 20 tons, the cost effectiveness would be even lower than these estimated values.

10. <u>A description of the changes between the proposed rule, including supplemental rules, and final rule (if applicable):</u>

There have been three changes between the proposed and final rule, but they are administrative in nature or changed for clarity and are not substantial.

In Section 401, the compliance schedule section is divided into two subsections in the final rule for clarity.

In Section 501, the compliance determination section is divided into two subsections in the final rule for clarity.

In Section 503.2, the reference to Method 202 is removed in the final rule because it is listed separately in Section 503.3 in the final rule.

11. A summary of the comments made regarding the rule and the agency response to them:

A responsiveness summary will be prepared following the oral proceeding on August 1, 2005 and posted on the Department website at http://www.maricopa.gov/aq/RULES/workshops.asp prior to the August 10, 2005 Maricopa County Board of Supervisors public hearing.

12. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:

Not applicable.

13. Incorporations by reference and their location in the rules:

	Location
EPA Reference Method 9 (Visual Determination of the Opacity of Emissions from Stationary Sources)	Section 503.1
EPA Reference Method 5 (Determination of Particulate Emissions from Stationary Sources)	Section 503.2
EPA Reference Method 202(Determination of Condensible Particulate Emissions from Stationary Sources)	Section 503.3

Incorporations by reference updated to 7/1/04:	**Location**
40 CFR Part 60 Appendix A	Section 503

14. Was this rule previously made as an emergency rule?

No

15. The full text of the rule follows:

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 325

BRICK AND STRUCTURAL CLAY PRODUCTS (BSCP) MANUFACTURING

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MARICOPA COUNTY

AIR POLLUTION CONTROL REGULATIONS

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 325

BRICK AND STRUCTURAL CLAY PRODUCTS (BSCP) MANUFACTURING

SECTION 100 – GENERAL

101 PURPOSE: To limit particulate matter emissions from the use of tunnel kilns for curing in the brick and structural clay product (BSCP) manufacturing processes.

102 APPLICABILITY: This rule applies to any existing, new or reconstructed tunnel kiln, used in the commercial and industrial brick and structural clay product manufacturing processes. Compliance with the provisions of this rule shall not relieve any person subject to the requirements of this rule from complying with any other federally enforceable New Sources Performance Standards (NSPS). In such cases, the most stringent standard shall apply.

103 EXEMPTIONS: Existing, new or reconstructed tunnel kilns that are used exclusively for research and development and are not used to manufacture products for commercial sale are not subject to this rule.

SECTION 200 – DEFINITIONS: See Rule 100 (General Provisions And Definitions) of these rules for definitions of terms that are used but not specifically defined in this rule. For the purpose of this rule, the following definitions shall apply:

201 BRICK AND STRUCTURAL CLAY PRODUCTS (BSCP) MANUFACTURING FACILITY- A site that manufactures brick including, but not limited to: face brick, structural brick and brick pavers; claypipe; roof tile; extruded floor and wall tile; and/or other extruded, dimensional, clay products. Brick products manufacturing facilities typically process raw clay and shale, form the processed materials into bricks or shapes, and dry and fire the bricks or shapes.

202 CONTINUOUS KILN – A heated chamber that heats dense loads uniformly and efficiently, and can be used without interruption for high volume production. Continuous kilns are kilns that perform well in the consistent high production of wares. Continuous kilns include tunnel kilns,

shuttle kilns, fixed-hearth kilns, bee hive kilns, roller kilns, sled kilns, decorating kilns, and pusher slab kilns. Most continuous kilns are tunnel kilns.

203 EXISTING KILN - A kiln that is in operation before the date of adoption of this rule.

204 KILN FEED – All materials except fuel entering the tunnel kiln, including raw feed and recycle dust, measured on a dry basis.

205 PERIODIC KILN – A kiln that operates on an intermittent basis to heat wares, holding them at a uniform peak temperature and cool the wares. Periodic kilns are best for inconsistent or low-volume production.

206 RESEARCH AND DEVELOPMENT TUNNEL KILN- Any tunnel kiln whose purpose is to conduct research and development for new processes and products and is not engaged in the manufacture of commercial products for sale.

207 TUNNEL KILN – Any continuous kiln that is used to fire brick and structural clay products. Tunnel kilns may have two process streams, including a process stream that exhausts directly to the atmosphere or to an Air Pollution Control Device, and a process stream in which the kiln exhaust is ducted to a brick dryer where it is used to dry bricks before the exhaust is emitted to the atmosphere.

SECTION 300 – STANDARDS

301 OPACITY LIMITATIONS FOR ALL TUNNEL KILNS SUBJECT TO THIS RULE: No person shall discharge into the ambient air from any single source of emissions any air contaminant, other than uncombined water, in excess of 20 % opacity.

302 LIMITATIONS FOR EXISTING TUNNEL KILNS AT BRICK OR STRUCTURAL PRODUCT (BSCP) MANUFACTURING FACILITIES:

302.1 No owner or operator shall emit more than 0.42 lbs. of particulate matter per ton of fired product from a tunnel kiln with a capacity of ≥1 tons per hour throughput.

303 LIMITATIONS FOR NEW OR RECONSTRUCTED TUNNEL KILNS AT BRICK OR STRUCTURAL PRODUCT (BSCP) MANUFACTURING FACILITIES:

303.1 No owner or operator shall emit more than 0.42 lbs. of particulate matter per ton of fired product from a tunnel kiln with a capacity of < 10 tons per hour throughput.

303.2 No owner or operator shall emit more than 0.12 lbs. of particulate matter per ton of fired product from a tunnel kiln with a capacity of ≥ 10 tons per hour throughput.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE: Any owner or operator of a tunnel kiln subject to this rule shall meet the following milestones:

401.1 Submit a compliance plan, by December 31, 2005, to the Control Officer for approval which describes the method(s) used to achieve full compliance with the rule. This plan shall specify dates for completing increments of progress, such as the contractual arrival date of new control equipment. The Control Officer may require an owner or operator submitting the compliance plan to also submit subsequent reports on progress in achieving compliance; and

401.2 Attain full compliance with all of the standards in this rule by December 31, 2006.

SECTION 500 - MONITORING AND RECORDS

501 COMPLIANCE DETERMINATION: Compliance shall be demonstrated as follows**:**

501.1 Compliance with Section 301 shall be demonstrated by performance of Method 9 listed in Section 503.1; and

501.2 Compliance with Sections 302 and 303 shall be demonstrated by performance of the test methods listed in Section 503.2 and 503.3.

502 RECORDKEEPING / RECORDS RETENTION: The owner or operator of any kiln subject to this rule shall comply with the following requirements and keep records for a period of 5 years:

502.1 Daily records of kiln feed fired and hours of operation; and

502.2 Monthly records of material delivered to the site for processing in the tunnel kiln and the amount of product produced reported in tons.

503 TEST METHODS: The Environmental Protection Agency (EPA) test methods as they exist in the Code of Federal Regulations (CFR) (July 1, 2004), as listed below, are adopted by reference. These adoptions by reference include no future editions or amendments. Copies of test methods referenced in this section of this rule are available at the Maricopa County Environmental Services Department, 1001 North Central Avenue, Suite 201, Phoenix, Arizona, 85004 -1942.

503.1 EPA Reference Method 9 ("Visual Determination of the Opacity of Emissions from Stationary Sources"), (40 CFR 60, Appendix A).

503.2 EPA Reference Method 5 ("Determination of Particulate Emissions from Stationary Sources"), (40 CFR 60, Appendix A).

503.3 EPA Reference Method 202 (" Determination of Condensible Particulate Emissions from Stationary Sources"), (40 CFR 51, Appendix A).