

~~1 the annual renewal date of the new permit shall be
2 the anniversary date of the existing permit and the new
3 operating permit fee shall be pro-rated from the date
4 of issuance to that anniversary date.
5 E. In granting a permit, the Control Officer may require
6 compliance with specific conditions and terms which
7 he deems applicable. Failure to comply shall invalidate
8 the permit.
9 F. No permit is valid until the applicable permit fee has
10 been received and the permit issued by the department.~~

11 **RULE 22. Permit Denial - Action - Transfer - Posting - Revocation -**
12 **Compliance - Expiration**

13 A. The Control Officer shall deny an Installation Permit
14 or an Operating Permit if the applicant does not show
15 that every such machine, equipment, incinerator, device
16 or other article, the use of which may cause or
17 contribute to air pollution, or the use of which may
18 eliminate or reduce or control the emission of air
19 pollutants, is so designed, controlled, or equipped
20 with such air pollution control equipment, that it
21 may be expected to operate without emitting or without
22 causing to be emitted air contaminants in violation
23 of the provisions of these Rules and Regulations, or
24 those of the State Board of Health.

(Arizona Revised Statute 36-779.02)

~~1 E. Prior to acting on an application for an Operating
2 Permit, the Control Officer pursuant to Rule 42 of
3 these Regulations may require the applicant to provide
4 and maintain such facilities as are necessary for
5 sampling and testing purposes in order to secure
6 information that will disclose the nature, extent,
7 quantity or degree of air contaminants discharged into
8 the atmosphere from the machine, equipment, incinerator,
9 device or other article described in the Installation
10 Permit.~~

11 C. In acting upon an application for an Operating Permit,
12 if the Control Officer finds that such machine, equip-
13 ment, incinerator, device, or other article described
14 in these Rules and Regulations has been constructed
15 not in accordance with the Installation Permit, he
16 shall deny the application for such Operating Permit.
17 The Control Officer shall not accept any further
18 application for an Operating Permit for such machine,
19 equipment, incinerator, device or other article so
20 constructed until he finds that such machine, equipment,
21 incinerator, device or other article has been recon-
22 structed in accordance with the Installation Permit.

23 (Arizona Revised Statute 36-779.02)

24 D. Non-Transferable - An Installation Permit or an
25 Operating Permit shall not be transferable, whether by
26 operation of law or otherwise, either from one piece
27 of equipment to another, or from one person to another.

28 (Arizona Revised Statute 36-779.04)

~~1 E. Expiration - An Installation Permit shall expire two (2)
2 years from the date of its issuance if no action has been
3 initiated on such permit.~~

4 F. Posting of Permit - A person who has been granted an
5 Operating Permit, shall firmly affix such permit, an
6 approved facsimile of such permit or other approved
7 identification bearing the permit number upon such machine,
8 equipment, incinerator, device or other article for which
9 the Operating Permit is issued in such a manner as to be
10 clearly visible and accessible. In the event that such
11 machine, equipment, incinerator, device or other article
12 is so constructed or operated that such permit cannot be
13 so placed, the permit shall be mounted so as to be clearly
14 visible in an accessible place within a reasonable distance
15 of such machine, equipment, incinerator, device or other
16 article, or maintained readily available at all times on
17 the operating premises. (Arizona Revised Statute 36-779.06)

18 G. Permit Revocation
19 1. The Control Officer may revoke a permit if he determines,
20 by competent evidence, that the nature, extent, quantity,
21 or degree of air contaminants discharged into the
22 atmosphere from any equipment covered by the permit is
23 in violation of these Rules and Regulations, or the Rules
24 and Regulations of the State Department of Health.
25 2. The Control Officer shall notify the permittee of such
26 revocation in writing, giving the reasons therefor,
27 and the revocation shall become final ten (10) days
28 after notification. Notification may be made in person
29 or by Registered or Certified mail.

- 1 3. Revocation of a permit may be canceled by the Control
- 2 Officer anytime before the revocation becomes final
- 3 if the permittee has corrected the condition responsible
- 4 for the permit revocation,
- 5 4. Revocation of a permit shall be stayed by the permittee's
- 6 written petition for a hearing, filed in accordance
- 7 with Regulation VI, Rule 62 of these Regulations.
- 8 5. Upon revocation becoming final, an Operating Permit shall
- 9 be issued only on the basis of an application for a
- 10 new permit.

11 H. Compliance with other laws and regulations - The issuance
12 of any permit by the Control Officer shall not relieve any
13 person from compliance with these Rules and Regulations
14 or any other law or ordinance.

~~15 RULE 23. Permit Classes~~

~~16 WHEREAS Section 36-779.01 Arizona Revised Statutes states~~
~~17 that any person erecting, installing, replacing or making~~
~~18 a major alteration to any machine, equipment, incinerator,~~
~~19 device or other article which may cause or contribute to~~
~~20 air pollution or the use of which may eliminate or reduce~~
~~21 or control the emission of air pollutants, shall first~~
~~22 obtain an Installation Permit from the Control Officer and~~
~~23 that before any such machine, equipment, incinerator, device,~~
~~24 or other article may be operated or used, an Operating~~
~~25 Permit shall be obtained in writing from the Control Officer,~~
~~26 it is hereby established that the following classes of~~
~~27 machines, equipment, devices or other articles may cause or~~
~~28 contribute to air pollution or may be used to prevent or~~
~~29 control air contaminants and therefore require a permit from~~
~~30 the County Air Pollution Control Officer.~~

3.9.82

Rule 28. Permit Fees

A. Installation Permit Fees

The fee for an installation permit shall be half of the annual operating permit fee or ten dollars (~~\$10.00~~) \$12.00, whichever is greater.

B. Annual Operating Permit Fees

1. One annual operating fee shall be charged from the date of issuance of a permit to use or operate any machine, equipment, device or other article for which a permit is required by these rules and regulations. The total of all annual operating permit fees at one geographical location shall not exceed ~~\$1500.00~~ \$1875.00. ~~The permit fee shall be due and paid on or before each anniversary date.~~
2. Any processing facility normally operated less than six (6) consecutive months in any annual operating permit period shall be assessed one half the annual operating permit fee.
3. WHEN A PERMIT FEE IS RECEIVED ON OR AFTER THE DELINQUENT DATE INDICATED ON THE PERMIT APPLICATION, A \$15.00 DELINQUENT FEE WILL BE CHARGED.
4. All permits shall be issued subject to permit fees in the following schedules.

SCHEDULE FOR PERMIT FEES

SCHEDULE 1*

Fuel Burning Equipment Schedule
(Oil, coal, etc.)
Based on designed fuel consumption,
using gross input heating values
per permit unit

<u>BTU per hour</u>	<u>Annual Operating Permit Fee</u>
500,000 to 1,499,999	\$ 25-00 31.00
1,500,000 to 4,999,999	50-00 63.00
5,000,000 to 14,999,999	100-00 125.00
15,000,000 to 49,999,999	135-00 169.00
50,000,000 to 499,999,999	175-00 219.00
500,000,000 or greater	235-00 294.00

*Includes equipment items rated at less than 500,000 BTU each which in the aggregate with other such equipment of the applicant at the same location or property, other than a one or two family residence, total 500,000 BTU gross input or more.

SCHEDULE 2*

Fuel Burning Equipment
(Natural Gas or Liquid Petroleum Gas)
Based on design fuel consumption,
using gross input heating
values per permit unit

<u>BTU per hour</u>	<u>Annual Operating Permit Fee</u>
500,000 to 999,999	\$ 10-00 12.00
1,000,000 to 4,999,999	25-00 31.00
5,000,000 or greater	60-00 75.00

*Includes equipment items rated at less than 500,000 BTU each which in the aggregate with other such equipment of the applicant at the same location or property, other than a one or two-family residence, total 500,000 BTU gross input or more.

SCHEDULE 3

Refuse Burning Equipment
Based on the maximum horizontal inside cross sectional
area of the primary combustion chamber (in square feet)

<u>Area in Square Feet</u>	<u>Annual Operating Permit Fee</u>
4 or less	\$ 40-00 50.00
5 to 8	60-00 75.00
9 to 26	150-00 188.00
27 to 49	200-00 250.00
50 or greater	300-00 375.00

SCHEDULE 4

Tanks, Reservoirs or other containers
Based on capacities in gallons or cubic equivalent per unit

<u>Gallons</u>		<u>Annual Operating Permit Fee</u>
250	to 14,999	\$ 12-00 15.00
15,000	to 39,999	25-00 31.00
40,000	to 399,999	45-00 56.00
400,000	to 3,999,999	75-00 94.00
4,000,000	or greater	135-00 169.00
TANK TRUCK CERTIFICATION STICKER		15.00/TANK/YEAR

SCHEDULE 5

Motors-Engines
(Processing)

Based on total rated horsepower or the equivalent of all motors and engines including but not limited to gasoline, diesel, natural gas, liquid petroleum gas and electricity* included in a permit unit other than those used in mobile equipment.

<u>Horsepower</u>		<u>Annual Operating Permit Fee</u>
9 or less		\$ 15-00 19.00
10 to 24		25-00 31.00
25 to 49		50-00 63.00
50 to 99		85-00 106.00
100 to 199		125-00 156.00
200 to 299		175-00 219.00
300 to 499		225-00 282.00
500 +		300-00 375.00

* Only electric motors used to drive or power any machine, equipment or device or other article that may cause or contribute to air pollution or may be used to prevent or control air contaminants.

SCHEDULE 6

Electric Energy Equipment
(Except Electric Motors)
Based on Total Kilovolt Ampere (KVA)
Ratings per permit unit

3.8.82

<u>Kilovolt Amperes (KVA)</u>		<u>Annual Operating Permit Fee</u>	
45	or less	.....\$ 10.00	12.00
46	to 144	.....	25.00
145	to 449	.....	38.00
450	to 1,449	.....	50.00
1,450	to 2,499	.....	75.00
2,500	to 4,499	.....	125.00
4,500	to 14,499	.....	188.00
14,500	or greater	.....	250.00

SCHEDULE 7

<u>Category</u>	<u>Miscellaneous</u>	<u>Annual Operating Permit fee</u>	
Each.		\$ 25.00	31.00

SCHEDULE 8

Installation

	<u>Permit Fee</u>
Each.	Half of operating permit fee w/ \$10.00 minimum \$12.00

SCHEDULE 9

Controlled Open Burning

	<u>Permit Fee</u>
Temporary.	\$ 10.00 12.00
Annual	20.00 25.00

SCHEDULE 10

Earth Moving Equipment

<u>Total Acreage Being Developed</u>	<u>Permit Fee</u>
SWIMMING POOL EXCAVATING	\$10.00
Less than one (1) Acre	\$10.00 12.00
One (1) to less than five (5) acres	20.00 25.00
Five (5) acres or greater	20.00 plus \$2.00 per acre \$2.50 per acre PLUS \$25.00

RULE 32. Odors and Gaseous Emissions

5.30.12

5-30-72

G. Other Industries

J. No person shall discharge into the atmosphere from any other industry not covered in other rules of this section reduced sulfur, which includes sulfur equivalent from all sulfur emissions including but not limited to sulfur dioxide, sulfur trioxide and sulfuric acid, in excess of ten (10) percent of the sulfur entering the process as feed.

Added 10-1-75

H. Fuel Burning Equipment for Producing Electric Power (Sulfur Dioxide)

J. This rule applies to an installation operated for the purpose of producing electric power with a resulting discharge of sulfur dioxide in the installation's effluent gas.

- 2. Steam power generating installations which are new sources shall not emit more than 0.80 pounds of sulfur dioxide, maximum two hour average, per million BTU heat input when oil is fired. Steam power generating installations which are existing sources shall not emit more than 1.0 pounds of sulfur dioxide, maximum two hour average, per million BTU heat input when low sulfur oil is fired.**
- 3. Steam power generating installations which are existing**

6.23.80

- sources shall not emit more than 2.2 pounds of sulfur dioxide, maximum two hour average, per million BTU heat input when high sulfur oil is fired.
4. Any permit issued for the operation of an existing source, or any renewal or modification of such a permit, shall include a condition prohibiting the use of high sulfur oil by the permittee, except that if the applicant demonstrates to the satisfaction of the control officer: (a) that sufficient quantities of low sulfur oil are not available for use by the source, and (b) that it has adequate facilities and contingency plans to insure that the sulfur dioxide ambient air quality standards set forth in Regulation VII, Rule 70 will not be violated. The terms of the permit may authorize the use of high sulfur oil under such conditions as are justified. In cases where the permittee is authorized to use high sulfur oil, it shall submit to the bureau monthly reports detailing its efforts to obtain low sulfur oil. When the conditions justifying the use of high sulfur oil no longer exist, the permit shall be modified accordingly.
 5. For purposes of this rule, low sulfur oil means fuel oil containing less than 0.90 percent by weight of sulfur and high sulfur oil means fuel oil containing 0.90 percent or more by weight of sulfur.
 6. Steam power generating installations which are new sources shall not emit more than 0.80 pounds of sulfur dioxide, maximum two hour average, per million BTU heat input when coal is fired. Steam power generating installations which are existing sources shall not emit more than 1.0 pounds of sulfur dioxide. Maximum two hour average, per million BTU heat input when coal is fired.
- J. No person shall operate an asphalt kettle unless he controls air contaminant emissions by good modern practices including but not limited to: (1) maintenance of temperature below both the asphalt flash point and the maximum temperature recommended by the asphalt manufacturer through the use of automatic temperature controls, (2) operation of the Kettle with the lid closed except when charging, (3) pumping the asphalt from the kettle, (4) drawing the asphalt through cocks without dipping, (5) firing of the kettle with a clean burning fuel and (6) maintaining the kettle in clean, properly adjusted and good operating condition.
- K. The discharge of carbon monoxide emissions from any process source shall be effectively controlled by means of secondary combustion.

6.23.80

Rule 34. Organic Solvents- Volatile Organic Compounds (VOC)

- F. Except as provided in paragraph D, sub-section 2, no person shall discharge more than 15 pounds of organic materials into the atmosphere in any one (1) day from any machine, equipment, incinerator, device, or other article in which any organic solvent or any material containing organic solvent comes into contact with flame or is baked, heat-cured, or heat-polymerized, in the presence of oxygen.
- G. No person shall discharge more than 40 pounds of organic material into the atmosphere in any one (1) day from any machine, equipment, incinerator, device or other article used under conditions other than described in paragraph F of this rule for employing, applying, evaporating, or

drying any photochemically reactive solvent as defined in paragraph J of this rule.

H. Emission of organic materials into the atmosphere required to be controlled by paragraphs F and G of this rule shall be reduced by:

1. Incineration, provided that ninety percent (90%) or more of the carbon in the organic material being incinerated is oxidized to carbon dioxide, or
2. Adsorption, or
3. Processing in a manner not less effective than in Subsection H.1. or H.2. above.

I. The provisions of this rule shall not apply to:

1. The manufacturer of organic solvents, or the transport or storage of organic solvents or materials containing organic solvents.
2. The use of equipment for which other requirements are specified by Rule 33.
3. The spraying or other employment of insecticides, pesticides or herbicides.

J. For the purposes of this rule, a photochemically reactive solvent is a solvent with an aggregate of more than twenty percent (20%) of its total volume composed of the chemical compounds classified below or which exceeds any of the following individual percentage composition limitations, referred to the total volume of solvent:

1. A combination of hydrocarbons, alcohols, aldehydes, esters, ethers, or ketones having an olefinic or cyclo-olefinic type of unsaturation: five percent (5%);

2. A combination of aromatic compounds with eight (8) or more carbon atoms to the molecule except ethylbenzene: eight percent (8%);
3. A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene: twenty percent (20%).

Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the above groups of organic compounds, it shall be considered as a member of the most reactive chemical group, that is, that group having the least allowable percent of the total volume of solvents.

- k. No person shall, during any one (1) day, dispose of a total of more than one and one-half gallons of any photochemically reactive solvent as defined in paragraph h J of this rule or of any material containing more than one and one-half gallons of any such photochemically reactive solvent by any means which will permit the evaporation of each solvent into the atmosphere.

5/30/72

RULE 35. Incinerators

- A. No person shall burn any combustible material in any incinerator within Maricopa County except in a multiple-chamber incinerator, equipped with auxiliary fuel, or in equipment equally effective. No burning shall be conducted between sunset and the following sunrise.
- B. For the purposes of these Rules and Regulations, a "multiple-chamber incinerator" is any article, machine, equipment, contrivance, structure or part of a structure, used to dispose of combustible refuse by burning, consisting of three or more refractory lined combustion chambers in series, physically separated by refractory walls, interconnected by gas passage ports or ducts designed for maximum combustion of the material to be burned.
- C. No incinerator shall be constructed, remodeled, installed or used until the following information, and such additional information and data as the Control Officer may require, have been filed with and approved by the Control Officer, and then only in compliance with the requirements of these Rules and Regulations.
 1. Plans and specifications showing capacity, amount and type of waste to be incinerated, proposed fuel, fire chamber details, stack detail and location with reference to adjacent premises, auxiliary fuel controls;
 2. Loading and unloading procedures and equipment;
 3. Methods and equipment for preventing the discharge of contaminants into the ambient air;
 4. Receptacles for storage and means for disposal of residue.

5/30/72

- D. No person shall burn combustible wastes in any incinerator until it has passed a performance test based on the emission standards of Regulation F and G of this Rule, nor at any time in excess of these standards.
- E. Approval of the use of an incinerator by the Control Officer is not intended to exempt the incinerator, its location or operation from the requirements of any public agency exercising proper jurisdiction.
- F. No person shall emit into the outdoor atmosphere from any incinerator particulate matter to exceed 0.1 grains per cubic foot of flue gas at standard conditions adjusted to 12 per cent carbon dioxide in the exhaust gases and calculated as if no auxiliary fuel had been used.
- G. Notwithstanding the provisions of Regulation III, Rule 30, no person shall emit into the atmosphere from any incinerator for an aggregate of more than thirty (30) seconds in any sixty (60) minutes, smoke the appearance, density, opacity or shade of which is as dark as No. 1 on the Ringelmann Scale.

1-18-79

RULE 41. Monitoring

- A. The owner, lessee or operator of a potential air contaminant source shall provide, install, maintain and operate such air contaminant monitoring devices as are reasonable and required to determine compliance in a manner acceptable to the Control Officer, and shall supply monitoring information as directed in writing by the Control Officer. Such devices shall be available for inspection by the Control Officer during all reasonable times. (Arizona Revised Statute 36-780)

B. Continuously Monitoring and Recording Emissions (added)

1.0 For the purpose of this rule, the following definitions shall apply:

- mm. "Emission Standard" means a regulation (or portion thereof) setting forth an allowable rate of emissions, level of opacity, or prescribing equipment or fuel specifications that result in control of air pollution emissions.
- nn. "Capacity Factor" means the ratio of the average load on a machine or equipment for the period of time considered to the capacity rating of the machine or equipment.
- oo. "Excess Emissions" means emissions of an air pollutant in excess of an emission standard.
- pp. "Nitric Acid Plant" means any facility producing nitric acid 30 to 70 percent in strength by either the pressure or atmospheric pressure process.
- qq. "Sulfuric Acid Plant" means any facility producing sulfuric acid by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, or acid sludge, but does not include facilities where conversion to sulfuric acid is utilized primarily as a means of preventing emissions to the atmosphere of sulfur dioxide or other sulfur compounds.

rr. "Fossil fuel-fired steam generator" means a furnace or boiler used in the process of burning fossil fuel for the primary purpose of producing steam by heat transfer.

1.1 Every owner or operator of an emission source in a category listed in sub-paragraphs below shall:

- (1) Install, calibrate, operate, and maintain all monitoring equipment necessary for continuously monitoring the pollutants specified in this rule for the applicable source category; and
- (2) Complete the installation and performance tests of such equipment and begin monitoring and recording within eighteen (18) months of PLAN approval or promulgation.

The source categories and the respective monitoring requirements are listed below:

1.1.1 Fossil-fuel-fired steam generators, as specified in sub-paragraph 2.1 shall be monitored for opacity, nitrogen oxides emissions, sulfur dioxide emissions and oxygen or carbon dioxide.

1.1.2 Fluid Bed catalytic cracking unit catalyst regenerators, as specified in sub-paragraph 2.4 shall be monitored for opacity.

1.1.3 Sulfuric acid plants, as specified in sub-paragraph 2.3 shall be monitored for sulfur dioxide emissions.

1.1.4 Nitric acid plants, as specified in sub-paragraph 2.2 shall be monitored for nitrogen oxides emissions.

1.2 Exemptions

The provisions of this rule shall not apply to any source which is:

- 1.2.1 Subject to a new source performance standard promulgated in 40 CFR 60.
- 1.2.2 Not subject to an applicable emission standard of the approved SIP; or
- 1.2.3 Scheduled for retirement within five (5) years after inclusion of monitoring requirements for the source in these rules and regulations, provided that adequate evidence and guarantees are provided that clearly show that the source will cease operations prior to such date.

1.3 Extensions

THE CONTROL OFFICER MAY ALLOW a reasonable extension of time for INSTALLATION of monitors for facilities unable to meet the prescribed timeframe, provided the owner or operator of such facility demonstrates that good faith efforts have been made to obtain and install such devices within such prescribed timeframes.

1.4 Monitoring System Malfunction

THE CONTROL OFFICER MAY GRANT temporary exemption from the monitoring and reporting requirements of this rule during any period of monitoring system malfunction, provided that the source owner or operator shows to the satisfaction of the Control Officer that the malfunction was unavoidable and is being repaired as expeditiously as practicable.

2.0 MINIMUM MONITORING REQUIREMENT - SOURCES LISTED IN
SUB-PARAGRAPH 1.1 OF THIS RULE SHALL MEET THE FOLLOWING
BASIC REQUIREMENTS:

2.1 FOSSIL FUEL-FIRED STEAM GENERATORS

EACH FOSSIL FUEL-FIRED STEAM GENERATOR, EXCEPT AS PROVIDED
IN THE FOLLOWING SUB-PARAGRAPHS, WITH AN ANNUAL AVERAGE
CAPACITY FACTOR OF GREATER THAN 30 PERCENT, AS REPORTED
TO THE FEDERAL POWER COMMISSION FOR CALENDAR YEAR 1974,
OR AS OTHERWISE DEMONSTRATED TO THE BUREAU BY THE OWNER
OR OPERATOR, SHALL CONFORM WITH THE FOLLOWING MONITORING
REQUIREMENTS WHEN SUCH FACILITY IS SUBJECT TO AN EMISSION
STANDARD OF AN APPLICABLE PLAN FOR THE POLLUTANT IN
QUESTION.

2.1.1 A CONTINUOUS MONITORING SYSTEM FOR THE MEASUREMENT OF
OPACITY WHICH MEETS THE PERFORMANCE SPECIFICATIONS OF
SUB PARAGRAPH 3.1.1 OF THIS RULE SHALL BE INSTALLED,
CALIBRATED, MAINTAINED, AND OPERATED IN ACCORDANCE WITH
THE PROCEDURES OF THIS RULE BY THE OWNER OR OPERATOR
OF ANY SUCH STEAM GENERATOR OF GREATER THAN 250 MILLION BTU
PER HOUR HEAT INPUT EXCEPT WHERE:

2.1.1.1 GASEOUS FUEL IS THE ONLY FUEL BURNED, OR

2.1.1.2 OIL OR A MIXTURE OF GAS AND OIL ARE THE ONLY FUELS
BURNED AND THE SOURCE IS ABLE TO COMPLY WITH THE APPLICABLE
PARTICULATE MATTER AND OPACITY REGULATIONS WITHOUT
UTILIZATION OF PARTICULATE MATTER COLLECTION EQUIPMENT,
AND WHERE THE SOURCE HAS NEVER BEEN FOUND, THROUGH ANY
ADMINISTRATIVE OR JUDICIAL PROCEEDINGS TO BE IN VIOLATION
OF ANY VISIBLE EMISSION STANDARD OF THE APPLICABLE PLAN.

2.1.2 A CONTINUOUS MONITORING SYSTEM FOR THE MEASUREMENT OF SULFUR DIOXIDE WHICH MEETS THE PERFORMANCE SPECIFICATIONS OF SUB-PARAGRAPH 3.1.3 OF THIS RULE SHALL BE INSTALLED, CALIBRATED, MAINTAINED, AND OPERATED ON ANY FOSSIL-FUEL FIRED STEAM GENERATOR OF GREATER THAN 250 MILLION BTU PER HOUR HEAT INPUT WHICH HAS INSTALLED SULFUR DIOXIDE POLLUTANT CONTROL EQUIPMENT.

2.1.3 A CONTINUOUS MONITORING SYSTEM FOR THE MEASUREMENT OF NITROGEN OXIDES WHICH MEETS THE PERFORMANCE SPECIFICATION OF SUB-PARAGRAPH 3.1.2 OF THIS RULE SHALL BE INSTALLED, CALIBRATED, MAINTAINED, AND OPERATED ON FOSSIL FUEL-FIRED STEAM GENERATORS OF GREATER THAN 1000 MILLION BTU PER HOUR HEAT INPUT WHEN SUCH FACILITY IS LOCATED IN AN AIR QUALITY CONTROL REGION WHERE THE ~~CONTROL OFFICER HAS SPECIFICALLY~~ ADMINISTRATOR OF THE U.S. EPA HAS SPECIFICALLY DETERMINED THAT A CONTROL STRATEGY FOR NITROGEN DIOXIDE IS NECESSARY TO ATTAIN THE NATIONAL STANDARDS, UNLESS THE SOURCE OWNER OR OPERATOR DEMONSTRATES DURING SOURCE COMPLIANCE TESTS AS REQUIRED BY THE BUREAU THAT SUCH A SOURCE EMITS NITROGEN OXIDES AT LEVELS 30 PERCENT OR MORE BELOW THE EMISSION STANDARD WITHIN THE APPLICABLE PLAN.

2.1.4 A CONTINUOUS MONITORING SYSTEM FOR THE MEASUREMENT OF THE PERCENT OXYGEN OR CARBON DIOXIDE WHICH MEETS THE PERFORMANCE SPECIFICATIONS OF SUB-PARAGRAPHS 3.1.4 OR 3.1.5 OF THIS RULE SHALL BE INSTALLED, CALIBRATED, OPERATED, AND MAINTAINED ON FOSSIL FUEL-FIRED STEAM GENERATORS WHERE MEASUREMENTS OF OXYGEN OR CARBON DIOXIDE IN THE FLUE GAS ARE REQUIRED TO CONVERT EITHER SULFUR

2.1.4 DIOXIDE OR NITROGEN OXIDES CONTINUOUS EMISSION MONITORING DATA, OR BOTH, TO UNITS OF THE EMISSION STANDARD WITHIN THE APPLICABLE PLAN.

2.2 NITRIC ACID PLANTS

EACH NITRIC ACID PLANT OF GREATER THAN 300 TONS PER DAY PRODUCTION CAPACITY, THE PRODUCTION CAPACITY BEING EXPRESSED AS 100 PERCENT ACID LOCATED IN AN AIR QUALITY CONTROL REGION ADMINISTRATOR OF THE U.S. EPA WHERE THE CONTROL-OFFICER HAS SPECIFICALLY DETERMINED THAT A CONTROL STRATEGY FOR NITROGEN DIOXIDE IS NECESSARY TO ATTAIN THE NATIONAL STANDARD SHALL INSTALL, CALIBRATE, MAINTAIN, AND OPERATE A CONTINUOUS MONITORING SYSTEM FOR THE MEASUREMENT OF NITROGEN OXIDES WHICH MEETS THE PERFORMANCE SPECIFICATIONS OF SUB-PARAGRAPH 3.1.2 OF THIS RULE FOR EACH NITRIC ACID PRODUCING FACILITY WITHIN SUCH PLANT.

2.3 SULFURIC ACID PLANTS

EACH SULFURIC ACID PLANT OF GREATER THAN 300 TONS PER DAY PRODUCTION CAPACITY, THE PRODUCTION BEING EXPRESSED AS 100 PERCENT ACID, SHALL INSTALL, CALIBRATE, MAINTAIN AND OPERATE A CONTINUOUS MONITORING SYSTEM FOR THE MEASUREMENT OF SULFUR DIOXIDE WHICH MEETS THE PERFORMANCE SPECIFICATIONS OF 3.1.3 OF THIS RULE FOR EACH SULFURIC ACID PRODUCING FACILITY WITHIN SUCH PLANT.

2.4 FLUID BED CATALYTIC CRACKING UNIT CATALYST REGENERATORS AT PETROLEUM REFINERIES.

EACH CATALYST REGENERATOR FOR FLUID BED CATALYTIC CRACKING UNITS OF GREATER THAN 20,000 BARRELS PER DAY FRESH FEED CAPACITY

Shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of opacity which meets the performance specifications of 3.1.1 of this rule.

3.0 Minimum Specifications

Owners or operators of monitoring equipment installed TO COMPLY WITH THIS RULE, EXCEPT AS PROVIDED IN SUBPARAGRAPH 3.2, SHALL DEMONSTRATE COMPLIANCE WITH THE FOLLOWING PERFORMANCE SPECIFICATIONS.

3.1 Performance Specifications

THE PERFORMANCE SPECIFICATIONS SET FORTH in Appendix B of Part 60 of Chapter 1, Title 40 OF THE CODE OF FEDERAL REGULATIONS ARE incorporated herein by reference, and SHALL BE USED TO DETERMINE ACCEPTABILITY OF MONITORING EQUIPMENT INSTALLED PURSUANT TO THIS RULE EXCEPT THAT (1) WHERE REFERENCE IS MADE TO THE "ADMINISTRATOR" IN APPENDIX B OF 40 CFR 60, THE TERM "CONTROL OFFICER OF THE MARICOPA COUNTY BUREAU OF AIR POLLUTION CONTROL" SHOULD BE INSERTED FOR THE PURPOSE OF THIS RULE, AND (2) WHERE REFERENCE IS MADE TO THE "REFERENCE METHOD" IN APPENDIX B OF 40 CFR 60, THE CONTROL OFFICER MAY ALLOW THE USE OF EITHER THE STATE OR COUNTY APPROVED REFERENCE METHOD OR THE FEDERALLY APPROVED REFERENCE METHOD PUBLISHED IN 40 CFR 60. THE PERFORMANCE SPECIFICATIONS TO BE USED WITH EACH TYPE OF MONITORING SYSTEM ARE LISTED BELOW.

3.1.1 Continuous monitoring systems for measuring opacity shall comply with Performance Specification 1.

3.1.2 Continuous monitoring systems for measuring nitrogen oxides shall comply with Performance Specification 2.

3.1.3 Continuous monitoring systems for measuring sulfur dioxide shall comply with Performance Specification 2.

3.1.4 Continuous monitoring systems for measuring oxygen shall comply with Performance Specification 3.

3.1.5 Continuous monitoring systems for measuring carbon dioxide shall comply with Performance Specification 3.

3.2 Exemptions

THE CONTROL OFFICER MAY EXEMPT any source which has purchased an emission monitoring system(s) prior to September 11, 1974, from meeting such test procedures prescribed in subparagraph 3.1 of this rule for a period not to exceed five (5) years from plan approval or promulgation.

3.3 Calibration Gases

FOR NITROGEN OXIDES MONITORING SYSTEMS INSTALLED ON FOSSIL FUEL-FIRED STEAM GENERATORS, THE POLLUTANT GAS USED TO PREPARE CALIBRATION GAS MIXTURES (SECTION 2.1, PERFORMANCE SPECIFICATION 2, APPENDIX B, PART 60, CHAPTER 1, TITLE 40, CFR) SHALL BE NITRIC OXIDE (NO). FOR NITROGEN OXIDES MONITORING SYSTEMS, INSTALLED ON NITRIC ACID PLANTS, THE POLLUTANT GAS USED TO PREPARE CALIBRATION GAS MIXTURES (SECTION 2.1, PERFORMANCE SPECIFICATION 2, APPENDIX B, PART 60, CHAPTER 1, TITLE 40, CFR) SHALL BE NITROGEN DIOXIDE (NO₂). THESE GASES SHALL ALSO BE USED FOR DAILY CHECKS UNDER PARAGRAPH 3.7 OF THIS RULE AS APPLICABLE. FOR SULFUR DIOXIDE MONITORING SYSTEMS INSTALLED ON FOSSIL FUEL-FIRED STEAM GENERATORS OR SULFURIC ACID PLANTS, THE POLLUTANT GAS USED TO PREPARE CALIBRATION GAS MIXTURES (SECTION 2.1, PERFORMANCE SPECIFICATION 2, APPENDIX B, PART 60, CHAPTER 1, TITLE 40, CFR) SHALL BE SULFUR DIOXIDE (SO₂).

3.3 (continued)

SPAN AND ZERO GASES SHOULD BE TRACEABLE TO NATIONAL BUREAU OF STANDARDS REFERENCE GASES WHENEVER THESE REFERENCE GASES ARE AVAILABLE. EVERY SIX MONTHS FROM DATE OF MANUFACTURE, SPAN AND ZERO GASES SHALL BE REANALYZED BY CONDUCTING TRIPLICATE ANALYSES USING THE REFERENCE METHODS IN APPENDIX A, PART 60, CHAPTER 1, TITLE 40 CFR AS FOLLOWS: FOR SULFUR DIOXIDE, USE REFERENCE METHOD 6; FOR NITROGEN OXIDES, USE REFERENCE METHOD 7; AND FOR CARBON DIOXIDE OR OXYGEN, USE REFERENCE METHOD 3. THE GASES MAY BE ANALYZED AT LESS FREQUENT INTERVALS IF LONGER SHELF LIVES ARE GUARANTEED BY THE MANUFACTURER.

3.4

CYCLING TIMES

CYCLING TIMES INCLUDE THE TOTAL TIME A MONITORING SYSTEM REQUIRES TO SAMPLE, ANALYZE AND RECORD AN EMISSION MEASUREMENT.

3.4.1

CONTINUOUS MONITORING SYSTEMS FOR MEASURING OPACITY SHALL COMPLETE A MINIMUM OF ONE CYCLE OF OPERATION (SAMPLING, ANALYZING, AND DATA RECORDING) FOR EACH SUCCESSIVE 10-SECOND PERIOD.

3.4.2

CONTINUOUS MONITORING SYSTEMS FOR MEASURING OXIDES OF NITROGEN, CARBON DIOXIDE, OXYGEN, OR SULFUR DIOXIDE SHALL COMPLETE A MINIMUM OF ONE CYCLE OF OPERATION (SAMPLING, ANALYZING, AND DATA RECORDING) FOR EACH SUCCESSIVE 15-MINUTE PERIOD.

3.5

MONITOR LOCATION

ALL CONTINUOUS MONITORING SYSTEMS OR MONITORING DEVICES SHALL BE INSTALLED SO THAT REPRESENTATIVE MEASUREMENTS OF EMISSIONS OR PROCESS PARAMETERS (I.E., OXYGEN, OR CARBON DIOXIDE) FROM THE AFFECTED FACILITY ARE OBTAINED.

3.5 (continued)

ADDITIONAL GUIDANCE FOR LOCATION OF CONTINUOUS MONITORING SYSTEMS TO OBTAIN REPRESENTATIVE SAMPLES ARE CONTAINED IN THE APPLICABLE PERFORMANCE SPECIFICATIONS OF APPENDIX B OF PART 60, CHAPTER 1, TITLE 40, CFR.

3.6

COMBINED EFFLUENTS

WHEN THE EFFLUENTS FROM TWO OR MORE AFFECTED FACILITIES OF SIMILAR DESIGN AND OPERATING CHARACTERISTICS ARE COMBINED BEFORE BEING RELEASED TO THE ATMOSPHERE, MONITORING SYSTEMS MAY BE INSTALLED ON THE COMBINED EFFLUENT. WHEN THE AFFECTED FACILITIES ARE NOT OF SIMILAR DESIGN AND OPERATING CHARACTERISTICS, OR WHEN THE EFFLUENT FROM ONE AFFECTED FACILITY IS RELEASED TO THE ATMOSPHERE THROUGH MORE THAN ONE POINT, PROCEDURES TO IMPLEMENT THE INTENT OF THESE REQUIREMENTS SHALL BE SUBMITTED TO THE CONTROL OFFICER FOR HIS APPROVAL, WHICH SHALL INCLUDE BUT NOT BE LIMITED TO THE INSTALLATION OF SEPARATE MONITORS.

3.7

ZERO AND DRIFT

OWNERS OR OPERATORS OF ALL CONTINUOUS MONITORING SYSTEMS INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THIS RULE SHALL RECORD THE ZERO AND SPAN DRIFT IN ACCORDANCE WITH THE METHOD PRESCRIBED BY THE MANUFACTURER OF SUCH INSTRUMENTS; TO SUBJECT THE INSTRUMENTS TO THE MANUFACTURER'S RECOMMENDED ZERO AND SPAN CHECK AT LEAST ONCE DAILY UNLESS THE MANUFACTURER HAS RECOMMENDED ADJUSTMENTS AT SHORTER INTERVALS, IN WHICH CASE SUCH RECOMMENDATIONS SHALL BE FOLLOWED; TO ADJUST THE ZERO AND SPAN WHENEVER THE 24-HOUR ZERO DRIFT OR 24-HOUR CALIBRATION DRIFT LIMITS OF THE APPLICABLE PERFORMANCE SPECIFICATIONS IN APPENDIX B OF PART 60, CHAPTER 1, TITLE 40, CFR ARE EXCEEDED; AND TO ADJUST CONTINUOUS MONITORING SYSTEMS REFERENCED BY

3.7 (cont'd)

PARAGRAPH 3.2 OF THIS RULE WHENEVER THE 24-HOUR ZERO DRIFT OR 24-HOUR CALIBRATION DRIFT EXCEED 10 PERCENT OF THE EMISSION STANDARD.

3.8

SPAN

INSTRUMENT SPAN SHOULD BE APPROXIMATELY 200 PERCENT OF THE EXPECTED INSTRUMENT DATA DISPLAY OUTPUT CORRESPONDING TO THE EMISSION STANDARD FOR THE SOURCE.

4.0

Minimum Data Requirements

The following paragraphs set forth the minimum data reporting requirements as necessary with this rule.

4.1

The owners or operators of facilities required to install continuous monitoring systems shall submit a written report of excess emissions for each calendar quarter and the nature and cause of the excess emissions, if known. The averaging period used for data reporting must correspond to the averaging period specified in the emission test method used to determine compliance with an emission standard for the pollutant source category in question. The required report shall, include as a minimum, the data stipulated in this rule.

4.2

For opacity measurements, the summary shall consist

of the magnitude in actual percent opacity of all

one minute averages of opacity greater than ANY

APPLICABLE opacity STANDARDS in these regulations

for each hour of operation of the facility.

Average values may be obtained by integration over

the averaging period, or by arithmetically averaging

a minimum of four equally spaced, instantaneous opacity

measurements per minute. ANY TIME PERIOD EXEMPTED

SHALL BE CONSIDERED BEFORE DETERMINING THE EXCESS AVERAGES

OF OPACITY.

- 4.3 FOR GASEOUS MEASUREMENTS THE SUMMARY SHALL CONSIST OF EMISSION AVERAGES IN THE UNITS OF THE APPLICABLE STANDARD FOR EACH AVERAGING PERIOD DURING WHICH THE APPLICABLE STANDARD WAS EXCEEDED.
- 4.4 THE DATE AND TIME IDENTIFYING EACH PERIOD DURING WHICH THE CONTINUOUS MONITORING SYSTEM WAS INOPERATIVE, EXCEPT FOR ZERO AND SPAN CHECKS AND THE NATURE OF SYSTEM REPAIR OR ADJUSTMENT SHALL BE REPORTED. THE CONTROL OFFICER MAY REQUIRE PROOF OF CONTINUOUS MONITORING SYSTEM PERFORMANCE WHENEVER SYSTEM REPAIRS OR ADJUSTMENTS HAVE BEEN MADE.
- 4.5 WHEN NO EXCESS EMISSIONS HAVE OCCURRED AND THE CONTINUOUS MONITORING SYSTEM(S) HAVE NOT BEEN INOPERATIVE, REPAIRED, OR ADJUSTED, SUCH INFORMATION SHALL BE INCLUDED IN THE REPORT.
- 4.6 OWNERS OR OPERATORS OF AFFECTED FACILITIES SHALL MAINTAIN A FILE OF ALL INFORMATION REPORTED IN THE QUARTERLY SUMMARIES, AND ALL OTHER DATA COLLECTED EITHER BY THE CONTINUOUS MONITORING SYSTEM OR AS NECESSARY TO CONVERT MONITORING DATA TO THE UNITS OF THE APPLICABLE STANDARD FOR A MINIMUM OF TWO YEARS FROM THE DATE OF COLLECTION OF SUCH DATA OR SUBMISSION OF SUCH SUMMARIES.
- 5.0 DATA REDUCTION
- OWNERS OR OPERATORS OF AFFECTED FACILITIES SHALL USE THE FOLLOWING PROCEDURES FOR CONVERTING MONITORING DATA TO UNITS OF THE STANDARD WHERE NECESSARY.
- 5.1 FOR FOSSIL FUEL-FIRED STEAM GENERATORS THE FOLLOWING PROCEDURES SHALL BE USED TO CONVERT GASEOUS EMISSION MONITORING DATA IN PARTS PER MILLION TO g/MILLION CAL (LB/MILLION BTU) WHERE NECESSARY.
- 5.1.1 WHEN THE OWNER OR OPERATOR OF A FOSSIL FUEL-FIRED STEAM GENERATOR ELECTS UNDER SUB-PARAGRAPH 2.1.4 OF THIS RULE TO MEASURE OXYGEN IN THE FLUE GASES, THE MEASUREMENTS OF THE POLLUTANT CONCENTRATION

5.1.1

AND OXYGEN CONCENTRATION SHALL EACH BE ON A DRY BASIS AND THE FOLLOWING CONVERSION PROCEDURE USED:

$$E = CF \left(\frac{20.9}{20.9 - \%O_2} \right)$$

5.1.2

WHEN THE OWNER OR OPERATOR ELECTS UNDER SUB-PARAGRAPH 2.1.4 OF THIS RULE TO MEASURE CARBON DIOXIDE IN THE FLUE GASES, THE MEASUREMENT OF THE POLLUTANT CONCENTRATION AND THE CARBON DIOXIDE CONCENTRATION SHALL EACH BE ON A CONSISTENT BASIS (WET OR DRY) AND THE FOLLOWING CONVERSION PROCEDURE USED:

$$E = CF_c \left(\frac{100}{\%CO_2} \right)$$

5.1.3

THE VALUES USED IN THE EQUATIONS UNDER PARAGRAPH 5.1 ARE DERIVED AS FOLLOWS:

E = POLLUTANT EMISSION, g/MILLION, CAL (LB/MILLION BTU);

C = POLLUTANT CONCENTRATION, g/DSCM (LB/DSCF), DETERMINED BY MULTIPLYING THE AVERAGE CONCENTRATION (PPM) FOR EACH HOURLY PERIOD BY 4.16×10^{-5} M g/DSCM PER PPM (2.64×10^{-9} M LB/DSCF PER PPM) WHERE M = POLLUTANT MOLECULAR WEIGHT, g/g -MOLE (LB/LB-MOLE), M = 64 FOR SULFUR DIOXIDE AND 46 FOR OXIDES OF NITROGEN;

$\%O_2, \%CO_2$ = OXYGEN OR CARBON DIOXIDE VOLUME (EXPRESSED AS PERCENT) DETERMINED WITH EQUIPMENT SPECIFIED UNDER PARAGRAPH 4.1.4 OF THIS RULE; SUBPARAGRAPHS 3.1.4 and 3.1.5;

F, F_c = A FACTOR REPRESENTING A RATIO OF THE VOLUME OF DRY FLUE GASES GENERATED TO THE CALORIFIC VALUE OF THE FUEL COMBUSTED (F), AND A FACTOR REPRESENTING A

- 5.1.3 (contd) RATIO OF THE VOLUME OF CARBON DIOXIDE GENERATED TO THE CALORIFIC VALUE OF THE FUEL COMBUSTED (F_c) RESPECTIVELY. VALUES OF F AND F_c ARE GIVEN IN § 60.45 (f) ~~OF PART 60~~, OF 40 CFR 6 AS APPLICABLE.
- 5.2 FOR SULFURIC ACID PLANTS THE OWNER OR OPERATOR SHALL:
- 5.2.1 ESTABLISH A CONVERSION FACTOR THREE TIMES DAILY ACCORDING TO THE PROCEDURES OF § 60.84 (b) OF CHAPTER 1, TITLE 40, CODE OF FEDERAL REGULATIONS:
- 5.2.2 MULTIPLY THE CONVERSION FACTOR BY THE AVERAGE SULFUR DIOXIDE CONCENTRATION IN THE FLUE GASES TO OBTAIN AVERAGE SULFUR DIOXIDE EMISSION IN KG/METRIC TON (LB/SHORT TON); AND
- 5.2.3 REPORT THE AVERAGE SULFUR DIOXIDE EMISSION FOR EACH AVERAGING PERIOD IN EXCESS OF THE APPLICABLE EMISSION STANDARD IN THE QUARTERLY SUMMARY.
- 5.3 FOR NITRIC ACID PLANTS THE OWNER OR OPERATOR SHALL:
- 5.3.1 ESTABLISH A CONVERSION FACTOR ACCORDING TO THE PROCEDURES OF § 60.73 (b) OF CHAPTER 1, TITLE 40, CODE OF FEDERAL REGULATIONS;
- 5.3.2 MULTIPLY THE CONVERSION FACTOR BY THE AVERAGE NITROGEN OXIDES CONCENTRATION IN THE FLUE GASES TO OBTAIN THE NITROGEN OXIDES EMISSIONS IN THE UNITS OF THE APPLICABLE STANDARD;
- 5.3.3 REPORT THE AVERAGE NITROGEN OXIDES EMISSION FOR EACH AVERAGING PERIOD IN EXCESS OF APPLICABLE EMISSION STANDARD IN THE QUARTERLY SUMMARY.
- 5.4 THE CONTROL OFFICER MAY ALLOW DATA REPORTING OR REDUCTION PROCEDURES VARYING FROM THOSE SET FORTH IN THIS RULE IF THE OWNER OR OPERATOR OF A SOURCE SHOWS TO THE SATISFACTION OF THE CONTROL OFFICER THAT HIS PROCEDURES ARE AT LEAST AS

5.4 (continued)

ACCURATE AS THOSE IN THIS RULE. SUCH PROCEDURES MAY INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:

- 5.4.1 ALTERNATIVE PROCEDURES FOR COMPUTING EMISSION AVERAGES THAT DO NOT REQUIRE INTEGRATION OF DATA (E.G., SOME FACILITIES MAY DEMONSTRATE THAT THE VARIABILITY OF THEIR EMISSIONS IS SUFFICIENTLY SMALL TO ALLOW ACCURATE REDUCTION OF DATA BASED UPON COMPUTING AVERAGES FROM EQUALLY SPACED DATA POINTS OVER THE AVERAGING PERIOD).
- 5.4.2 ALTERNATIVE METHODS OF CONVERTING POLLUTANT CONCENTRATION MEASUREMENTS TO THE UNITS OF THE EMISSION STANDARDS.

5-30-72

RULE 42. Testing and Sampling

- A. It shall be the responsibility of the owner or operator of an air contaminant emissions source to, and he shall, provide at his expense necessary and conveniently located utilities, reasonable and necessary test openings in the system or stack or stack extension if necessary for uniformity of gas flow, and safe access thereto to permit technically valid samples and measurements of the emissions to be taken at reasonable times and under reasonable conditions.
- B. In the event the existing facilities for sampling or testing and the access thereto are inadequate to permit the taking of technically valid samples and measurements, the Control Officer shall notify the source owner or operator, in writing, of the required size, number, and location of sampling holes; required size and location of the sampling platform; required access to the sampling platform; and the required utilities for operating the sampling and testing equipment and the required schedule for providing these facilities. The source owner or operator shall furnish such facilities as required in accordance with the schedule outlined by the Control Officer.

Rule 74 PUBLIC NOTIFICATION

- ~~A. Any violations of the National Ambient Air Quality Standards (NAAQS) which have occurred during the previous calendar year shall be communicated to the public in an annual report. This report shall be issued each year no later than August 1 and shall include:

 - 1. The date, time and duration of any pollutant level exceeded. The levels shall be expressed through the use of the Pollution Standard Index (PSI).
 - 2. An explanation to the public of any health hazards associated with each pollutant level exceeded. This shall be in the form of a narrative supported with statistical documentation.
 - 3. Suggestions to the public on ways that the violation might be avoided in the future and what steps can be taken to alleviate the severity of the violations while they are occurring.
 - 4. A description of ways in which the public can participate in the regulatory process including:
 - a. A summary of proposed regulatory changes for the coming year.
 - b. A tentative schedule of public meetings which will be held to consider changes and new regulations.~~
- ~~B. The annual report will be made available to the public at the offices of Maricopa County Bureau of Air Pollution Control. As resources allow, copies will be made available.~~
- C. The public shall be informed on a daily basis of average daily concentrations of three pollutants (TSP, CO and O₃). This information shall be disseminated through the use of newspapers, radio and television. The levels of each pollutant shall be expressed through the use of the Pollution Standard Index (PSI) and a written copy of such information shall be made available in a place of public access at the bureau offices.
- ~~D. The yearly report shall include a trend analysis of air quality in the Phoenix area. This analysis will outline what has taken place in the previous year and projections for future years with cause/effect analysis.~~

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION I – GENERAL PROVISIONS

RULE 100 (GENERAL PROVISIONS AND DEFINITIONS)

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Revised 07/13/1988; Revised 10/01/1990; Revised 06/22/1992; Revised 11/16/1992; Repealed and Adopted 11/15/1993; Revised 02/15/1995; Revised 04/03/1996; Revised 06/19/1996; Revised 03/04/1998; Revised 05/20/1998; Revised 07/26/2000; Revised 03/07/2001; Revised 08/22/2001; Revised 11/06/2002; Revised 03/15/2006; Revised 06/06/2007; Revised 09/25/2013; Revised 02/03/2016; Revised 12/11/2019; **Revised 08/09/2023**

Maricopa County Air Pollution Control Regulations Regulation I – General Provisions

Rule 100 (General Provisions and Definitions)

SECTION 100 – GENERAL

- 101 DECLARATION OF INTENT:** The Maricopa County Air Pollution Control Regulations prevent, reduce, control, correct, or remove regulated air pollutants originating within the territorial limits of Maricopa County and carry out the mandates of Arizona Revised Statutes (ARS), Title 49-The Environment.
- 102 LEGAL AUTHORITY:** These rules are adopted under the authority granted by ARS §49-479.
- 103 VALIDITY:** If any section, subsection, clause, phrase, or provision of these rules is held to be invalid for any reason, such decision shall not affect the validity of the remaining portion.
- 104 CIRCUMVENTION:** A person shall not build, erect, install, or use any article, machine, equipment, condition, or any contrivance, the use of which, without resulting in a reduction in the total release of regulated air pollutants to the atmosphere, conceals or dilutes an emission which would otherwise constitute a violation of these rules. No person shall circumvent these rules to dilute regulated air pollutants by using more emission openings than is considered normal practice by the industry or activity in question.
- 105 RIGHT OF INSPECTION OF PREMISES:** The Control Officer, during reasonable hours, for the purpose of enforcing and administering these rules or any provision of ARS relating to the emission or control prescribed pursuant thereto, may enter every building, premises, or other place, except the interior of structures used as private residences. In the event that consent to enter for inspection purposes has been refused or circumstances justify the failure to seek such consent, special inspection warrants may be issued by a magistrate. Every person is guilty of a petty offense under ARS §49-488 who in any way denies, obstructs, or hampers such entrance or inspection that is lawfully authorized by warrant.
- 106 RIGHT OF INSPECTION OF RECORDS:** . The Control Officer may request, in writing, that a person furnish information to determine compliance with the Maricopa County Air

Pollution Control Regulations or issued permits. No person shall fail nor refuse to produce all information required in such written request by the Control Officer.

- 107 ADVISORY COUNCIL:** An Advisory Council appointed by the Board of Supervisors may advise and consult with the Board of Supervisors, the MCAQD, and the Control Officer in effecting the mandates of ARS Title 49.
- 108 HEARING BOARD:** The Board of Supervisors shall appoint a 5-member hearing board knowledgeable in the field of air pollution. At least three members shall not have a substantial interest, as defined in ARS §38-502(11), in any person required to obtain an air pollution permit or subject to enforcement orders issued under these rules. Each member shall serve a term of three years.
- 109 ANTI-DEGRADATION:** The standards in these rules shall not be construed as permitting the preventable degradation of air quality in any area of Maricopa County.
- 110 AVAILABILITY OF POLLUTION INFORMATION:** The public shall be informed on a daily basis of average daily concentration of three pollutants: particulates, carbon monoxide, and ozone. This information shall be disseminated through the use of electronic media, newspapers, radio, and television. The levels of each pollutant shall be expressed through the use of the Air Quality Index (AQI) and a written copy of such information shall be made available at the office of the Maricopa County Air Quality Department.
- 111 ANNUAL REASONABLE FURTHER PROGRESS (RFP) REPORT:** Each year, the MCAQD shall prepare or assist in the preparation of a report on the progress in implementation of nonattainment area plans. The primary function of the report is to review the implementation schedules for control measures and emission reduction forecasts in the nonattainment area plans.
- 112 AVAILABILITY OF INFORMATION:** Copies of 40 CFR 51, Subpart A, Appendix A, Table 2A currently enforced by the MCAQD are available electronically at: www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR; at the Maricopa Air Quality Department.

SECTION 200 – DEFINITIONS: To aid in the understanding of these rules, the following general definitions are provided. Additional definitions, as necessary, can be found in each rule of the Maricopa County Air Pollution Control Regulations. In the event of any inconsistency between any of the Maricopa County Air Pollution Control Regulations, the definition in the specific rule takes precedence.

- 200.1 A.A.C.:** Arizona Administrative Code.
- 200.2 ACT:** The Clean Air Act of 1963 (P.L. 88-206; 42 United States Code sections 7401 through 7671q), as amended through December 31, 2014 (and no future editions).
- 200.3 ACTUAL EMISSIONS:** The actual rate of emissions of a regulated pollutant from an emissions unit, as determined in Section 200.3(a) through Section 200.3(e) of this rule:

- a. In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a consecutive 24-month period that precedes the particular date and that is representative of normal source operation. The Control Officer may allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the emissions unit's actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.
- b. The Control Officer may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the unit.
- c. For any emissions unit at a Title V source that has not begun normal operations on the particular date, actual emissions shall equal the unit's potential to emit on that date.
- d. For any emissions unit at a Non-Title V source that has not begun normal operations on the particular date, actual emissions shall be based on applicable control equipment requirements and projected conditions of operation.
- e. This definition shall not apply for calculating whether a significant emissions increase has occurred, or for establishing a PAL. Instead, the definitions of projected actual emissions and baseline actual emissions in Rule 240 of these rules shall apply for those purposes.

- 200.4 ADMINISTRATOR:** The Administrator of the United States Environmental Protection Agency.
- 200.5 ADVISORY COUNCIL:** The Maricopa County Air Pollution Control Advisory Council appointed by the Maricopa County Board of Supervisors.
- 200.6 AFFECTED FACILITY:** With reference to a stationary source, any apparatus to which a standard is applicable.
- 200.7 AFFECTED SOURCE:** A source that includes one or more emissions units which are subject to emission reduction requirements or limitations under Title IV-Acid Deposition Control of the Act.
- 200.8 AFFECTED STATE:** Any State whose air quality may be affected and that is contiguous to Arizona or that is within 50 miles of the permitted source.
- 200.9 AIR CONTAMINANT:** Includes smoke, vapors, charred paper, dust, soot, grime, carbon, fumes, gases, sulfuric acid mist aerosols, aerosol droplets, odors, particulate matter, windborne matter, radioactive materials, noxious chemicals, or any other material in the outdoor atmosphere.
- 200.10 AIR POLLUTION:** The presence in the outdoor atmosphere of one or more air contaminants, or combinations thereof, in sufficient quantities, which either alone or in connection with other substances, by reason of their concentration and duration,

are or tend to be injurious to human, plant, or animal life, or causes damage to property, or unreasonably interferes with the comfortable enjoyment of life or property of a substantial part of a community, or obscures visibility, or which in any way degrades the quality of the ambient air below the standards established by the Board of Supervisors.

- 200.11 AIR POLLUTION CONTROL EQUIPMENT:** Equipment used to eliminate, reduce, or control the emission of air pollutants into the ambient air.
- 200.12 ALLOWABLE EMISSIONS:** The emission rate of a stationary source calculated using both the maximum rated capacity of the source (unless the source is subject to federally enforceable limits which restrict the operating rate or hours of operation) and the most stringent of the following:
- a. The applicable standards as set forth in 40 CFR 60, 61 or 63;
 - b. The applicable emissions limitations approved into the state implementation plan, including those with a future compliance date; or
 - c. The emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 200.13 ALTERNATIVE OPERATING SCENARIO:** An authorized change within a Title V permit that involves change for a particular emissions unit, and that either results in the unit being subject to one or more applicable requirements which differ from those applicable to the emissions unit prior to implementation of the change or renders inapplicable one or more requirements previously applicable to the emissions unit prior to implementation of the change.
- 200.14 AMBIENT AIR:** That portion of the atmosphere, external to buildings, to which the general public has access.
- 200.15 AP-42:** The EPA document "Compilation of Air Pollutant Emission Factors".
- 200.16 APPLICABLE IMPLEMENTATION PLAN:** Those provisions of the State Implementation Plan (SIP) approved by the Administrator or a Federal Implementation Plan (FIP) promulgated for Arizona or any portion of Arizona by the Administrator.
- 200.17 APPLICABLE REQUIREMENT:** Applicable requirement means any of the following:
- a. Any federal applicable requirement as defined in Section 200.50 of this rule.
 - b. Any other requirement established under the Maricopa County Air Pollution Control Regulations or ARS Title 49, Chapter 3, Articles 1, 3, 7, and 8.
- 200.18 ARIZONA TESTING MANUAL:** Sections 1 and 7 of the Arizona Testing Manual for Air Pollutant Emissions amended as of March 1992 (and no future editions).

200.19 APPROVED: Approved in writing by the Maricopa County Air Pollution Control Officer.

200.20 AREA SOURCE:

- a. Any stationary source that is not a major source. For purposes of these rules, the term “area source” shall not include motor vehicles or nonroad vehicles subject to the regulation under Title II-Emission Standards for Moving Sources of the Act.
- b. An area source of hazardous air pollutants (HAPs) is a source of HAP that is not a major source of HAP and is not part of a major source of HAP emissions. A major source of HAP emissions is defined in the definition of “Major Source” of this rule.

200.21 A.R.S.: The Arizona Revised Statutes. The titles of the most frequently used ARS references in these rules are listed below:

A.R.S. § 38-502(11)	Public Officers and Employees, Conduct of Office, Conflict of Interest of Officers and Employees, Definitions, Substantial Interest
A.R.S. Title 49	The Environment
A.R.S. Title 49, Chapter 3	The Environment, Air Quality
A.R.S. Title 49, Chapter 4	The Environment, Solid Waste Management
A.R.S. § 49-109	The Environment, General Provisions, Department of Environmental Quality, Certificate of Disclosure of Violations; Definition; Remedies
A.R.S. § 49-401	The Environment, Air Quality, General Provisions, Declaration of Policy
A.R.S. § 49-426	The Environment, Air Quality, State Air Pollution Control, Permits; Duties of Director; Exceptions; Applications; Objections; Fees
A.R.S. § 49-426.04	The Environment, Air Quality, State Air Pollution Control, State List of Hazardous Air Pollutants
A.R.S. § 49-426.05	The Environment, Air Quality, State Air Pollution Control, Designation of Sources of Hazardous Air Pollutants
A.R.S. § 49-429	The Environment, Air Quality, State Air Pollution Control, Permit Transfers; Notice; Appeal
A.R.S. § 49-464	The Environment, Air Quality, State Air Pollution Control, Violation; Classification; Penalties; Definition
A.R.S. § 49-473	The Environment, Air Quality, County Air Pollution Control, Board of Supervisors
ARS § 49-476.01	The Environment, Air Quality, County Air Pollution Control, Monitoring
A.R.S. § 49-478	The Environment, Air Quality, County Air Pollution Control, Hearing Board
A.R.S. § 49-480	The Environment, Air Quality, County Air Pollution Control, Permits; Fees

A.R.S. § 49-480.03	The Environment, Air Quality, County Air Pollution Control, Federal Hazardous Air Pollutant Program; Date Specified by Administrator; Prohibition
A.R.S. § 49-480.04	The Environment, Air Quality, County Air Pollution Control, County Program for Control of Hazardous Air Pollutants
A.R.S. § 49-482	The Environment, Air Quality, County Air Pollution Control, Appeals to Hearing Board
A.R.S. § 49-483	The Environment, Air Quality, County Air Pollution Control, Permit Transfers; Notice; Appeal
A.R.S. § 49-487	The Environment, Air Quality, County Air Pollution Control, Classification and Reporting; Confidentiality of Records
A.R.S. § 49-488	The Environment, Air Quality, County Air Pollution Control, Special Inspection Warrant
A.R.S. § 49-490	The Environment, Air Quality, County Air Pollution Control, Hearings on Orders of Abatement
A.R.S. § 49-498	The Environment, Air Quality, County Air Pollution Control, Notice of Hearing; Publication; Service
A.R.S. § 49-501	The Environment, Air Quality, County Air Pollution Control, Unlawful Open Burning; Definition; Exceptions; Fine
A.R.S. § 49-511	The Environment, Air Quality, County Air Pollution Control, Violations, Order of Abatement
A.R.S. § 49-514	The Environment, Air Quality, County Air Pollution Control, Violation; Classification; Definition

200.22 ASME: The American Society of Mechanical Engineers.

200.23 ASTM: The American Society for Testing and Materials.

200.24 ATTAINMENT AREA: Any area in the state that has been identified in regulations promulgated by the Administrator as being in compliance with national ambient air quality standards.

200.25 BEGIN ACTUAL CONSTRUCTION: Initiation of physical on-site construction activities on an emissions unit, which are of a permanent nature. Such activities include, but are not limited to, installation of building supports and foundations, laying of underground pipework, and construction of permanent storage structures. With respect to a change in method of operation, “begin actual construction” refers to those on-site activities, other than preparatory activities, which mark the initiation of the change.

200.26 BEST AVAILABLE CONTROL TECHNOLOGY (BACT): An emissions limitation, based on the maximum degree of reduction for each pollutant, subject to regulation under the Act, which would be emitted from any proposed stationary source or modification, which the Control Officer, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or

treatment or innovative fuel combination techniques for control of such pollutant. Under no circumstances shall BACT be determined to be less stringent than the emission control required by an applicable provision of these rules or of any State or Federal laws ("Federal laws" include the EPA approved State Implementation Plan (SIP)). If the Control Officer determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.

- 200.27 BRITISH THERMAL UNIT (BTU):** The quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit (°F) at 39.1°F.
- 200.28 BUILDING, STRUCTURE, FACILITY, OR INSTALLATION:** All the pollutant-emitting equipment and activities that belong to the same industrial grouping, that are located on one or more contiguous or adjacent properties, and that are under the control of the same person or persons under common control, except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same "Major Group" as described in the "Standard Industrial Classification Manual, 1987".
- 200.29 BUSINESS DAY OR WORKING DAY:** Any day during which the Maricopa County Air Quality Department (MCAQD) is open for business, which is typically Monday through Friday with the exception of Maricopa County-recognized holidays that occur on any of the days Monday through Friday.
- 200.30 CATEGORICAL SOURCES:** The following classes of sources:
- a. Coal cleaning plants with thermal dryers;
 - b. Kraft pulp mills;
 - c. Portland cement plants;
 - d. Primary zinc smelters;
 - e. Iron and steel mills;
 - f. Primary aluminum ore reduction plants (with thermal dryers);
 - g. Primary copper smelters;
 - h. Municipal incinerators capable of charging more than 250 tons of refuse per day;
 - i. Hydrofluoric, sulfuric, or nitric acid plants;
 - j. Petroleum refineries;
 - k. Lime plants;
 - l. Phosphate rock processing plants;
 - m. Coke oven batteries;
 - n. Sulfur recovery plants;
 - o. Carbon black plants using the furnace process;
 - p. Primary lead smelters;
 - q. Fuel conversion plants;
 - r. Sintering plants;
 - s. Secondary metal production plants;

- t. Chemical process plants, which shall not include ethanol production facilities that produce ethanol by natural fermentation included in North American Industry Classification System codes 325193 or 312140;
- u. Fossil-fuel boilers, or combinations thereof, totaling more than 250 million British thermal units (Btu) per hour heat input;
- v. Petroleum storage and transfer units with a total storage capacity more than 300,000 barrels;
- w. Taconite ore processing plants;
- x. Glass fiber processing plants;
- y. Charcoal production plants;
- z. Fossil fuel-fired steam electric plants and combined cycle gas turbines of more than 250 million Btu per hour rated heat input;
- aa. Any other stationary source category which, as of August 7, 1980, is being regulated under Section 111-Standards of Performance for New Stationary Sources of the Act or under Section 112-National Emission Standards for Hazardous Air Pollutants of the Act.

200.31 CFR: The United States Code of Federal Regulations with standard references in these rules by Title and Part, so that “40 CFR 51” means “Title 40 of the Code of Federal Regulations, Part 51.”

200.32 CIRCUMSTANCES OUTSIDE THE CONTROL OF THE SOURCE: Shall include, but not be limited to, circumstances where a violation resulted from a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

200.33 COMPLETE: In reference to an application for a permit or permit revision, “complete” means that the application contains all the information necessary for processing the application. Designating an application complete for purposes of permit or permit revision, processing does not preclude the Control Officer from requesting nor from accepting any additional information.

200.34 CONSTRUCTION: Any physical change or change in the method of operation, including fabrication, erection, or installation, demolition, or modification of an emissions unit, which would result in a change in actual emissions.

200.35 CONTROL OFFICER: The executive head of the department authorized or designated to enforce air pollution regulations, the executive head of an air pollution control district established under A.R.S. § 49-473.

200.36 CONVENTIONAL AIR POLLUTANT: Any pollutant for which the Administrator has promulgated a primary or secondary national ambient air quality standard, including precursors to such pollutants.

200.37 DEPARTMENT: The Maricopa County Air Quality Department (MCAQD).

- 200.38 DIRECTOR:** The director of the Arizona Department of Environmental Quality (ADEQ).
- 200.39 DISCHARGE:** The release or escape of any air contaminant into the atmosphere from a source.
- 200.40 DIVISION:** The Division no longer exists; consequently, all references in these rules to Division refer to the MCAQD.
- 200.41 DUST:** Finely divided solid particulate matter occurring naturally or created by mechanical processing, handling or storage of materials in the solid state.
- 200.42 DUST GENERATING OPERATION:** Any activity capable of generating fugitive dust, including but not limited to, land clearing, maintenance, and land clean-up using mechanized equipment, earthmoving, weed abatement by discing or blading, excavating, construction, demolition, bulk material handling (e.g., bulk material hauling and/or transporting, bulk material stacking, loading, and unloading operations), storage and/or transporting operations (e.g., open storage piles), the operation of any outdoor equipment, the operation of motorized machinery, establishing and/or using staging areas, parking areas, material storage areas, or access routes to and from a site, establishing and/or using unpaved haul/access roads to, from, and within a site, disturbed surface areas associated with a site, and installing initial landscapes using mechanized equipment. For the purpose of this definition, landscape maintenance and playing on or maintaining a field used for non-motorized sports shall not be considered a dust generating operation. However, landscape maintenance shall not include grading, trenching, or any other mechanized surface disturbing activities performed to establish initial landscapes or to redesign existing landscapes.
- 200.43 EFFLUENT:** Any air contaminant which is emitted and subsequently escapes into the atmosphere.
- 200.44 EMISSION:** An air contaminant, gas stream or the act of discharging an air contaminant or a gas stream, visible or invisible.
- 200.45 EMISSION STANDARD:** The definition of emission standard, as summarized from A.R.S. § 49-514(T) and A.R.S. § 49-464(V), is: A numeric limitation on the volume or concentration of air pollutants in emissions from a source or a specific design, equipment, or work practice standard, the purpose of which is to eliminate or reduce the volume or concentration of pollutants emitted by a source. The term emission standard does not include opacity standards. Violations of emission standards shall be determined in the manner prescribed by the applicable regulations issued by the Administrator or the Director or the Control Officer.
- 200.46 EMISSIONS UNIT:** Any part of a stationary source which emits or would have the potential to emit any regulated air pollutant.
- 200.47 EPA:** The United States Environmental Protection Agency.

- 200.48 EQUIVALENT METHOD:** Any method of sampling and analyzing for an air pollutant, which has been demonstrated to the Administrator's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.
- 200.49 EXCESS EMISSIONS:** Emissions of an air pollutant in excess of an emission standard, as measured by the compliance test method applicable to such emission standard.
- 200.50 EXISTING SOURCE:** Any source that is not a new source.
- 200.51 FACILITY:** The definition of facility is included in the definition of "building, structure, facility or installation" of this rule.
- 200.52 FEDERAL APPLICABLE REQUIREMENT:** Any of the following (including requirements that have been promulgated or approved by the EPA through rulemaking at the time of issuance but have future effective compliance dates):
- a. Any standard or other requirement provided for in the applicable implementation plan approved or promulgated by the EPA through rulemaking under Title I-Air Pollution Prevention and Control of the Act that implements the relevant requirements of the Act, including any revisions to that plan promulgated in 40 CFR 52.
 - b. Any term or condition of any unitary permits issued under regulations approved or promulgated through rulemaking under Title I-Air Pollution Prevention and Control, including Parts C or D, of the Act.
 - c. Any standard or other requirement under Section 111-Standards of Performance for New Stationary Sources of the Act, including Section 111(d).
 - d. Any standard or other requirement under Section 112-National Emission Standards for Hazardous Air Pollutants of the Act, including any requirement concerning accident prevention under Section 112(r)(7) of the Act.
 - e. Any standard or other requirement of the acid rain program under Title IV-Acid Deposition Control of the Act or the regulations promulgated thereunder and incorporated under Rule 371-Acid Rain of these rules.
 - f. Any requirements established under Section 504(b)-Permit Requirements and Conditions or Section 114(a)(3)-Inspections, Monitoring, and Entry of the Act.
 - g. Any standard or other requirement governing solid waste incineration under Section 129-Solid Waste Combustion of the Act.
 - h. Any standard or other requirement for consumer and commercial products pursuant to Section 183(e)-Federal Ozone Measures of the Act.
 - i. Any standard or other requirement for tank vessels pursuant to Section 183(f)-Federal Ozone Measures of the Act.

- j. Any standard or other requirement of the program to control air pollution from outer continental shelf sources under Section 328-Air Pollution from Outer Continental Shelf Activities of the Act.
- k. Any standard or other requirement of the regulations promulgated to protect stratospheric ozone under Title VI-Stratospheric Ozone Protection of the Act, unless the Administrator has determined that such requirements need not be contained in a Title V permit; and
- l. Any national ambient air quality standard or increment or visibility requirement under Part C-Prevention of Significant Deterioration of Air Quality of Title I-Air Pollution Prevention and Control of the Act, but only as it would apply to temporary sources permitted under Section 504(e)-Permit Requirements and Conditions of the Act.

200.53 FEDERALLY ENFORCEABLE: All limitations and conditions which are enforceable by the Administrator under the Act, including all of the following:

- a. All terms and conditions contained in a Title V permit, except those terms and conditions which have been specifically designated as not federally enforceable;
- b. The requirements of operating permit programs and permits issued under such permit programs which have been approved by the Administrator, including the requirements of State and County operating permit programs approved under Title V of the Act or under any new source review permit program;
- c. All limitations and conditions which are enforceable by the Administrator, including the requirements of the New Source Performance Standards (NSPS) and the National Emissions Standards for Hazardous Air Pollutants (NESHAPs);
- d. The requirements of such other State or County rules or regulations approved by the Administrator in the State Implementation Plan (SIP);
- e. The requirements of any federal regulation promulgated by the Administrator as part of the State Implementation Plan (SIP); and
- f. The requirements of State and County operating permit programs, other than Title V programs, which have been approved by the Administrator and incorporated into the applicable State Implementation Plan (SIP) under the criteria for federally enforceable State Operating Permit Programs set forth in 54, Federal Register 27274, dated June 28, 1989. Such requirements include permit terms and conditions which have been entered into voluntarily by a source under Rule 220-Non-Title V Permit Provisions of these rules.
- g. Emissions limitations, controls, and other requirements, and any associated monitoring, recordkeeping, and reporting requirements that are included in a permit pursuant to Rule 201-Emissions Caps of these rules or Rule 220, Section 304-Permits Containing Voluntarily Accepted Emissions Limitations, Controls, Or Other Requirements (Synthetic Minor) of these rules.

- 200.54 FEDERALLY LISTED HAZARDOUS AIR POLLUTANT:** Any air pollutant listed pursuant to Section 112(b) of the Act.
- 200.55 FINAL PERMIT:** The version of a permit issued by the Control Officer after completion of all review required by Maricopa County Air Pollution Control Regulations.
- 200.56 FUEL:** Any material which is burned for the purpose of producing energy.
- 200.57 FUEL OIL:** Number 2 through Number 6 fuel oils as specified in ASTM D396-90a-Specification for Fuel Oils, gas turbine fuel oils Numbers 2-GT through 4-GT as specified in ASTM D2880-90a-Specification for Gas Turbine Fuel Oils, or diesel fuel oils Numbers 2-D and 4-D as specified in ASTM D975-90a-Specification for Diesel Fuel Oils. For the purpose of this definition, on-specification used oil, also referred to as “on-specification burner fuel”, “used fuel oil”, or “waste oil”, is not “fuel oil”.
- 200.58 FUGITIVE EMISSION:** Any emission which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.
- 200.59 FUME:** Solid particulate matter resulting from the condensation and subsequent solidification of vapors of melted solid materials.
- 200.60 GASOLINE:** Any petroleum distillate, petroleum distillate/alcohol blend, petroleum distillate/organic compound blend, or alcohol that meets both of the following conditions:
- a. Has a Reid vapor pressure between 4.0 and 14.7 psi (200-760 mm Hg) as determined by ASTM D323-06.
 - b. Is used as a fuel for internal combustion engines.
- 200.61 GREENHOUSE GASES (GHGs):** The air pollutant defined in 40 CFR 86.1818-12(a) as the aggregate group of six greenhouse gases: Carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.
- 200.62 HAZARDOUS AIR POLLUTANT (HAP):** Any federally listed hazardous air pollutant.
- 200.63 INSIGNIFICANT ACTIVITY:** For the purpose of this definition, an insignificant activity shall be any specific activity, process or emissions unit which meets the following criteria: (1) Emits less than the permitting thresholds as defined in this rule and is listed in this definition or (2) Is not subject to permit requirements pursuant to Rule 200-Permit Requirements, Sections 303.2(a) or (b) of these rules. The sum of emissions from multiple activities, processes or emissions units of any one of the activities, processes or emissions units identified in (a) – (y) below that exceeds a permitting threshold shall not be considered an insignificant activity.
- a. Any confection cooker and associated venting or control equipment cooking edible products intended for human consumption.

- b.** Any oven in a food processing operation where less than 1,000 pounds of product are produced per day of operation.
- c.** Any natural gas and/or liquefied petroleum gas-fired pieces of equipment rated equal to or greater than 300,000 Btu per hour, if:
 - (1)** The combined input capacities from all such equipment are less than 2,000,000 Btu per hour, and
 - (2)** The emissions come from fuel burning, and
 - (3)** The equipment is used solely for heating buildings for personal comfort or for producing hot water for personal use.
- d.** Any piece of heating equipment burning fuel oil with a maximum rate input capacity or an aggregate input capacity of less than:
 - (1)** 500,000 Btu per hour if the only emissions are from fuel burning, or
 - (2)** 1,000,000 Btu per hour if the only emissions are from fuel burning and the equipment is used solely for heating buildings for personal comfort or for producing hot water for personal use.
- e.** Any equipment or activity at a stationary source using no more than 300 gallons per year of surface coating material or any combination of surface coating material and solvent, which contains either VOC or hazardous air pollutants (HAPs) or both.
- f.** Any non-vapor cleaning machine (degreaser) or dip-tank:
 - (1)** Having a liquid surface area of 1 square foot (0.09 square meters) or less, or
 - (2)** Having a maximum capacity of 1 gallon (3.79 liters) or less.
- g.** Any internal combustion (IC) engine with a manufacturer's maximum continuous rating of 50 brake horsepower (bhp) or less.
- h.** For a stationary source subject to Title V, the following equipment when used only for emergency replacement or standby service (including testing of same), not to exceed a total potential to emit of 2,000 pounds of NO_x and not to exceed a total potential to emit of 2,000 pounds of CO from all internal combustion (IC) engines and not to exceed 500 hours of operation per year per IC engine. Potential to emit is calculated at 500 hours of operation per year per IC engine.
 - (1)** IC engine-driven compressors; or
 - (2)** IC engine-driven electrical generator sets; or
 - (3)** IC engine-driven water pumps.

- i.** For a stationary source not subject to Title V, the following equipment when used only for emergency replacement or standby service (including testing of same), not to exceed a total potential to emit of 2,000 pounds of NO_x and not to exceed a total potential to emit of 2,000 pounds of CO from all internal combustion (IC) engines and not to exceed 100 hours of operation per year per IC engine. Potential to emit is calculated at 100 hours of operation per year per IC engine.

 - (1)** IC engine-driven compressors; or
 - (2)** IC engine-driven electrical generator sets; or
 - (3)** IC engine-driven water pumps.
- j.** Lab equipment used exclusively for chemical and physical analyses.
- k.** Organic liquid or gasoline storage tanks or containers that hold 250 gallons or less and would have emissions of a regulated air pollutant.
- l.** Any emissions unit, operation, or activity that receives no more than 12,000 gallons of a liquid in a year with a Reid vapor pressure less than 0.5 psia, as determined by ASTM D323-15a.
- m.** Any equipment used exclusively for the storage of unheated organic material with:

 - (1)** An initial boiling point of 150° Centigrade (C) (302° Fahrenheit (F)) or greater, as determined by ASTM D1078-11; or
 - (2)** A vapor pressure of no more than 5 millimeters mercury (mm Hg) (0.1 pound per square inch (psi) absolute), as determined by ASTM D2879-11.
- n.** Any equipment with a capacity of no more than 4,200 gallons (100 barrels) used exclusively to store oil with specific gravity 0.8762 or higher (30° API or lower), as measured by API test method 2547 or ASTM D1298-12b.
- o.** Any equipment used exclusively for the storage of liquefied gases in unvented pressure vessels, except for emergency pressure-relief valves.
- p.** Any equipment used exclusively to compress or hold dry natural gas. Any internal combustion (IC) engine or other equipment associated with the dry natural gas shall not be considered an insignificant activity, unless such IC engine or other equipment independently qualifies as an insignificant activity.
- q.** Any equipment used exclusively for the storage of fresh, commercial, or purer grade of:

 - (1)** Sulfuric or phosphoric acid with acid content of no more than 99% by weight; or
 - (2)** Nitric acid with acid content of no more than 70% by weight.
- r.** Wet abrasive blasting.

- s. Any water cooling tower which has a circulation rate of less than 3,000 gallons per minute.
- t. Any water cooling towers which:
 - (1) Have a combined circulation rate of less than 10,000 gallons per minute; and
 - (2) Are not used to cool process water, water from barometric jets, or water from barometric condensers.
- u. Batch mixers with rated capacity of 5 cubic feet or less.
- v. Wet sand and gravel production facilities that obtain material from subterranean and subaqueous beds, whose production rate is 200 tons per hour or less, and whose permanent in-plant roads are paved and cleaned to control dust. This does not include activities in emissions units, which are used to crush or grind any nonmetallic minerals.
- w. Any brazing, soldering, welding, or cutting torch equipment used in manufacturing and construction activities and with the potential to emit hazardous air pollutant (HAP) metals, provided the total emissions of HAPs do not exceed 0.5 ton per year.
- x. Hand-held or manually operated equipment used for buffing, polishing, carving, cutting, drilling, machining, routing, sanding, sawing, surface grinding, or turning of ceramic art work, precision parts, leather, metals, plastics, fiberboard, masonry, carbon, glass, or wood.
- y. Any aerosol can puncturing or crushing operation that uses:
 - (1) A closed loop recovery system that emits no regulated air pollutants, or
 - (2) A recovery system that vents all emissions through a properly operated and maintained carbon canister, provided not more than 500 cans are processed through the equipment per day.

200.64 MAJOR MODIFICATION: The following definition of “Major Modification” applies to all rules in the Maricopa County Air Pollution Control Regulations except for Rule 240-Federal Major New Source Review (NSR). Rule 240 of these rules has a definition of “Major Modification” and that definition is specific to stationary sources subject to Rule 240.

- a. Any physical change in or change in the method of operation of a major source that would result in both a significant emissions increase of any regulated NSR pollutant and a significant net emissions increase of that pollutant from the stationary source.
- b. Any emissions increase or net emissions increase that is significant for nitrogen oxides or volatile organic compounds is significant for ozone.

- c.** For the purpose of this definition, none of the following is a physical change or a change in the method of operation:
- (1)** Routine maintenance, repair, and replacement;
 - (2)** Use of an alternative fuel or raw material by reason of an order under Sections 2(a) and (b) of the Energy Supply and Environmental Coordination Act of 1974, 15 U.S.C. §792, or by reason of a natural gas curtailment plan under the Federal Power Act, 16 U.S.C. §792-825r;
 - (3)** Use of an alternative fuel by reason of an order or rule under Section 125-Measures to Prevent Economic Disruption or Unemployment of the Act;
 - (4)** Use of an alternative fuel at a steam generating unit to the extent that the fuel is generated from municipal solid waste;
 - (5)** For the purpose of determining the applicability of Rule 240-Federal Major New Source Review (NSR), Section 304 (Permit Requirements for New Major Sources or Major Modifications Located in Nonattainment Areas) of these rules, any of the following:
 - (a)** Use of an alternative fuel or raw material by a stationary source that the source was capable of accommodating before December 12, 1976, unless the change would be prohibited under any federally enforceable permit condition established after December 12, 1976, under 40 CFR 52.21, or under Rule 200-Permit Requirements, Rule 210-Title V Permit Provisions, Rule 240-Federal Major New Source Review (NSR), Rule 245-Continuous Source Emission Monitoring, and Rule 270-Performance Tests of these rules; or
 - (b)** Use of an alternative fuel or raw material by a stationary source that the source is approved to use under any permit issued under 40 CFR 52.21, or under Rule 200-Permit Requirements, Rule 210-Title V Permit Provisions, Rule 240-Federal Major New Source Review (NSR), Rule 245-Continuous Source Emission Monitoring, and Rule 270-Performance Tests of these rules; or
 - (c)** An increase in the hours of operation or in the production rate, unless the change would be prohibited under any federally enforceable permit condition established after December 12, 1976, under 40 CFR 52.21, or under Rule 200-Permit Requirements, Rule 210-Title V Permit Provisions, Rule 240-Federal Major New Source Review (NSR), Rule 245-Continuous Source Emission Monitoring, and Rule 270-Performance Tests of these rules.
 - (6)** For the purpose of determining applicability of Rule 240-Federal Major New Source Review (NSR), Section 305 (Permit Requirements for New Major Sources or Major Modifications Located in Attainment or Unclassifiable Areas) of these rules, any of the following:

- (a) Use of an alternative fuel or raw material by a stationary source that the source was capable of accommodating before January 6, 1975, unless the change would be prohibited under any federally enforceable permit condition established after January 6, 1975, under 40 CFR 52.21, or under Rule 200-Permit Requirements, Rule 210-Title V Permit Provisions, Rule 240-Federal Major New Source Review (NSR), Rule 245-Continuous Source Emission Monitoring, and Rule 270-Performance Tests of these rules; or
 - (b) Use of an alternative fuel or raw material by a stationary source that the source is approved to use under any permit issued under 40 CFR 52.21, or under Rule 200-Permit Requirements, Rule 210-Title V Permit Provisions, Rule 240-Federal Major New Source Review (NSR), Rule 245-Continuous Source Emission Monitoring, and Rule 270-Performance Tests of these rules; or
 - (c) An increase in the hours of operation or in the production rate, unless the change would be prohibited under any federally enforceable permit condition established after January 6, 1975, under 40 CFR 52.21, or under Rule 200-Permit Requirements, Rule 210-Title V Permit Provisions, Rule 240-Federal Major New Source Review (NSR), Rule 245-Continuous Source Emission Monitoring, and Rule 270-Performance Tests of these rules.
- (7) Any change in ownership at a stationary source;
 - (8) The installation, operation, cessation, or removal of a temporary clean coal technology demonstration project, if the project complies with:
 - (a) The State Implementation Plan (SIP); and
 - (b) Other requirements necessary to attain and maintain the national ambient air quality standards during the project and after it is terminated;
 - (9) For electric utility steam generating units located in attainment and unclassified areas only, the installation or operation of a permanent clean coal technology demonstration project that constitutes repowering, if the project does not result in an increase in the potential to emit of any regulated pollutant emitted by the unit. This exemption shall apply on a pollutant-by-pollutant basis; and
 - (10) For electric utility steam generating units located in attainment and unclassified areas only, the reactivation of a very clean coal-fired electric utility steam generating unit.
- d. This definition shall not apply with respect to a particular regulated NSR pollutant when the major source is complying with the requirements of Plantwide Applicability Limitations (PALs) as described in Rule 240 of these rules. Instead, the definition of "PAL" major modification in Rule 240 of these rules shall apply.

200.65 MAJOR SOURCE: A source that meets any of the following criteria:

- a. A major source as defined in Rule 240-Federal Major New Source Review (NSR) of these rules.
- b. A major source under Section 112 (National Emission Standards for Hazardous Air Pollutants) of the Act:
 - (1) For pollutants other than radionuclides, any stationary source that emits or has the potential to emit, in the aggregate, including fugitive emissions, 10 tons per year (tpy) or more of any hazardous air pollutant which has been listed under Section 112(b) of the Act, 25 tpy or more of any combination of such hazardous air pollutants, or such lesser quantity as described in Title 18 (Environmental Quality), Chapter 2 (Department of Environmental Quality Air Pollution Control), Article 11 (Federal Hazardous Air Pollutants) of the Arizona Administrative Code. Notwithstanding the preceding sentence, emissions from any oil or gas exploration or production well (with its associated equipment) and emissions from any pipeline compressor or pump station shall not be aggregated with emissions from other similar units, whether or not such units are in a contiguous area or under common control, to determine whether such units or stations are major source; or
 - (2) For radionuclides, major source shall have the meaning specified by the Administrator by rule.
- c. A major stationary source, as defined in Section 302 of the Act, that directly emits or has the potential to emit, 100 tpy or more of any regulated air pollutant including any major source of fugitive emissions of any such pollutant. The fugitive emissions of a stationary source shall not be considered in determining whether it is a major stationary source for the purpose of Section 302(j) of the Act, unless the source belongs to a section 302(j) category of the Act.

200.66 MAJOR SOURCE THRESHOLD: The lowest applicable emissions rate for a pollutant that would cause the source to be a major source, at the particular time and location, under the definition of “major source” of this rule.

200.67 MALFUNCTION: Any sudden and unavoidable failure of air pollution control equipment, process, or process equipment to operate in a normal and usual manner. Failures that are caused by poor maintenance, careless operation, or any other upset condition or equipment breakdown which could have been prevented by the exercise of reasonable care shall not be considered a malfunction.

200.68 MATERIAL PERMIT CONDITION:

- a. For the purpose of A.R.S. § 49-464(G) and A.R.S. § 49-514(G), a material permit condition shall mean a condition which satisfies all of the following:
 - (1) The condition is in a permit or permit revision issued by the Control Officer or by the Director after the effective date of this rule.
 - (2) The condition is identified within the permit as a material permit condition.

(3) The condition is one of the following:

- (a) An enforceable emission standard imposed to avoid classification as a major modification or major source or to avoid triggering any other applicable requirement.
- (b) A requirement for the installation or certification of a monitoring device.
- (c) A requirement for the installation of air pollution control equipment.
- (d) A requirement for the operation of air pollution control equipment.
- (e) An opacity standard required by Section 111 (Standards of Performance for New Stationary Sources) of the Act or Title I (Air Pollution Prevention and Control), Part C or D, of the Act.

- b. Violation of the condition is not covered by Subsections (A) through (F) or (H) through (J) of A.R.S. § 49-464 or Subsections (A) through (F) or (H) through (J) of A.R.S. § 49-514.
- c. For the purpose of Section 200.66(a)(3)(c), (d), and (e) of this rule, a permit condition shall not be material where the failure to comply resulted from circumstances which were outside the control of the source.

200.69 MAXIMUM CAPACITY TO EMIT: The maximum amount a source is capable of emitting under its physical and operational design without taking any limitations on operations or air pollution controls into account.

200.70 METHOD OF OPERATION: The definition of “method of operation” is defined the same as the definition of “operation” in this rule.

200.71 MINOR NSR MODIFICATION: Any of the following changes, if the change does not meet the definition of a “Major Source” or “Major Modification”:

- a. Any physical change in or change in the method of operation of an emission unit or a stationary source that either:
 - (1) Increases the potential to emit of a regulated minor NSR pollutant by an amount greater than or equal to the minor NSR modification threshold, or
 - (2) Results in the potential to emit of a regulated minor NSR pollutant not previously emitted by such emission unit or stationary source in an amount greater than or equal to the minor NSR modification threshold for that pollutant.
- b. Construction of one or more new emissions units that have the potential to emit regulated minor NSR pollutants at an amount greater than or equal to the minor NSR modification threshold.
- c. A change covered by Sections 200.69(a) or (b) of this rule constitutes a minor NSR modification regardless of whether there will be a net decrease in total

source emissions or a net increase in total source emissions that is less than the minor NSR modification threshold as a result of decreases in the potential to emit of other emission units at the same stationary source.

- d. For the purpose of this definition, the following do not constitute a physical change or change in the method of operation:
- (1) A change consisting solely of the construction of, or changes to, a combination of emissions units qualifying as an insignificant activity.
 - (2) For a stationary source that is required to obtain a Non-Title V permit under Rule 200 of these rules and that is subject to source-wide emissions caps under Rule 201 of these rules, a change that will not result in the violation of the existing emissions cap for that regulated minor NSR pollutant.
 - (3) Replacement of an existing emission unit by an emission unit with a potential to emit regulated minor NSR pollutants that is less than or equal to the potential to emit of the existing emission unit, provided the replacement does not cause an increase in emissions at other emission units at the stationary source or emit any new pollutant above the permitting thresholds. An emission unit installed under this provision is subject to any limits applicable to the emission unit it replaced.
 - (4) Routine maintenance, repair, and replacement.
 - (5) Use of an alternative fuel or raw material by reason of an order under Sections 2(a) and (b) of the Energy Supply and Environmental Coordination Act of 1974, 15 U.S.C. 792, or by reason of a natural gas curtailment plan under the Federal Power Act, 16 U.S.C. 792 to 825r.
 - (6) Use of an alternative fuel by reason of an order or rule under Section 125 of the Act.
 - (7) Use of an alternative fuel at a steam generating unit to the extent that the fuel is generated from municipal solid waste.
 - (8) Use of an alternative fuel or raw material by a stationary source that either:
 - (a) The source was capable of accommodating before December 12, 1976, unless the change would be prohibited under any federally enforceable permit condition established after December 12, 1976, under 40 CFR 52.21, or under Rules 210, 220, 240, or 241 of these rules; or
 - (b) The source is approved to use under any permit issued under 40 CFR 52.21, or under Rules 210, 220, or 240 these rules.
 - (9) An increase in the hours of operation or in the production rate is not considered an operational change unless such increase is prohibited under any permit condition that is legally and practically enforceable by the MCAQD.

(10) Any change in ownership at a stationary source.

e. For purposes of this definition:

(1) "Potential to emit" means the lower of a stationary source's or emission unit's potential to emit or its allowable emissions.

(2) In determining potential to emit, the fugitive emissions of a stationary source shall not be considered unless the source belongs to a section 302(j) category.

(3) All of the roadways located at a stationary source constitute a single emissions unit.

200.72 MINOR NSR MODIFICATION THRESHOLD: For each regulated minor NSR pollutant, the following emission thresholds apply for the proposed change:

Pollutant	Potential to Emit in Tons Per Year (TPY)
PM _{2.5}	5.0(primary emissions only; levels for precursors are set below)
PM ₁₀	7.5
SO ₂	20
NO _x	20
VOC	20
CO	50
Pb	0.3

200.73 MOBILE SOURCE: Any combustion engine, device, machine or equipment that operates during transport and that emits or generates air contaminants whether in motion or at rest. This definition does not include auxiliary engines that are not used to propel the device, machine or equipment.

200.74 MODIFICATION: A physical change in or a change in the method of operation of a source which increases the actual emissions of any regulated air pollutant emitted by such source or which results in the emission of any regulated air pollutant not previously emitted. An increase in emissions at a minor source shall be determined by comparing the source's potential to emit before and after the modification. The following exemptions apply:

- a. A physical or operational change does not include routine maintenance, repair or replacement.
- b. An increase in the hours of operation or if the production rate is not considered an operational change unless such increase is prohibited under any permit condition that is legally and practically enforceable by the MCAQD.
- c. A change in ownership at a source is not considered a modification.

- 200.75 MOTOR VEHICLE:** Any self-propelled vehicle designed for transporting persons or property on public highways.
- 200.76 NATIONAL AMBIENT AIR QUALITY STANDARD (NAAQS):** The ambient air pollutant concentration limits established by the administrator pursuant to Section 109 of the Clean Air Act.
- 200.77 NET EMISSIONS INCREASE:** For the purpose of Rule 240, Sections 305 and 306 of these rules, a net emissions increase shall be defined by the federal regulations incorporated by reference. For the purpose of Rule 220 of these rules, a net emissions increase shall be an emissions increase for a particular modification plus any other increases and decreases in actual emissions at the facility that are creditable and contemporaneous with the particular modification where:
- a.** A creditable increase or decrease in actual emissions is contemporaneous with a particular modification if it occurs between the date five (5) years before a complete application for a permit or permit revision authorizing the particular change is submitted or actual construction of the particular change begins, whichever occurs earlier, and the date that the increase from the particular change occurs." Any replacement unit that requires shakedown becomes operational only after a reasonable shakedown period, not to exceed 180 days.
 - b.** A decrease in actual emissions is creditable only if it satisfies the requirements for emission reduction credits in Rule 204 of these rules and has approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular modification, and is federally enforceable at and after the time that construction of the modification commences.
- 200.78 NEW SOURCE:** A source for which construction has not commenced before the effective date of an applicable rule or standard to which a source is subject.
- 200.79 NEW SOURCE PERFORMANCE STANDARDS (NSPS):** Standards adopted by the Administrator under Section 111(b) of the Act.
- 200.80 NITROGEN OXIDES (NO_x):** All oxides of nitrogen except nitrous oxide, as measured by test methods set forth in the Appendices to 40 CFR Part 60.
- 200.81 NONATTAINMENT AREA:** An area so designated by the Administrator, acting under Section 107 (Air Quality Control Regions) of the Act, as exceeding national primary or secondary ambient air standards for a particular pollutant or pollutants.
- 200.82 NON-PRECURSOR ORGANIC COMPOUND:** Any of the organic compounds that have been designated by the EPA as having negligible photochemical reactivity as listed in 40 CFR 51.100(s).
- 200.83 NONROAD INTERNAL COMBUSTION (IC) ENGINE:**
- a.** Equipment that meets the following requirements are nonroad IC engines:

- (1) An internal combustion engine that is (or will be) used in or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes, and bulldozers); or
- (2) An internal combustion engine that is (or will be) used in or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); or
- (3) An internal combustion engine that by itself or in or on a piece of equipment is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include but are not limited to, wheels, skids, carrying handles, dollies, trailers, or platforms.

b. The following are not nonroad IC engines:

- (1) An engine used to propel a motor vehicle, an aircraft, or equipment used solely for competition; or
- (2) An engine regulated by a federal New Source Performance Standard promulgated under Section 111 of the Act; or
- (3) An engine otherwise included in Section 200.81(a)(3) of this rule that remains or will remain at a location for more than 12 consecutive months. Any engine (or engines) that replace(s) an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period. This paragraph does not apply to an engine after the engine is removed from the location.
- (4) An engine otherwise included in Section 200.81(a)(3) of this rule that remains or will remain at a seasonal source during the full annual operating period of the seasonal source. Any engine (or engines) that replace(s) an engine at a seasonal source and is intended to perform the same or similar function as the engine replace will be included in calculating the consecutive time period. This paragraph does not apply to an engine after the engine is removed from the location.

200.84 OFF-SPECIFICATION USED OIL: Used oil which exceeds any of the allowable levels in 40 CFR 279.11.

200.85 ON-SPECIFICATION USED OIL: Used oil that is not off-specification used oil.

200.86 OPEN OUTDOOR FIRE: Any combustion of any type of material outdoors, where the products of combustion are not directed through a flue.

200.87 OPERATION: Any physical action resulting in a change in the location, form, or physical properties of a material, or any chemical action resulting in a change in the chemical composition or properties of a material.

- 200.88 ORGANIC COMPOUND:** Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.
- 200.89 ORGANIC LIQUID:** Any organic compound which exists as a liquid under any actual conditions of use, transport, or storage. For the purposes of these rules, gasoline is not considered an organic liquid.
- 200.90 ORGANIC SOLVENT:** Any liquid composed wholly or in part of a carbon compound which is capable of dissolving another substance or carrying it in suspension.
- 200.91 OWNER OR OPERATOR:** Any person who owns, leases, operates, controls, or supervises an affected facility or a stationary source.
- 200.92 PARTICULATE MATTER:** Any material, except condensed water containing no more than analytical trace amounts of other chemical elements or compounds, which has a nominal aerodynamic diameter smaller than 100 microns (micrometers) and which exists in a finely divided form as a liquid or solid at actual conditions.
- 200.93 PERMITTING AUTHORITY:** The MCAQD or a County department, agency, or air pollution control district that is charged with enforcing a permit program adopted under A.R.S. § 49-480, Subsection A.
- 200.94 PERMITTING THRESHOLD:** The stationary source emission rate at which a permit or permit revision is required. For each regulated air pollutant, the following emission thresholds apply:

Pollutant	Potential to Emit Emission Rate in Tons Per Year (TPY)
PM _{2.5}	0.5 (Primary emissions only; levels for precursors are set below)
PM ₁₀	0.5
SO ₂	1.0
NO _x	1.0
VOC	0.5
CO	1.0
Pb	0.3
Single HAP (other than Pb)	0.5
Total HAPs	1.0
Any other regulated air pollutant	1.0

- 200.95 PERSON:** Any individual, public or private corporation, company, partnership, firm, association or society of persons, the Federal Government and any of its departments or agencies, or the State and any of its agencies, departments or political subdivisions, as well as a natural person.
- 200.96 PLANNING AGENCY:** An organization designated by the governor pursuant to 42 U.S.C. 7504.

- 200.97 PLUME:** Visible effluent.
- 200.98 PM_{2.5}:** Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 microns (micrometers), as measured by the applicable State and Federal Reference Test Methods.
- 200.99 PM₁₀:** Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns (micrometers), as measured by the applicable State and Federal Reference Test Methods.
- 200.100 POLLUTANT:** An air contaminant the emissions or ambient concentration of which is regulated under these rules.
- 200.101 PORTABLE SOURCE:** Any stationary source that is capable of being transported and operated in more than one county of this state.
- 200.102 POTENTIAL TO EMIT (PTE):** The maximum capacity of a stationary source to emit pollutants, excluding secondary emissions, under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design, if the limitation or the effect it would have on emissions is legally and practically enforceable by any rule, ordinance, order or permit adopted or issued under A.R.S. Title 49, Chapter 3 or the state implementation plan.
- 200.103 PROCESS:** One or more operations, including equipment and technology, used in the production of good or services or the control of by-product or waste.
- 200.104 PROPOSED PERMIT:** The version of a permit for which the Control Officer offers public participation under Rule 210-Title V Permit Provisions or Rule 220-Non-Title V Permit Provisions of these rules or offers affected State review under Rule 210-Title V Permit Provisions of these rules.
- 200.105 PROPOSED FINAL PERMIT / PROPOSED FINAL PERMIT REVISION:** The version of a Non-Title V permit or permit revision that the Control Officer proposes to issue in compliance with Rule 220-Non-Title V Permit Provisions of these rules or a Title V permit or permit revision that the Control Officer proposes to issue and forwards to the Administrator for review, in compliance with Rule 210-Title V Permit Provisions of these rules. A proposed final permit/proposed final permit revision constitutes a final and enforceable authorization to begin actual construction of, but not to operate, a new Title V source or a modification to a Title V source.
- 200.106 PUBLIC NOTICE THRESHOLD:** For each regulated air pollutant, the following emission thresholds apply:

Pollutant	Public Notice Threshold TPY(New or Permit Renewals PTE)	Public Notice Threshold TPY(PTE to PTE Emission Increase)
VOC	25	25
NO _x	25	25
SO ₂	25	25
PM ₁₀	7.5	7.5
PM _{2.5}	5.0	5.0
	(primary emissions only; levels for precursors are set above)	
CO	50	50
Pb	0.3	0.3
Any Single HAP	5.0	5.0
Total HAPs	12.5	12.5

200.107 QUANTIFIABLE: With respect to emissions, including the emissions involved in equivalent emission limits and emission trades, capable of being measured or otherwise determined in terms of quantity and assessed in terms of character. Quantification may be based on emission factors, stack tests, monitored values, operating rates and averaging times, materials used in a process or production, modeling, or other reasonable measurement practices.

200.108 REASONABLE FURTHER PROGRESS: The schedule of emission reductions defined within a nonattainment area plan as being necessary to come into compliance with a national ambient air quality standard by the primary standard attainment date.

200.109 REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT):

- a. For facilities subject to Regulation III (Control of Air Contaminants) of these rules, the emissions limitations that are applicable to an emission unit at the time the permit is issued.
- b. For facilities not subject to Regulation III (Control of Air Contaminants) of these rules, the lowest emission limitation that a particular source is capable of achieving by the application of control technology that is reasonably available considering technological and economic feasibility. Such technology may previously have been applied to a similar, but not necessarily identical, source category.
- c. RACT for a particular facility, other than a facility subject to Regulation III (Control of Air Contaminants) of these rules, is determined on a case-by-case basis, considering the technological feasibility and cost-effectiveness of the application of the control technology to the source category.

200.110 REFERENCE METHOD: Any of the methods of sampling and analyzing for an air pollutant as described in 40 CFR 50, Appendices A through K; 40 CFR 51, Appendix M; 40 CFR 52, Appendices D and E; 40 CFR 60, Appendices A through F; and 40 CFR 61, Appendices B and C.

200.111 REGULATED AIR POLLUTANT: Any of the following:

- a. Any conventional air pollutant.
- b. Any air contaminant that is subject to a standard promulgated under Section 111 (Standards of Performance for New Stationary Sources) of the Act or under Section 112 (National Emission Standards for Hazardous Air Pollutants) of the Act.
- c. Any Class I or II substance listed in Section 602 (Stratospheric Ozone Protection; Listing of Class I and Class II Substances) of the Act.
- d. For the purpose of this definition, greenhouse gases shall not be considered a regulated air pollutant.

200.112 REGULATED MINOR NSR POLLUTANT: Any pollutant for which a national ambient air quality standard has been promulgated and the following precursors for such pollutants:

- a. VOC and nitrogen oxides as precursors to ozone.
- b. Nitrogen oxides and sulfur dioxide as precursors to PM_{2.5}. If a PM_{2.5} nonattainment area is designated in Maricopa County, then VOC and ammonia are also PM_{2.5} precursors in that nonattainment area.

200.113 REGULATED NSR POLLUTANT: A pollutant as defined in Rule 240-Federal Major New Source Review (NSR) of these rules.

200.114 REGULATORY REQUIREMENTS: All applicable requirements, MCAQD rules, and all State requirements pertaining to the regulation of air contaminants.

200.115 REPLICABLE: With respect to methods or procedures sufficiently unambiguous such that the same or equivalent results would be obtained by the application of the method or procedure by different users.

200.116 RESPONSIBLE OFFICIAL: One of the following:

- a. For a corporation: A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either;
 - (1) The sources employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
 - (2) The delegation of authority to such representatives is approved in advance by the permitting authority;

- b. For a partnership or sole proprietorship: A general partner or the proprietor, respectively;
- c. For a municipality, State, Federal, or other public agency: Either a principal executive officer or ranking elected official. For the purpose of this rule, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator); or
- d. For affected sources:
 - (1) The designated representative insofar as actions, standards, requirements, or prohibitions under Title IV-Acid Deposition Control of the Act or the regulations promulgated thereunder are concerned; and
 - (2) The designated representative for any other purposes under 40 CFR Part 70.

200.117 SCHEDULED MAINTENANCE: Preventive maintenance undertaken in order to avoid a potential breakdown or upset of air pollution control equipment.

200.118 SCREENING MODEL: Air dispersion modeling performed with screening techniques in accordance with 40 CFR 51, Appendix W as of July 1, 2019 (and no future amendments or additions).

200.119 SEASONAL SOURCE: A stationary source that remains in a single location on a permanent basis, i.e., at least two years, and that operates at that single location approximately three months (or more) each year.

200.120 SECTION 302(J) CATEGORY:

- a. Any of the classes of sources listed in the definition of “categorical sources” of this rule; or
- b. Any category of affected facility which, as of August 7, 1980, is being regulated under Sections 111 or 112 of the Act.

200.121 SIGNIFICANT:

- a. In reference to a significant emissions increase, a significant net emissions increase, or a stationary source’s potential to emit:
 - (1) A rate of emissions of conventional pollutants that would equal or exceed any of the following:

Pollutant	Emissions Rate (TPY)
Carbon Monoxide	100
Nitrogen Oxides	40
Sulfur Dioxide	40
PM ₁₀	15

PM _{2.5}	10 tpy of primary PM _{2.5} emissions; 40 tpy of sulfur dioxide emissions; 40 tpy of nitrogen oxide emissions.
Ozone	40 tpy of VOC or nitrogen oxides
Lead	0.6

(2) For purposes of determining the applicability of Rule 220 of these rules, a rate of emissions of non-conventional pollutants that would equal or exceed any of the following:

Pollutant	Emissions Rate (TPY)
Particulate Matter	25
Fluorides	3
Sulfuric Acid Mist	7
Hydrogen Sulfide (H ₂ S)	10
Total Reduced Sulfur (including hydrogen sulfide)	10
Reduced Sulfur Compounds (including hydrogen sulfide)	10
Municipal waste combustor organics (measured as total tetra-through-octa-chlorinated: dibenzo-p-dioxins and dibenzofurans)	3.5 x 10 ⁻⁶
Municipal waste combustor metals (measured as particulate matter)	15
Municipal waste combustor acid gases (measured as sulfur dioxide and hydrogen chloride)	40
Municipal solid waste landfill emissions (measured as nonmethane organic compounds)	50
Any pollutant subject to regulation not specifically listed in this section of this definition or in Section 200.119 (a)(1) of this rule	Any emission rate

- b. In ozone nonattainment areas classified as serious or severe, the emission rate for nitrogen oxides or VOC determined under Rule 240-Federal Major New Source Review (NSR) of these rules.
- c. In a carbon monoxide nonattainment area classified as serious, a rate of emissions that would equal or exceed 50 tons per year, if the Administrator has determined that stationary sources contribute significantly to carbon monoxide levels in that area.
- d. In PM_{2.5} nonattainment areas, an emission rate that would equal or exceed 40 tons per year of VOC or ammonia as precursors of PM_{2.5}.
- e. Notwithstanding the emission rates listed in Section 200.119(a)(1) or (2) of this rule, for purposes of determining the applicability of Rule 240, Section 305 of this rule, any emissions rate or any net emissions increase associated with a major source or major modification, which would be constructed within 10 kilometers (6.2 miles) of a Class I area and have an impact on the ambient air quality of such area equal to or greater than 1 microgram/cubic meter (µg/m³) (24-hour average).

200.122 SMOKE: Particulate matter resulting from incomplete combustion.

- 200.123 SOLVENT-BORNE COATING MATERIAL:** Any liquid coating-material in which the solvent is primarily or solely a VOC. For the purpose of this definition, “primarily” means that of the total solvent mass that evaporates from the coating, the VOC portion weighs more than the non-VOC portion.
- 200.124 SOOT:** The carbonaceous particulate product of incomplete combustion which may be a component of smoke.
- 200.125 SOURCE OR STATIONARY SOURCE:** Any building, structure, facility, or installation, that emits or may emit any regulated air pollutant, that may cause or contribute to air pollution or the use of which may eliminate, reduce or control the emission of air pollution.
- 200.126 SPECIAL INSPECTION WARRANT:** An order, in writing, issued in the name of the State of Arizona, signed by a magistrate, directed to the Control Officer or his deputies authorizing him to enter into or upon public or private property for the purpose of making an inspection authorized by law.
- 200.127 STANDARD CONDITIONS:** A temperature of 293K (68 degrees Fahrenheit or 20 degrees Celsius) and a pressure of 101.3 kilopascals (29.92 in. Hg or 1013.25 mb). When applicable, all analyses and tests shall be calculated and reported at standard gas temperatures and pressure values.
- 200.128 STATE IMPLEMENTATION PLAN (SIP):** The accumulated record of enforceable air pollution control measures, programs and plans adopted by the Director and submitted to and approved by the Administrator pursuant to 42 U.S.C. 7410.
- 200.129 SUBCONTRACTOR:** Any person, firm, partnership, corporation, association, or other organization that conducts work at a site under contract with or under the control or supervision of the owner and/or operator or another subcontractor.
- 200.130 SYNTHETIC MINOR:** Any source whose maximum capacity to emit a pollutant under its physical and operational design would exceed the major source threshold levels but is restricted by an enforceable emissions limitation that prevents such source from exceeding major source threshold levels.
- 200.131 TITLE V:** Title V of the Federal Clean Air Act as amended in 1990 and the 40 CFR Part 70 regulations adopted to implement the Act.
- 200.132 TOTAL REDUCED SULFUR (TRS):** The sum of the sulfur compounds, primarily hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide, that are released during kraft pulping and other operations and measured by Method 16 in 40 CFR 60, Appendix A.
- 200.133 TRADE SECRETS:** Information to which all of the following apply:
- a. A person has taken reasonable measures to protect from disclosure and the person intends to continue to take such measures.

- b. The information is not, and has not been, reasonably obtainable without the person's consent by other persons, other than governmental bodies, by use of legitimate means, other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding.
- c. No statute, including A.R.S. § 49-487, specifically requires disclosure of the information to the public.
- d. The person has satisfactorily shown that disclosure of the information is likely to cause substantial harm to the business's competitive position.

200.134 TRIVIAL ACTIVITY: For the purpose of this definition, a trivial activity shall be any activity, process, or emissions unit that has extremely low emissions. No activity, process, or emissions unit that is conducted as part of a manufacturing process or is related to the source's primary business activity shall be considered trivial. Trivial activities are listed below.

- a. **Mobile Source Combustion Activities:** Combustion emissions from propulsion of mobile sources, except for vessel emissions from outer continental shelf sources.
- b. **Surface Coating and Printing Equipment:** Equipment used for surface coating, painting, dipping or spraying operations, except those that will emit volatile organic compounds (VOC) or hazardous air pollutants (HAPs).
- c. **Cleaning Equipment:** Laundry activities, except for dry-cleaning and steam boilers.
- d. **Internal Combustion Equipment:**
 - (1) Internal combustion (IC) engines used for landscaping purposes.
 - (2) Emergency (backup) electrical generators at residential locations.
- e. **Testing and Monitoring Equipment:**
 - (1) Routine calibration and maintenance of laboratory equipment or other analytical instruments.
 - (2) Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
 - (3) Hydraulic and hydrostatic testing equipment.
 - (4) Environmental chambers not using HAP gases.
 - (5) Shock chambers.
 - (6) Humidity chambers.
 - (7) Solar simulators.

(8) Vents from continuous emissions monitors and other analyzers.

f. Office Equipment:

- (1) Air-conditioning units used for human comfort that do not have applicable requirements under Title VI of the Act.
- (2) Ventilating units used for human comfort that do not exhaust air pollutants into the ambient air from any manufacturing/industrial or commercial process.
- (3) Consumer use of office equipment and products, not including printers or businesses primarily involved in photographic reproduction.
- (4) Bathroom/toilet vent emissions.
- (5) Tobacco smoking rooms and areas.
- (6) Consumer use of paper trimmers/binders.

g. Repair and Maintenance:

- (1) Janitorial services and consumer use of janitorial products.
- (2) Plant maintenance and upkeep activities (e.g., groundskeeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots), provided these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and not otherwise triggering a permit modification. Cleaning and painting activities that are part of plant maintenance qualify only if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners or operators must still get a permit, if otherwise required.
- (3) Repair or maintenance shop activities not related to the source's primary business activity (excluding emissions from surface coating or degreasing (solvent metal cleaning) activities) and not otherwise triggering a permit modification.

h. Storage and Distribution:

- (1) Storage tanks, vessels, containers holding or storing liquid substances that will not emit any VOC or HAPs.
- (2) Demineralized water tanks and demineralizer vents.
- (3) Boiler water treatment operations, not including cooling towers.

i. Hand Operated Equipment:

- (1) Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning, or machining wood, metal, or plastic.
- (2) Hand-held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation.

(3) Portable electrical generators that can be moved by hand from one location to another. "Moved by hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device.

(4) Air compressors and pneumatically operated equipment, including hand tools.

j. **Food Equipment:** Non-commercial food preparation.

k. **Water and Wastewater Treatment:**

(1) Process water filtration systems and demineralizers.

(2) Oxygen scavenging (de-aeration) of water.

l. **Emergency Equipment:**

(1) Fire suppression systems.

(2) Emergency road flares.

200.135 UNCLASSIFIED AREA: An area which the Administrator, because of lack of adequate data, is unable to classify as an attainment or nonattainment area for a specific pollutant. For purposes of these rules, unclassified areas are to be treated as attainment areas.

200.136 USED OIL: Includes oil that has been contaminated as a result of handling, transportation or storage.

200.137 VAPOR: The gaseous form of a substance normally occurring in a liquid or solid state.

200.138 VISIBLE EMISSIONS: Any emissions which are visually detectable without the aid of instruments and which contain particulate matter.

200.139 VOLATILE ORGANIC COMPOUND (VOC): Any organic compound which participates in atmospheric photochemical reactions, except non-precursor organic compounds.

200.140 YEAR: For the purpose of determining emissions of a regulated air pollutant, a year shall be defined as any 12-consecutive month period.

SECTION 300 – STANDARDS

301 AIR POLLUTION PROHIBITED: No person shall discharge from any source whatever into the atmosphere regulated air pollutants which exceed in quantity or concentration that specified and allowed in these rules, the A.A.C. or A.R.S., or which cause damage to property, or unreasonably interfere with the comfortable enjoyment of life or property of a substantial part of a community, or obscure visibility, or which in any way degrade the quality of the ambient air below the standards established by the Board of Supervisors or the Director.

302 APPLICABILITY OF MULTIPLE RULES: Whenever more than one standard in this rule applies to any source or whenever a standard in this rule and a standard in the Maricopa

County Air Pollution Control Regulations Regulation III (Control of Air Contaminants) applies to any source, the rule or combination of rules resulting in the lowest rate or lowest concentration of regulated air pollutants released to the atmosphere shall apply, unless otherwise specifically exempted or designated.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS: Any application form or report submitted under these rules shall contain certification by a responsible official of truth, accuracy, and completeness of the application form or report as of the time of submittal. This certification and any other certification required under these rules shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

402 CONFIDENTIALITY OF INFORMATION:

402.1 The Control Officer shall make all permits, including all elements required to be in the permit under Rule 210-Title V Permit Provisions of these rules and Rule 220-Non-Title V Permit Provisions of these rules, available to the public.

402.2 Any records, reports, or information obtained from any person under these rules shall be available to the public, unless the Control Officer has notified the person in writing as specified in Section 402.3 of this rule and unless a person:

- a.** Precisely identifies the information in the permit(s), records, or reports, which is considered confidential.
- b.** Provides sufficient supporting information to allow the Control Officer to evaluate whether such information satisfies the requirements related to trade secrets as defined in this rule.

402.3 Within 30 days of receipt of a notice of confidentiality that complies with Section 402.2 of this rule, the Control Officer shall make a determination as to whether the information satisfies the requirements for trade secrets as defined in this rule and so notify the applicant in writing. If the Control Officer agrees with the applicant that the information covered by the notice of confidentiality satisfies the statutory requirements, the Control Officer shall include a notice in the administrative record of the permit application that certain information has been considered confidential.

402.4 A claim of confidentiality shall not excuse a person from providing any and all information required or requested by the Control Officer.

402.5 A claim of confidentiality shall not be a defense for failure to provide such information.

403 COMPLIANCE SCHEDULE FOR NEWLY AMENDED RULE PROVISIONS: Unless otherwise specified, the newly amended provisions of a rule shall become effective upon the adoption date of the rule. An owner, operator, or person subject to the newly amended rule shall submit a permit application and associated plans as necessary or a permit revision

application and associated plans as necessary within 90 days of the adoption date of the newly amended rule.

SECTION 500 – MONITORING AND RECORDS

- 501 REPORTING REQUIREMENTS:** The owner or operator of any air pollution source shall maintain records of all emissions testing and monitoring, records detailing all malfunctions which may cause any applicable emission limitation to be exceeded, records detailing the implementation of approved control plans and compliance schedules, records required as a condition of any permit, records of materials used or produced, and any other records relating to the emission of air contaminants which may be requested by the Control Officer.
- 502 DATA REPORTING:** When requested by the Control Officer, a person shall furnish to the MCAQD information to locate and classify air contaminant sources according to type, level, duration, frequency, and other characteristics of emissions and such other information as may be necessary. This information shall be sufficient to evaluate the effect on air quality and compliance with these rules. The owner or operator of a source requested to submit information under Section 501 of this rule may subsequently be required to submit annually, or at such intervals specified by the Control Officer, reports detailing any changes in the nature of the source since the previous report and the total annual quantities of materials used or air contaminants emitted.
- 503 EMISSION STATEMENTS REQUIRED AS STATED IN THE ACT:** The owner or operator of any source which emits or may emit oxides of nitrogen (NO_x) or volatile organic compounds (VOC) shall provide the Control Officer with an emission statement annually, in such form as the Control Officer prescribes, showing measured actual emissions or estimated actual emissions of NO_x and VOC from that source. At a minimum, the emission statement shall contain all information required by the Air Emissions Reporting Requirements in 40 CFR 51, Subpart A, Appendix A, Table 2A. The statement shall also contain a certification by a responsible official of the company that the information contained in the statement is accurate to the best knowledge of the individual certifying the statement. Statements shall be submitted annually to the MCAQD. The Control Officer may waive this requirement for the owner or operator of any source which emits less than 25 tons per year of oxides of nitrogen or volatile organic compounds with an approved emission inventory for sources based on AP-42 or other methodologies approved by the Administrator.
- 504 RETENTION OF RECORDS:** Information and records required by applicable requirements and copies of summarizing reports recorded by the owner or operator and submitted to the Control Officer shall be retained by the owner or operator for five years after the date on which the information is recorded or the report is submitted. Non-Title V sources may retain such information, records, and reports for less than five years, if otherwise allowed by these rules.
- 505 ANNUAL EMISSIONS INVENTORY REPORT:**

- 505.1** Upon request of the Control Officer and as directed by the Control Officer, the owner or operator of a stationary source shall complete and shall submit to the Control Officer an annual emissions inventory report. The report is due by April 30, or 90 days after the Control Officer enables electronic emissions reporting, whichever occurs later. These requirements apply whether or not a permit has been issued and whether or not a permit application has been filed.
- 505.2** The annual emissions inventory report shall be in the format provided by the Control Officer.
- 505.3** The Control Officer may require submittal of supplemental emissions inventory information forms for air contaminants under A.R.S. § 49-476.01 and A.R.S. § 49-480.03.



**Maricopa County
Air Quality Department
Planning and Analysis Division
Maricopa.gov/AQ**

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION II – PERMITS AND FEES**

**RULE 200
PERMIT REQUIREMENTS**

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION II – PERMITS AND FEES**

**RULE 200
PERMIT REQUIREMENTS**

SECTION 100 – GENERAL

- 101 PURPOSE:** To provide an orderly procedure for the review of new or modified sources through the issuance of permits.
- 102 APPLICABILITY:** Except as provided in Section 305 of this rule, this rule applies to each source requiring a permit or permit revision, as provided in Section 301 of 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.

SECTION 300 – STANDARDS

- 301 PERMITS REQUIRED:** Except as otherwise provided in these rules, an owner or operator shall not begin actual construction of, operate, or make a modification to any stationary source that emits or has the potential to emit any regulated air pollutant greater than or equal to the stationary source permitting thresholds defined in Rule 100 of these rules, without first obtaining a permit or permit revision from the Control Officer. The Maricopa County Air Quality Department issues the following types of permits: Title V permits, Non-Title V permits, General permits, Dust Control permits, and Permits to Burn. The standards and/or requirements for these permits are described in Sections 302, 303, 304, 306, and 308 of this rule. Additional standards, administrative requirements, and monitoring and records requirements for some of these permits are described in individual rules, as specified in Sections 302, 303, 304, 306, and 308 of this rule.
- 302 TITLE V PERMIT:**
- 302.1** A Title V final permit or, in the case of an existing permitted source, a Title V final permit revision shall be required for an owner or operator to begin actual construction of, to modify, or to operate any of the following:
- a. Any major source as defined in Rule 100-General Provisions and Definitions of these rules.
 - b. Any solid waste incineration unit required to obtain a permit pursuant to Section 129(e) of the Act.
 - c. Any affected source as defined in Rule 100 of these rules.

- d. Any stationary source in a source category designated by the Administrator pursuant to 40 CFR 70.3 and adopted by the Board of Supervisors by rule.

302.2 Notwithstanding the requirements of Sections 301 and 302 of this rule, an owner or operator may begin actual construction, but not operation, of a source requiring a Title V final permit or Title V final permit revision upon the Control Officer’s issuance of the proposed final permit or proposed final permit revision.

303 NON-TITLE V PERMIT: Unless a Title V final permit or Title V final permit revision is required, a Non-Title V final permit or, in the case of an existing permitted source, a Non-Title V final permit revision shall be required for:

303.1 An owner or operator to begin actual construction of, modify, or operate any stationary source that emits or has the potential to emit any regulated air pollutant in an amount greater than or equal to the following stationary source permitting thresholds:

Pollutant	Potential to Emit Emission Rate in Tons Per Year (TPY)
PM _{2.5} (primary emissions only; levels for precursors are set below)	0.5
PM ₁₀	0.5
SO ₂	1.0
NO _x	1.0
VOC	0.5
CO	1.0
Pb	0.3
Single HAP (other than Pb)	0.5
Total HAPs	1.0
Any other regulated air pollutant	1.0

303.2 An owner or operator to begin actual construction of, modify, or operate any of the following:

- a. Any stationary source that is subject to a standard, limitation or other requirement under Section 111 of the Act. However, a source that is subject to the standards in Sections 303.2(a)(1) or (2) of this rule and has a potential to emit less than the permitting thresholds in Section 303.1 of this rule is not required to obtain a Non-Title V permit.
 - (1) 40 CFR 60, Subpart IIII (Stationary Compression Ignition Internal Combustion Engines).
 - (2) 40 CFR 60, Subpart JJJJ (Stationary Spark Ignition Internal Combustion Engines).
- b. Any stationary source, including an area source, that is subject to a standard, limitation or other requirement under Section 112 of the Act. However, a source

that is subject to the standards under Section 112(r) of the Act or a source that is subject to the standards in Sections 303.2(b)(1) through (5) of this rule and has a potential to emit less than the permitting thresholds in Section 303.1 of this rule is not required to obtain a Non-Title V permit.

- (1) 40 CFR 63, Subpart WWWW (Ethylene Oxide Sterilizers).
- (2) 40 CFR 63, Subpart HHHHHH (Paint Stripping and Miscellaneous Surface Coating Operations).
- (3) 40 CFR 63, Subpart ZZZZ (Reciprocating Internal Combustion Engines).
- (4) 40 CFR 63, Subpart CCCCCC (Gasoline Distribution).
- (5) 40 CFR 63, Subpart JJJJJJ (Industrial, Commercial, and Institutional Boilers Area Sources).

304 GENERAL PERMIT: An owner or operator of a source, which is a member of a facility class regulated by a General permit developed and issued pursuant to Rule 230-General Permits of these rules, may apply for an authority to operate under the General permit in lieu of applying for an individual source permit.

305 EXEMPTIONS:

305.1 The following sources shall not require a permit, unless the source is a major source or unless operation without a permit would result in a violation of the Act:

- a. Sources subject to 40 CFR 60, Subpart AAA, Standards of Performance for New Residential Wood Heaters.
- b. Sources and source categories that would be required to obtain a permit solely because they are subject to 40 CFR 61.145 or 40 CFR 61.150.

305.2 The following activities or equipment shall not require a permit. Any activity that is exempt from obtaining a permit shall still comply with all other applicable requirements. As applicable, sufficient records based on throughput or hours of operation shall be maintained to substantiate the applicability of any exemption.

- a. Trivial activities, as defined in Rule 100-General Provisions and Definitions of these rules
- b. Insignificant activities, as defined in Rule 100-General Provisions and Definitions of these rules
- c. Application equipment and processes used exclusively to apply coatings to stationary structures and/or their appurtenances at the site of installation, to portable buildings including mobile homes at the site of installation, to pavement or to curbs, excluding asphalt kettles.
- d. Flame cultivation in agricultural activities, provided all of the following provisions are met:
 - (1) A flame is used to expose weeds to 2000°F for approximately 0.1 second to vaporize the water in the plant cells destroying the photosynthesis process; the process is not intended to burn the plant material.

- (2) The equipment has an aggregated input capacity of less than 2,000,000 Btu per hour.
- (3) The fuel used is liquefied propane.
- (4) The resulting flame desiccates and does not combust the plant material without continued application of the flame.
- e. Any natural gas and/or liquefied petroleum gas-fired emission unit rated less than 300,000 Btu per hour.
- f. Any internal combustion (IC) engine operated as a nonroad IC engine.
- g. Hydroblasting/pressure washing.
- h. Any laboratory fume hood or vent provided such equipment is used exclusively for the purpose of teaching, research or quality control.
- i. Fugitive emissions from agricultural equipment used in normal farm operations. For the purposes of this exemption, agricultural equipment used in normal farm operations shall not include:
 - (1) Equipment that would otherwise require a permit under Title V of the Act; or
 - (2) Equipment that is subject to a standard under 40 CFR parts 60, 61 or 63.

306 DUST CONTROL PERMIT: A Dust Control permit shall be required before a person, including but not limited to, the property owner, lessee, developer, responsible official, Dust Control permit applicant (who may also be the responsible party contracting to do the work), general contractor, prime contractor, supervisor, management company, or any person who owns, leases, operates, controls, or supervises a dust-generating operation subject to the requirements of Rule 310 of these rules, causes, commences, suffers, allows, or engages in any dust-generating operation that disturbs a total surface area of 0.10 acre (4,356 square feet) or more. The provisions of Rule 310 of these rules shall apply to Dust Control permits.

307 SUBCONTRACTOR REGISTRATION:

307.1 A subcontractor who is engaged in dust-generating operations at a site that is subject to a Dust Control permit issued by the Control Officer and that requires control of PM₁₀ emissions from dust-generating operations shall register with the Control Officer by submitting information in the manner prescribed by the Control Officer. The Control Officer shall issue a registration number after payment of the fee. The Control Officer may establish and assess a fee for the registration based on the total cost of processing the registration and issuance of a registration number.

307.2 The subcontractor shall have its registration number readily accessible on-site while conducting any dust-generating operations. The subcontractor's registration number must be visible and readable by the public without having to be asked by the public (e.g., included/posted in a sign that is visible on the subcontractor's vehicle or equipment, included/posted on a sign that is visible in the window of the subcontractor's vehicle or equipment, or included/posted on a sign where the subcontractor is working on the site).

308 PERMIT TO BURN: A permit is required for any open outdoor fire authorized under the exceptions in A.R.S. § 49-501 or Rule 314 of these rules.

309 STANDARDS FOR APPLICATIONS: All permit applications shall be filed in the manner and form prescribed by the Control Officer. The application shall contain all the information necessary to enable the Control Officer to make the determination to grant or to deny a permit or permit revision.

309.1 Insignificant Activities: Insignificant activities shall be addressed as follows in an application:

a. For Title V Permit Applications:

- (1) An owner or operator of a Title V source shall , in its permit application, list and generally group insignificant activities as defined in Rule 100-General Provisions and Definitions of these rules. The permit application need not provide emissions data regarding insignificant activities, except as necessary to comply with Section 309.1(a)(3) of this rule.
- (2) An owner or operator of a Title V source may request approval for the classification of an activity as insignificant by including such request in its permit application.
- (3) An owner or operator of a Title V source shall include information in its permit application regarding insignificant activities, if such information is needed to determine: (1) the applicability of or to impose any applicable requirement; (2) whether the source is in compliance with applicable requirements; or (3) the fee amount required under these rules. In such cases, emissions calculations or other necessary information regarding the insignificant activities shall be included in the application.

b. For Non-Title V Permit Applications:

- (1) An owner or operator of a Non-Title V source shall list in its permit application insignificant activities as defined in Rule 100-General Provisions and Definitions of these rules. The permit application need not provide emissions data, except as necessary to comply with Sections 309.1(b)(2) and (3) of this rule.
- (2) If a Non-Title V source's potential emissions are approaching an applicable requirement threshold, including but not limited to, best available control technology (BACT) requirements or major source status, then the owner or operator of such Non-Title V source may be required to include, in its permit application, a description of its insignificant activities and emissions data for such insignificant activities.
- (3) An owner or operator of a Non-Title V source shall include information in its permit application regarding insignificant activities, if such information is needed to determine: (1) the applicability of or to impose any applicable requirement; (2) whether the source is in compliance with applicable requirements; or (3) the fee amount required under these rules. In such cases, emissions calculations or other necessary information regarding the insignificant activities shall be included in the application.

309.2 Trivial Activities: Trivial activities as defined in Rule 100-General Provisions and Definitions of these rules may be omitted from Title V permit applications and from Non-Title V permit applications.

310 PERMIT CONDITIONS: The Control Officer may impose any permit conditions that are necessary to ensure compliance with federal laws, Arizona laws, or these rules.

310.1 The Control Officer may require, as specified in Section 310.2 or Section 310.5 of this rule, any source of regulated air pollutants to monitor, sample, or perform other studies to quantify emissions of regulated air pollutants or levels of air pollution that may reasonably be attributable to that source, if the Control Officer:

- a. Determines that monitoring, sampling, or other studies are necessary to determine the effects of the source on levels of air pollution; or
- b. Has reasonable cause to believe a violation of these rules or a permit issued pursuant to this rule has been committed; or
- c. Determines that studies or data are necessary to accomplish the purposes of this rule and that monitoring, sampling, or other studies by the source are necessary in order to assess the impact of the source on the emission of regulated air pollutants.

310.2 The Control Officer may require a source of air contaminants, by permit or order, to perform monitoring, sampling, or other quantification of its emissions or air pollution that may reasonably be attributed to such a source. Before requiring such monitoring, sampling, or other quantification by permit or order, the Control Officer shall consider the relative cost and accuracy of any alternatives which may be reasonable under the circumstances such as emission factors, modeling, mass balance analyses, or emissions projections. The Control Officer may require such monitoring, sampling, or other quantification by permit or order if the Control Officer determines in writing that all of the following conditions are met:

- a. The actual or potential emissions of air pollution may adversely affect public health or the environment.
- b. An adequate scientific basis for the monitoring, sampling, or quantification method exists.
- c. The monitoring, sampling, or quantification method is technically feasible for the subject contaminant and the source.
- d. The monitoring, sampling, or quantification method is reasonably accurate.
- e. The cost of the method is reasonable in light of the use to be made of the data.

310.3 The issuance of a permit or permit revision under this rule shall not relieve the owner or operator of the responsibility to comply fully with applicable provisions of the State Implementation Plan (SIP) and any other requirements under local, State, or Federal law.

310.4 The permittee shall comply with all conditions of the permit, including all applicable requirements of Arizona air quality statutes and the air quality rules. Compliance with permit terms and conditions does not relieve, modify, or otherwise affect the

permittee's duty to comply with all applicable requirements of Arizona air quality statutes and the Maricopa County Air Pollution Control Regulations. Any permit non-compliance is grounds for enforcement action; for a permit termination, revocation, and reissuance or revision; or for permit denial. Non-compliance with any federally enforceable requirement in a permit constitutes a violation of the Act.

310.5 Orders issued or permit conditions imposed pursuant to this rule shall be appealable to the hearing board in the same manner as that prescribed for orders of abatement in A.R.S. § 49-489 and A.R.S. § 49-490 and for permit conditions in A.R.S. § 49-482.

311 PROHIBITION – PERMIT MODIFICATION: A person shall not willfully deface, alter, forge, counterfeit, or falsify any permit issued under the provisions of these rules.

312 PERMIT POSTING REQUIRED: Any person who has been granted a permit shall keep a complete permit clearly visible and accessible on the site where the equipment is installed. All equipment covered by the permit shall be listed in the permit by a serial number or other equipment identification symbol and shall be identified on a plant diagram.

313 ACCELERATED PERMITTING:

313.1 Notwithstanding any other provisions of these rules, the following qualify a source to submit a request for accelerated permit processing: (1) an application for a Title V permit or for a Non-Title V permit; (2) any permit revision; and (3) any authority to operate under a General permit. Such a request-submittal shall be submitted in writing to the Control Officer at least 30 days in advance of filing the application and shall be accompanied by fees as described in Rule 280 of these rules.

313.2 When an applicant has requested accelerated permit processing, the Control Officer shall, to the extent practicable, undertake to process the permit or permit revision in accordance with the following schedule:

- a.** For applications for initial Title V and Non-Title V permits under Rules 210 and 220 of these rules, for significant permit revisions under Rule 210 of these rules, or for non-minor permit revisions under Rule 220 of these rules, final action on the permit or on the permit revision: Within 90 days after the Control Officer determines that the application is complete for a Non-Title V source and within 120 days after the Control Officer determines that the application is complete for a Title V source. Except for a new major source or a major modification subject to the requirements of Rule 240 of these rules, an application for a new permit, a significant permit revision, or a permit renewal shall be deemed to be complete unless the Control Officer notifies the applicant by certified mail within 30 days of receipt of the application that the application is not complete.
- b.** For applications for authority to operate under a General permit under Rule 230 of these rules, final action: Within 30 days after receipt of the application.
- c.** For minor permit revisions governed by Rule 210 and Rule 220 of these rules, final action: Within 60 days after receipt of the application.

313.3 Before issuing a permit or permit revision pursuant to this section, the applicant shall pay to the Control Officer all fees due as described in Rule 280 of these rules. Nothing in this section shall affect the public participation requirements of Rules 210

or 220 of these rules, or EPA and affected state review as required under Rule 210 of these rules.

314 STACK HEIGHT PROVISIONS: The degree of emission limitation required of any source of any pollutant shall not be affected by so much of any source's stack height that exceeds good engineering practice or by any other dispersion technique, except as provided in 40 CFR 51.118(b) . For the purposes of Section 314 of this rule, the definition in 40 CFR 51.100 shall apply.

314.1 Before the Control Officer issues a permit or permit revision under this rule to a source with a stack height which exceeds good engineering practice (GEP) stack height, the Control Officer shall notify the public of the availability of the demonstration study and provide opportunity for a public hearing.

314.2 Any field study or fluid model used to demonstrate GEP stack height and any determination of excessive concentration must be approved by the EPA and the Control Officer prior to any emission limit being established.

314.3 The provisions of Section 314 of this rule do not restrict, in any manner, the actual stack height of any stationary source or facility.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 APPROVAL OR DENIAL OF PERMIT OR PERMIT REVISION:

401.1 The Control Officer shall deny a permit or revision if the applicant does not demonstrate that every such source for which a permit or permit revision is sought is so designed, controlled, or equipped with such air pollution control equipment that the source may be expected to operate without emitting or without causing to be emitted air contaminants in violation of the provisions of these rules or applicable State Implementation Plan (SIP) plan requirements.

401.2 Prior to acting on an application for a permit, the Control Officer may require the applicant to provide and to maintain such devices and procedures as are necessary for sampling and for testing purposes in order to secure information that will disclose the nature, extent, quantity, or degree of air contaminants discharged into the atmosphere from the source described in the application. In the event of such a requirement, the Control Officer shall notify the applicant in writing of the type and characteristics of such devices and procedures.

401.3 In acting upon an application for a permit renewal, if the Control Officer finds that such source has not been constructed in accordance with any prior permit or permit revision issued pursuant to A.R.S. § 49-480.01, the Control Officer shall require the permittee to obtain a permit revision or shall deny the permit renewal. The Control Officer shall not accept any further application for a permit for such source so constructed until the Control Officer finds that such source has been reconstructed in accordance with a prior permit or permit revision, or until a revision to the permit has been obtained. The Control Officer may issue a permit with a compliance schedule for an existing source that is not in compliance with all applicable requirements at the time of permit issuance.

401.4 After a decision on a permit or on a permit revision, the Control Officer shall notify the applicant and any person who filed a comment on the permit pursuant to A.R.S. § 49-480 or on the permit revision pursuant to A.R.S. § 49-480.01 in writing of the decision, and if the permit is denied, the reasons for such denial. Service of this notification may be made in person or by first class mail. The Control Officer shall not accept a further application unless the applicant has corrected the circumstances giving rise to the objections as specified by the Control Officer as reasons for such denial.

**402 PERMIT REOPENINGS; REVOCATION AND REISSUANCE;
TERMINATION:**

402.1 Reopening for Cause:

- a. Each issued permit shall include provisions specifying the conditions under which the permit will be reopened prior to the expiration of the permit. A permit shall be reopened and revised under any of the following circumstances:
 - (1) Additional applicable requirements under the Act become applicable to a major source with a remaining permit term of three or more years. Such a reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to Section 403.2 of this rule. Any permit revision required pursuant to this rule shall comply with Section 403 of this rule for a permit renewal and shall reset the five year permit term.
 - (2) Additional requirements, including excess emissions requirements, become applicable to an affected source under the Acid Rain Program. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the Title V permit.
 - (3) The Control Officer or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
 - (4) The Control Officer or the Administrator determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
- b. Proceedings to reopen and issue a permit, including appeal of any final action relating to a permit reopening, shall follow the same procedures as apply to initial permit issuance and shall, except for reopenings under Section 402.1(a)(1) of this rule, affect only those parts of the permit for which cause to reopen exists. Such reopening shall be made as expeditiously as is practicable.
- c. Action to reopen a permit under this section shall not be initiated before a notice of such intent is provided to the source by the Control Officer at least 30 days in advance of the date that the permit is to be reopened, except that the Control Officer may provide a shorter time period in the case of an emergency.

- d. When a permit is reopened and revised pursuant to this rule, the Control Officer may make appropriate revisions to the permit shield established pursuant to Rule 210 of these rules.

402.2 Reopening for Cause by the Administrator:

- a. If the Administrator finds that cause exists to terminate, modify, or revoke and reissue a permit pursuant to Section 402.1 of this rule, the Administrator may notify the Control Officer and the permittee of such finding in writing. Within ten days of receipt of notice from the Administrator that cause exists to reopen a Title V permit, the Control Officer shall notify the source.
- b. Within 90 days of receipt of notice from the Administrator that cause exists to reopen a permit, the Control Officer shall forward to the Administrator a proposed determination of termination, modification, or revocation and reissuance of the permit. The Control Officer may request a 90-day extension of this limit if it is necessary to request a new or revised permit application or additional information from the applicant for, or holder of, a Title V permit.
- c. The Control Officer shall have 90 days from receipt of an objection by the Administrator to attempt to resolve the objection.

402.3 The Control Officer may issue a notice of termination of a permit issued under these rules if:

- a. The Control Officer has reasonable cause to believe that the permit was obtained by fraud or misrepresentation.
- b. The person applying for the permit failed to disclose a material fact required by the application form or the regulation applicable to the permit, of which the applicant had or should have had knowledge at the time the application was submitted.
- c. The terms and conditions of the permit have been or are being violated.

402.4 If the Control Officer issues a notice of termination under this rule, the notice shall be served on the permittee by certified mail, return receipt requested. The notice shall include a statement detailing the grounds for the revocation and a statement that the permittee is entitled to a hearing.

403 PERMIT RENEWAL AND EXPIRATION:

403.1 Prior to renewing a permit issued under these rules, the Control Officer shall provide notice in the same manner and form as provided in Rule 210 of these rules.

403.2 The Control Officer shall not renew a permit issued under these rules unless the permittee applies for a permit renewal prior to the expiration of a permit in the manner required by Rule 210 of these rules.

- a. If a timely and complete application for a permit renewal is submitted, but the Control Officer has failed to issue or deny the renewal permit before the end of the term of the previous permit, then the permit shall not expire until the renewal permit has been issued or denied.

- b. Any testing that is required for a renewal shall be completed within six months before the permit expiration date.
- c. The terms and conditions of installation permits issued before September 1, 1993, or in permits or permit revisions issued under Rule 210 or Rule 220 of these rules and authorizing the construction or modification of a stationary source, remain federal applicable requirements unless modified or revoked by the Control Officer.

403.3 The Control Officer shall publish notice of a permit renewal decision in the same manner as that provided in Rule 210 of these rules for a Title V permit and as that provided in Rule 220 of these rules for a Non-Title V permit.

404 PERMIT TRANSFERS:

404.1 Except as provided in A.R.S. § 49-429 and Section 404.2 of this rule, a Title V permit, a Non-Title V permit, or a General permit may be transferred to another person. Before the proposed transfer, the person who holds a valid Non-Title V permit or a valid General permit shall comply with the administrative permit revision procedures pursuant to Rule 220, Section 405.1 of these rules. At least 30 days before the proposed transfer, the person who holds a valid Title V permit shall give notice to the Control Officer in writing and shall comply with the administrative permit amendment procedures pursuant to Rule 210, Section 404 of these rules. Permit transfer notice shall contain the following:

- a. The permit number and expiration date.
- b. The name, address and telephone number of the current permit holder.
- c. The name, address and telephone number of the person to receive the permit.
- d. The name and title of the individual within the organization who is accepting responsibility for the permit along with a signed statement by that person indicating such acceptance.
- e. A description of the equipment to be transferred.
- f. A written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee.
- g. Provisions for the payment of any fees pursuant to Rule 280 of these rules that will be due and payable before the effective date of transfer.
- h. Sufficient information about the source's technical and financial capabilities of operating the source to allow the Control Officer to make the decision in Section 404.2 of this rule including:
 - (1) The qualifications of each person principally responsible for the operation of the source.
 - (2) A statement by the new permittee that it is financially capable of operating the source in compliance with the law and the information that provides the basis for that statement.

(3) A brief description of any action for the enforcement of any federal or state law, rule or regulation, or any county, city or local government ordinance relating to the protection of the environment, instituted against any person employed by the new permittee and principally responsible for operating the source during the five years preceding the date of application. In lieu of this description, the new permittee may submit a copy of the certificate of disclosure or 10-K form required under A.R.S. § 49-109, or a statement that this information has been filed in compliance with A.R.S. § 49-109.

404.2 The Control Officer shall deny the transfer if the Control Officer determines that the organization receiving the permit is not capable of operating the source in compliance with Article 3, Chapter 3, Title 49, Arizona Revised Statutes, the provisions of these rules, or the provisions of the permit. Notice of the denial stating the reason for the denial shall be sent to the original permit holder by certified mail stating the reason for the denial within ten working days of the Control Officer's receipt of the notice. If the transfer is not denied within ten working days after receipt of the notice, the Control Officer shall approve such permit transfer.

404.3 To appeal the transfer denial:

- a. Both the transferor and transferee shall petition the hearing board in writing for a public hearing; and
- b. The appeal process for a permit shall be followed.

405 PERMITS CONTAINING THE TERMS AND CONDITIONS OF FEDERAL DELAYED COMPLIANCE ORDERS (DCO) OR CONSENT DECREES:

405.1 The terms and conditions of either a DCO or consent decree shall be incorporated into a permit through a permit revision. In the event the permit expires prior to the expiration of the DCO or consent decree, the DCO or consent decree shall be incorporated into any permit renewal.

405.2 The owner or operator of a source subject to a DCO or consent decree shall submit to the Control Officer a quarterly report of the status of the source and construction progress and copies of any reports to the Administrator required under the order or decree. The Control Officer may require additional reporting requirements and conditions in permits issued under this rule.

405.3 For the purpose of this rule, sources subject to a consent decree issued by a federal court shall meet the same requirements as those subject to a DCO.

406 APPEAL: The denial or revocation of a permit shall be considered a final agency action unless the permittee files a written petition for a hearing in accordance with Rule 400 of these rules.

407 AIR QUALITY IMPACT MODELS:

407.1 Where the Control Officer requires a person to perform air quality impact modeling, the modeling shall be performed in a manner consistent with the Guidelines specified in Rule 240, Section 304 (Permit Requirements for New Major Sources or Major Modifications Located in Nonattainment Areas) or Section 305 (Permit

Requirements for New Major Sources or Major Modifications Located in Attainment or Unclassifiable Areas) of these rules.

407.2 Model Substitution: Where the person can demonstrate that an air quality impact model specified in the Guidelines is inappropriate, on a case-by-case basis, the model may be modified or another model substituted. However, before such modification or substitution can occur, the Control Officer must make a written finding that:

- a. No model in the Guidelines is appropriate; or
- b. The data base required for the appropriate model in the Guidelines is not available; and
- c. A model proposed as a substitute or modification is likely to produce results equal or superior to those obtained by models in the Guidelines.

407.3 Model Substitution EPA Approval: Written approval from the Administrator must be obtained for any modification or substitution. In addition, use of a modified or substituted model must be subject to notice and opportunity for public comment.

408 TESTING PROCEDURES: Except as otherwise specified, the applicable testing procedures contained in 40 CFR 52, Appendices D and E; 40 CFR 60, Appendices A through F; and 40 CFR 61, Appendices B and C shall be used to determine compliance with standards or permit conditions established pursuant to these rules. Alternative test methods as approved by the Administrator or other EPA-approved test methods may be used upon prior written approval from the Control Officer.

409 PERMIT FEES: A fee shall be charged for each permit. No permit is valid until the applicable permit fee has been received and until the permit is issued by the Control Officer.

410 PORTABLE SOURCES:

410.1 An owner or operator of a portable source which will operate for the duration of its permit solely in Maricopa County shall obtain a permit from the Control Officer for Maricopa County and is subject to Sections 410.2 and 410.3 of this rule. A portable source with a current State of Arizona permit need not obtain a Maricopa County permit but is subject to Sections 410.3 and 410.4 of this rule. Any permit for a portable source shall contain conditions that will assure compliance with all applicable requirements at all authorized locations. A portable source that has permit issued by the Director and obtains a permit from the Control Officer for Maricopa County shall request that the permit issued by the Director be terminated. Upon issuance of the permit from the Control Officer for Maricopa County, the permit issued by the Director is no longer valid.

410.2 An owner or operator of a portable source which has a Maricopa County permit but proposes to operate outside of Maricopa County, shall obtain a permit from the Director. A portable source that has a permit issued from the Control Officer for Maricopa County and obtains a permit issued by the Director shall request that the Control Officer terminate the permit issued by the Control Officer for Maricopa County. Upon issuance of a permit by the Director, the permit issued by the Control Officer for Maricopa County is no longer valid. If the owner or operator relocates the portable source in Maricopa County, the owner or operator shall notify the

Control Officer as required by Section 410.3 of this rule of the relocation of the portable source. Whenever the owner or operator of a portable source operates a portable source in Maricopa County, such owner or operator shall comply with all regulatory requirements in these rules.

410.3 A portable source may be transported from one location to another within or across Maricopa County boundaries provided the owner or operator of such portable source notifies the Director and any Control Officer who has jurisdiction over the geographic area that includes the new location of the portable source before the portable source is transported to the new location. The notification required under this rule shall include:

- a. A description of the portable source to be transported including the Maricopa County permit number or the State of Arizona permit number for such portable source;
- b. A description of the present location;
- c. A description of the location to which the portable source is to be transported;
- d. The date on which the portable source is to be moved;
- e. The date on which operation of the portable source will begin at the new location; and
- f. The duration of operation at the new location.

410.4 An owner or operator of a portable source with a current State of Arizona permit that moves such portable source into Maricopa County shall notify the Control Officer that such portable source is being transported to a new location and shall include in such notification a copy of the State of Arizona permit and a copy of any conditions imposed by the State of Arizona permit. The source shall be subject to all regulatory requirements of these rules.

411 PUBLIC RECORDS; CONFIDENTIALITY:

411.1 The Control Officer shall make all permits, including all elements required to be in the permit pursuant to Rule 210 of these rules and Rule 220 of these rules available to the public.

411.2 A notice of confidentiality pursuant to A.R.S. § 49-487(C) shall:

- a. Precisely identify the information in the application documents, which is considered confidential.
- b. Contain sufficient supporting information to allow the Control Officer to evaluate whether such information satisfies the requirements related to trade secrets or, if applicable, how the information, if disclosed, could cause substantial harm to the person's competitive position.

411.3 Within 30 days of receipt of a notice of confidentiality that complies with Section 411.2 of this rule, the Control Officer shall make a determination as to whether the information satisfies the requirements for trade secret or competitive position pursuant to A.R.S. § 49-487(C)(1) and so notify the applicant in writing. If the Control Officer agrees with the applicant that the information covered by the notice

of confidentiality satisfies the statutory requirements, the Control Officer shall include a notice in the administrative record of the permit application that certain information has been considered confidential.

SECTION 500 – MONITORING AND RECORDS (NOT APPLICABLE)

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION II – PERMITS AND FEES**

**RULE 210
TITLE V PERMIT PROVISIONS**

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SECTION 500 – MONITORING AND RECORDS (NOT APPLICABLE)

Revised 07/13/1988; Repealed and Adopted 11/15/1993; Revised 02/15/1995; Revised 06/19/1996; Revised 05/20/1998; Revised 02/07/2001; Revised 05/07/2003; Revised 06/06/2007; Revised 02/03/2016; **Revised 12/11/2019**

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION II – PERMITS AND FEES**

**RULE 210
TITLE V PERMIT PROVISIONS**

SECTION 100 – GENERAL

- 101 PURPOSE:** To provide an orderly procedure for the review of new Title V sources of air pollution and of the modification and operation of existing Title V sources through the issuance of Title V permits.
- 102 APPLICABILITY:** This rule applies to each source requiring a Title V permit or permit revision.

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definition shall apply, in addition to those definitions found in Rule 100-General Provisions and Definitions of these rules. In the event of any inconsistency between any of the Maricopa County Air Pollution Control Regulations, the definition in this rule takes precedence.

- 201 EMISSIONS ALLOWABLE UNDER THE PERMIT:** A legally and practically enforceable permit term or condition determined at issuance to be required by an applicable requirement that establishes an emissions limit (including a work practice standard) or a legally and practically enforceable emissions cap that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject.

SECTION 300 – STANDARDS

301 PERMIT APPLICATION PROCESSING PROCEDURES:

301.1 Standard Application Form and Required Information: To apply for a permit or permit revision under this rule, applicants shall complete the "Standard Permit Application Form" and shall supply all information required by the "Filing Instructions" as shown in Appendix B of these rules.

301.2 A timely application is:

- a.** For a source that becomes subject to the permit program as a result of a change in a regulation and not as a result of construction or a physical or operational change, one that is submitted within 12 months after the source becomes subject to the permit program.
- b.** For purposes of permit renewal, a timely application is one that is submitted at least six months, but not more than 18 months, prior to the date of permit expiration.

- c. Any existing source which becomes subject to a standard promulgated by the Administrator under Section 112(d) of the Act shall, within 12 months of the date the standard is promulgated, submit an application for a permit revision demonstrating how the source will comply with the standard.

301.3 If, at the time an application for a permit required by these rules is submitted, an applicable implementation plan allows the determination of an alternate emission limit, a source may, in its application, propose an emission limit that is equivalent to the emission limit otherwise applicable to the source under the applicable implementation plan. The source shall also demonstrate that the equivalent limit is quantifiable, accountable, enforceable, and subject to replicable compliance determination procedures.

301.4 A complete application is one that satisfies all of the following:

- a. An application shall provide all information required by Section 301.1 of this rule. An application for permit revision only need supply information related to the proposed change, unless the source's proposed permit revision will change the permit from a Non-Title V Permit to a Title V Permit. A responsible official shall certify the submitted information as required by Section 301.7 of this rule.
- b. An application for a new permit or permit revision shall contain an assessment of the applicability of Rule 240- Federal Major New Source Review (NSR) of these rules. If the proposed new source is a major source, as defined in Rule 240 of these rules, or the proposed permit revision constitutes a major modification, as defined in Rule 240 of these rules, then the application shall also demonstrate compliance with all applicable requirements of Rule 240 of these rules.
- c. An application for a new permit or permit revision shall contain an assessment of the applicability of the requirements of Rule 241-Minor New Source Review (NSR) of these rules. If the applicant determines that the proposed new source is subject to Rule 241 of these rules, or the proposed permit revision constitutes a minor NSR modification, as defined in Rule 100-General Provisions and Definitions of these rules, then the application shall also comply with all the applicable requirements of Rule 241 of these rules.
- d. An application to construct or reconstruct any major source of hazardous air pollutants shall contain a determination that maximum achievable control technology (MACT) for new sources under Section 112 of the Act will be met. Where MACT has not been established by the Administrator, such determination shall be made on a case-by-case basis under 40 CFR 63.40 through 63.44. For purposes of this section of this rule, constructing or reconstructing a major source shall have the meaning prescribed in 40 CFR 63.41.
- e. An application for a new permit, a permit revision, or a permit renewal shall be deemed complete, unless the Control Officer notifies the applicant by certified mail within 60 days of receipt of the application that the application is not complete. For a proposed new major source or a major modification subject to the requirements of Rule 240-Federal Major New Source Review (NSR) of these rules, the permit application shall be deemed to be submitted on the date that the completeness determination is made under Rule 240 of these rules.

- f. If, while processing an application that has been determined or deemed to be complete, the Control Officer determines that additional information is necessary to evaluate or to take final action on that application, the Control Officer may request such information in writing and may set a reasonable deadline for a response. Except for applications using the minor permit revisions as set forth in Section 405 of this rule, a source's ability to continue operating the existing source without a permit, as set forth in Section 301.8 (Action on Application) of this rule, shall be in effect from the date the application is determined or deemed to be complete until the final permit is issued, provided that the applicant submits any requested additional information by the deadline specified by the Control Officer. The Control Officer may, after submittal of one application under this rule, reject an application that is still determined to be incomplete and shall notify the applicant of the decision by certified mail.
- g. The completeness determination shall not apply to revisions processed through the minor permit revision procedures as set forth in Section 405 of this rule.
- h. To be complete, an application for a new permit or an application for a permit revision shall list and generally group insignificant activities as defined in Rule 100-General Provisions and Definitions of these rules. Except as necessary to complete an assessment required by Section 301.4 of this rule, the application need not provide emissions data regarding insignificant activities. If the Control Officer determines that an activity listed as insignificant does not meet the definition of “insignificant activity” or that emissions data for the source or activity is required to complete the assessment required by Section 301.4 of this rule, then the Control Officer shall notify the applicant in writing and shall specify the additional information required.
- i. If a permit applicant requests terms and conditions allowing for the trading of emission increases and decreases at the permitted source solely for the purpose of complying with a federally enforceable emission cap that is established in the permit independent of otherwise applicable requirements, the permit applicant shall include in its application proposed replicable procedures and permit terms that ensure the emissions trades are quantifiable and enforceable.
- j. The Control Officer agrees with a notice of confidentiality submitted under A.R.S. §49-487.

301.5 A source that has submitted information with an application under a claim of confidentiality under A.R.S. § 49-487 and Rule 200-Permit Requirements of these rules shall submit a copy of the confidential information directly to the Administrator.

301.6 Duty to Supplement or Correct Application: Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a proposed final permit.

301.7 Certification of Truth, Accuracy, and Completeness: Any application form, report, or compliance certification submitted under these rules shall contain certification by a responsible official of the truth, accuracy, and completeness of the application as of the time of submittal. This certification and any other certification required under this rule shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

301.8 Action on Application:

- a. Except as provided in Rule 240-Federal Major Source New Source Review (NSR) of these rules, Control Officer may issue a permit with a compliance schedule for a source that is not in compliance with all applicable requirements at the time of permit issuance.
- b. In addition, the Control Officer may issue, revise, or renew a permit only if all of the following conditions have been met:
 - (1) The permit application received by the Control Officer must be complete according to Section 301.4 of this rule.
 - (2) Except for administrative or minor permit revisions defined in Sections 404 or 405 of this rule, all of the requirements for public notice and participation under Section 408 of this rule must have been met.
 - (3) The Control Officer shall have complied with the requirements of Section 303 of this rule for notifying and responding to affected states and the Administrator, if applicable, other notification requirements of Rule 240, Section 304.2-Action on Application and Notification Requirements of these rules.
 - (4) The conditions of the permit require compliance with all applicable requirements.
 - (5) For proposed final permits for which the Administrator has properly objected to its issuance in writing within 45 days of receipt of the proposed final permit and all necessary supporting information from the Department, the Control Officer has revised and submitted a revised proposed final permit in response to the objection and the Administrator has not objected to this revised proposed final permit within 45 days of receipt.
 - (6) For permits to which the Administrator has objected to issuance under a petition filed under 40 CFR 70.8(d), the Administrator's objection has been resolved.
- c. The Control Officer may issue a notice of revocation of a permit issued under this rule if:
 - (1) The Control Officer has reasonable cause to believe that the permit was obtained by fraud or misrepresentation.
 - (2) The person applying for the permit failed to disclose a material fact required by the permit application form or the regulation applicable to the permit, of

which the applicant had or should have had knowledge at the time the application was submitted.

- (3) The terms and conditions of the permit have been or are being violated and the violation has not been corrected within a reasonable period of time as specified by the Control Officer.
- d. If the Control Officer issues a notice of denial or revocation of a permit under this rule, the notice shall be served on the applicant or permittee by certified mail, return receipt requested. The notice shall include a statement detailing the grounds for the denial or revocation and explaining that the permit applicant or permittee is entitled to a hearing under A.R.S. §49-482.
- e. The Control Officer shall provide a statement that sets forth the legal and factual basis for the proposed permit conditions including references to the applicable statutory or regulatory provisions. The Control Officer shall send this statement to the Administrator and to any other person who requests it.
- f. Except as provided in 40 CFR 70.4(b)(11), Rule 200-Permit Requirements of these rules and Rule 240- Federal Major New Source Review (NSR), of these rules, regulations promulgated under Title IV or Title V of the Act, or the permitting of affected sources under the acid rain program, the Control Officer shall take final action on each permit application (and application for revision or renewal) within 18 months after receiving a complete application.
- g. Priority shall be given by the Control Officer to taking action on applications for construction or modification submitted under Title I, Parts C-Prevention of Significant Deterioration and D-New Source Review of the Act.
- h. A proposed permit decision shall be published within nine months of receipt of a complete application and any additional information requested under Section 301.4(e) of this rule to process the application. The Control Officer shall provide notice of the decision as provided in Section 408 of this rule and any public hearing shall be scheduled as expeditiously as possible.

301.9 Requirement for a Permit: Except as allowed under the provisions in Sections 403 and 405 of this rule, no source may operate after the time that it is required to submit a timely and complete application, except in compliance with a permit issued under this rule. However, if a source submits a timely and complete application for initial permit issuance or renewal, the source's failure to have a permit is not a violation of these rules until the Control Officer takes final action on the application. This protection shall cease to apply if, subsequent to the completeness determination, the applicant fails to submit, by the deadline specified in writing by the Control Officer, any additional information identified as being needed to process the application. If a source submits a timely and complete application for a permit renewal, but the Control Officer has failed to issue or deny the renewal permit before the end of the term of the previous permit, then the permit shall not expire until the permit renewal has been issued or denied. This section of this rule does not affect a source's obligation to obtain a permit revision before making a modification to the source.

302 PERMIT CONTENTS:

- 302.1** Each permit issued under this rule shall include the following elements:
- a.** The date of issuance, the permit term, and the deadline by which the permittee must renew the permit.
 - b.** Enforceable emission limitations and standards including those operational requirements and limitations that assures compliance with all applicable requirements at the time of issuance.
 - (1)** The permit shall specify and reference the origin of and authority for each term or condition, and identify any difference in form as compared to the applicable requirement upon which the term or condition is based.
 - (2)** The permit shall state that, where an applicable requirement of the Act is more stringent than an applicable requirement of regulations promulgated under Title IV of the Act and incorporated under Rule 371-Acid Rain of these rules, both provisions shall be incorporated into the permit and shall be enforceable by the Administrator.
 - (3)** Any permit containing an equivalency demonstration for an alternative emission limit submitted under Section 301.3 of this rule shall contain provisions to ensure that any resulting emissions limit has been demonstrated to be quantifiable, accountable, enforceable, and based on replicable procedures.
 - (4)** The permit shall specify applicable requirements for fugitive emission limitations, regardless of whether the source category in question is included in the list of sources contained in the definition of major source in Rule 100-General Provisions and Definitions of these rules.
 - c.** As necessary, the following requirements with respect to monitoring:
 - (1)** Requirements, including stipulated requirements, concerning the use, maintenance, and, where appropriate, installation of monitoring equipment or methods;
 - (2)** Where the applicable requirement does not require periodic testing or instrumental or non-instrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit as reported under Section 302.1(d) of this rule. Such monitoring requirements shall ensure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirement. Recordkeeping provisions may be sufficient to meet the requirements of this rule; and
 - (3)** Any emissions monitoring and analysis procedures or test methods required under the applicable requirements, including any procedures and methods promulgated under Sections 114(a)(3) or 504(b) of the Act.
 - d.** With respect to recordkeeping, the permit shall incorporate all applicable recordkeeping requirements and require, where applicable, the following:
 - (1)** Records of required monitoring information that include the following:

- (a) The date, place as defined in the permit, and time of sampling or measurements;
 - (b) The date(s) analyses were performed;
 - (c) The name of the company or entity that performed the analysis;
 - (d) The analytical techniques or methods used;
 - (e) The results of such analysis; and
 - (f) The operating conditions as existing at the time of sampling or measurement.
- (2) Retention of records of all required monitoring data and support information for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.
- e. With respect to reporting, the permit shall incorporate all applicable reporting requirements and require the following:
- (1) Submittal of reports of any required monitoring at least every six months. All instances of deviations from permit requirements shall be clearly identified in such reports. All required reports shall be certified by a responsible official consistent with Section 301.7 and Section 305.1(e) of this rule.
 - (2) Prompt reporting of deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. The Control Officer shall define "prompt" in relation to the degree and type of deviation likely to occur and the applicable requirements.
- f. A permit condition prohibiting emissions exceeding any allowances that the source lawfully holds under Title IV of the Act or the regulations promulgated thereunder and incorporated under Rule 371-Acid Rain of these rules.
- (1) No permit revision shall be required for increases in emissions that are authorized by allowances acquired under the acid rain program and incorporated under Rule 371-Acid Rain of these rules, provided that such increases do not require a permit revision under any other applicable requirement.
 - (2) No limit shall be placed on the number of allowances held by the source. The source may not, however, use allowances as a defense to non-compliance with any other applicable requirement.
 - (3) Any such allowance shall be accounted for according to the procedures established in regulations promulgated under Title IV of the Act.
 - (4) Any permit issued under the requirements of this rule and Title V of the Act to a unit subject to the provisions of Title IV of the Act and incorporated

under Rule 371-Acid Rain of these rules shall include conditions prohibiting all of the following:

- (a) Annual emissions of sulfur dioxide in excess of the number of allowances to emit sulfur dioxide held by the owners or operators of the unit or the designated representative of the owners or operators.
 - (b) Exceedances of applicable emission rates.
 - (c) The use of any allowance prior to the year for which it was allocated.
 - (d) Violation of any other provision of the permit.
- g. A severability clause to ensure the continued validity of the various permit requirements in the event of a challenge to any portions of the permit.
- h. Provisions stating the following:
 - (1) That the permittee shall comply with all conditions of the permit including all applicable requirements of Arizona air quality statutes and the air quality rules. Compliance with permit terms and conditions does not relieve, modify, or otherwise affect the permittee's duty to comply with all applicable requirements of Arizona air quality statutes and the Maricopa County Air Pollution Control Regulations. Any permit non-compliance is grounds for enforcement action; for a permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application. Non-compliance with any federally enforceable requirement in a permit constitutes a violation of the Act.
 - (2) That the permittee shall halt or reduce the permitted activity in order to maintain compliance with applicable requirements of Federal laws, Arizona laws, these rules, or other conditions of the permit.
 - (3) That the permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by a permittee for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
 - (4) That the permit does not convey any property rights nor exclusive privilege, of any sort.
 - (5) That the permittee shall furnish to the Control Officer, within a reasonable time, any information that the Control Officer may request in writing to determine whether cause exists for revising, revoking and reissuing the permit, or terminating the permit, or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Control Officer copies of records required to be kept by the permit. For information claimed to be confidential, the permittee shall furnish a copy of such records directly to the Administrator along with a claim of confidentiality.
 - (6) For any major source operating in a nonattainment area for any pollutant(s) for which the source is classified as a major source, the source shall comply

with reasonably available control technology (RACT) as defined in Rule 100-General Provisions and Definitions of these rules.

- (7) For any major source operating in a nonattainment area designated as serious for PM₁₀, for which the source is classified as a major source for PM₁₀, the source shall comply with the best available control technology (BACT), as defined in Rule 100-General Provisions and Definitions of these rules, for PM₁₀.
- i. A provision to ensure that a source pays fees to the Control Officer under A.R.S. §49-480(D) and Rule 280-Fees of these rules.
- j. A provision stating that no permit revision shall be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in the permit.
- k. Terms and conditions for reasonably anticipated operating scenarios identified by the source in its application as approved by the Control Officer. Such terms and conditions:

 - (1) Shall require the source, contemporaneously with making a change from one operating scenario to another, to record in a log at the permitted source a record of the scenario under which it is operating;
 - (2) Shall extend the permit shield described in Section 407 of this rule to all terms and conditions under each such operating scenario; and
 - (3) Must ensure that the terms and conditions of each such alternative scenario meet all applicable requirements and the requirements of this rule.
- l. Terms and conditions, if the permit applicant requests them, as approved by the Control Officer, for the trading of emissions increases and decreases in the permitted source, to the extent that the applicable requirements provide for trading increases and decreases without a case-by-case approval of each emissions trade. Such terms and conditions:

 - (1) Shall include all terms required under Section 302.1 and Section 302.3 of this rule to determine compliance;
 - (2) May extend the permit shield described in Section 302.4 of this rule to all terms and conditions that allow such increases and decreases in emissions; and
 - (3) Shall meet all applicable requirements and requirements of this rule.
- m. Terms and conditions, if the permit applicant requests them and they are approved by the Control Officer, setting forth intermittent operating scenarios including potential periods of downtime. If such terms and conditions are included, the county's emissions inventory shall not reflect the zero emissions associated with the downtime.
- n. If a permit applicant requests it, the Control Officer shall issue permits that contain terms and conditions allowing for the trading of emission increases and decreases in the permitted source solely for the purpose of complying with a federally enforceable emission cap that is established in the permit independent

of otherwise applicable requirements. The permit applicant shall include in its application proposed replicable procedures and permit terms that ensure the emissions trades are quantifiable and enforceable. The Control Officer shall not be required to include in the emissions trading provisions any emissions units for which emissions are not quantifiable or for which there are no replicable procedures to enforce the emissions trades. The permit shall also require compliance with all applicable requirements. Changes made under this section of this rule shall not include modifications under any provision of Title I of the Act and may not exceed emissions allowable under the permit. The terms and conditions shall include notice that (1) conforms to Section 403.4 and Section 403.5 of this rule and (2) describes how the increases or decreases in emissions will comply with the terms and conditions of the permit.

- o. Such terms and conditions as are consistent with the requirements of this rule, Rule 100-General Provisions and Definitions of these rules and the Clean Air Act, and are found by the Control Officer to be necessary.

302.2 Federally Enforceable Requirements: All terms and conditions in a Title V Permit shall be enforceable by the Administrator and citizens under the Act, including any provisions designed to limit a source's potential to emit. However, the Control Officer shall specifically designate as not being federally enforceable under the Act any terms and conditions included in the Title V Permit that are not required under the Act or under any of its applicable requirements.

302.3 All applications for a permit required by this rule shall include a compliance plan meeting the requirements of Section 503 of the Act.

302.4 Each permit shall include the applicable permit shield provisions set forth in Section 407 of this rule.

302.5 A Title V permit issued to a major source shall require that revisions be made under Rule 200-Permit Requirements of these rules to incorporate additional applicable requirements adopted by the Administrator under the Act that become applicable to a source with a permit with a remaining permit term of three or more years. No revision shall be required if the effective date of the applicable requirements is after the expiration of the permit. The revisions shall be made as expeditiously as practicable, but not later than 18 months after the promulgation of such standards and regulations. Any permit revision required under this section of this rule shall comply with provisions in Rule 200-Permit Requirements of these rules for permit renewal and shall reset the five year permit term.

303 PERMIT REVIEW BY THE EPA AND AFFECTED STATES:

303.1 Except as provided in Section 301.5 of this rule and as waived by the Administrator, for each Title V permit, a copy of each of the following shall be provided to the Administrator as follows:

- a. The applicant shall provide a complete copy of the application, including any attachments, compliance plans, and other information required by Section 301.4 of this rule at the time of submittal of the application to the Control Officer.

- b. The Control Officer shall provide the proposed final permit after public and affected State review.
 - c. The Control Officer shall provide the final permit at the time of issuance.
- 303.2** The Control Officer may require the application information to be submitted in a computer-readable format compatible with the Administrator's national database management system.
- 303.3** The Control Officer shall keep all records associated with all permits including those records containing the calculations and rationale supporting the Control Officer's decision to issue a permit for a minimum of five years from permit issuance.
- 303.4** No permit for which an application is required to be submitted to the Administrator under Section 303.1 of this rule shall be issued if the Administrator properly objects to its issuance in writing within 45 days of receipt of the proposed final permit from the Control Officer and all necessary supporting information.
- 303.5 Review by Affected States:**
- a. For each Title V permit, the Control Officer shall provide notice of each proposed permit to any affected State on or before the time that the Control Officer provides this notice to the public as required under Section 408 of this rule except to the extent Section 405 of this rule requires the timing of the notice to be different.
 - b. If the Control Officer refuses to accept a recommendation of any affected State submitted during the public or affected State review period, the Control Officer shall notify the Administrator and the affected State in writing. The notification shall include the Control Officer's reasons for not accepting any such recommendation and shall be provided to the Administrator as part of the submittal of the proposed final permit. The Control Officer shall not be required to accept recommendations that are not based on federal applicable requirements or requirements of state law.
- 303.6** Any person who petitions the Administrator under 40 CFR 70.8(d) shall notify the Control Officer by certified mail of such petition as soon as possible, but in no case more than 10 days following such petition. Such notice shall include the grounds for objection and whether such objections were raised during the public comment period. A petition for review does not stay the effectiveness of a permit or its requirements if the permit was issued after the end of the 45-day administrative review period and prior to the Administrator's objection.
- 303.7** If the Control Officer has issued a permit prior to receipt of the Administrator's objection under this rule, and the Administrator indicates that a permit should be revised or revoked and reissued, the Control Officer shall respond consistent with Rule 200-Permit Requirements of these rules and may thereafter issue only a revised permit that satisfies the Administrator's objection. In any case, the source shall not be in violation of the requirement to have submitted a timely and complete application.
- 303.8 Prohibition on Default Issuance:**

- a. No Title V permit including a permit renewal or revision shall be issued until affected States and the Administrator have had an opportunity to review the proposed final permit.
- b. No permit or renewal shall be issued unless the Control Officer has acted on the application.

304 EMISSION STANDARDS AND LIMITATIONS: Wherever applicable requirements apply different standards or limitations to a source for the same item, all applicable requirements shall be included in the permit.

305 COMPLIANCE PLAN; CERTIFICATION:

305.1 All permits shall contain the following elements with respect to compliance:

- a. The following monitoring requirements sufficient to assure compliance with the terms and conditions of the permit:
 - (1) Any emissions monitoring and analysis procedures or test methods required under the applicable requirements, including any procedures and methods promulgated under Section 114(a)(3) or 504(b) of the Act;
 - (2) Where the applicable requirement does not require periodic testing or instrumental or non-instrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit, as reported under Section 305.1(c) of this rule. Such monitoring requirements shall assure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirements; and
 - (3) Requirements concerning the use, maintenance, and, where appropriate, installation of monitoring equipment or methods.
- b. All applicable recordkeeping requirements, as described in Section 302.1(d) of this rule.
- c. All applicable reporting requirements including the following:
 - (1) Submittal of reports of any required monitoring at least every six months. All instances of deviations from permit requirements shall be clearly identified in such reports. All required reports shall be certified by a responsible official consistent with Section 305.1(e) of this rule.
 - (2) Reporting within two working days from knowledge of deviations from permit requirements, including those attributable to upset conditions as defined in the permit and the probable cause of such deviations. Reporting within a reasonable time of any long-term corrective actions or preventative measures taken.
- d. Requirements for compliance certification with terms and conditions contained in the permit, including emission limitations, standards, or work practices. Permits shall include each of the following:

- (1) The frequency for submissions of compliance certifications, which shall not be less than annually;
 - (2) The means to monitor the compliance of the source with its emissions limitations, standards, and work practices;
 - (3) A requirement that the compliance certification include the following:
 - (a) The identification of each term or condition of the permit that is the basis of the certification;
 - (b) The compliance status;
 - (c) Whether compliance was continuous or intermittent;
 - (d) The method(s) used for determining the compliance status of the source, currently and over the reporting period; and
 - (e) Other facts the Control Officer may require to determine the compliance status of the source.
 - (4) A requirement that all compliance certifications be submitted to the Control Officer and to the Administrator;
 - (5) Additional requirements specified in Sections 114(a)(3) and 504(b) of the Act or under Rule 220-Non-Title V Permit Provisions, Section 304-Permits Containing Voluntarily Accepted Emissions Limitations, Controls, or Other Requirements (Synthetic Minor) of these rules.
- e. A requirement for any document required to be submitted by a permit, including reports, to contain a certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under this rule shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- f. Inspection and entry provisions which require the permittee to allow the Control Officer, upon presentation of proper credentials, to:
- (1) Enter upon the permittee's premises where a source is located or emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;
 - (2) Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;
 - (3) Inspect, at reasonable times, any sources, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;
 - (4) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and
 - (5) To record any inspection by use of written, electronic, magnetic, and photographic media.

- g.** A compliance plan that contains all of the following:
- (1)** A description of the compliance status of the source with respect to all applicable requirements.
 - (2)** A description as follows:
 - (a)** For applicable requirements with which the source is in compliance, a statement that the source will continue to comply with such requirements.
 - (b)** For applicable requirements that will become effective during the permit term, a statement that the source will meet such requirements on a timely basis.
 - (c)** For requirements with which the source is not in compliance at the time of permit issuance, a narrative description of how the source will achieve compliance with such requirements.
 - (3)** A compliance schedule as follows:
 - (a)** For applicable requirements with which the source is in compliance, a statement that the source will continue to comply with such requirements.
 - (b)** For applicable requirements that will become effective during the permit term, a statement that the source will meet such requirements on a timely basis. A statement that the source will meet in a timely manner applicable requirements that become effective during the permit term shall satisfy this rule, unless a more detailed schedule is expressly required by the applicable requirement.
 - (c)** A schedule of compliance for sources that are not in compliance with all applicable requirements at the time of permit issuance. Such a schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirement for which the source will be in noncompliance at the time of permit issuance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based.
 - (4)** A schedule for submission of certified progress reports no less frequently than every six months for sources required to have a schedule of compliance to remedy a violation. Such schedule shall contain:
 - (a)** Dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when such activities, milestones or compliance were achieved; and
 - (b)** An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

(5) The compliance plan content requirements specified in Section 305.1(g) of this rule shall apply and be included in the acid rain portion of a compliance plan for an affected source, except as specifically superseded by regulations promulgated under Title IV of the Act and incorporated under Rule 371-Acid Rain of these rules with regard to the schedule and method(s) the source will use to achieve compliance with the acid rain emissions limitations.

h. If there is a Federal Implementation Plan (FIP) applicable to the source, a provision that compliance with the FIP is required.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 FEES REQUIRED: Persons subject to this rule shall pay the fees required, as set forth in Rule 280-Fees of these rules.

402 PERMIT TERM: A Title V Permit shall remain in effect for no more than five years, except as provided in Section 301.9 of this rule.

403 SOURCE CHANGES ALLOWED WITHOUT PERMIT REVISIONS:

403.1 A source with a Title V permit may make changes that contravene an express permit term without a permit revision if all of the following apply:

- a. The changes are not modifications under any provision of Title I of the Act or under A.R.S. §49-401.01(24) ;
- b. The changes do not result in emissions that exceed the emissions allowable under the permit whether expressed therein as a rate of emissions or in terms of total emissions;
- c. The changes do not violate any applicable requirements or trigger any additional applicable requirements;
- d. The changes meet all requirements for processing as a minor permit revision under Section 405 of this rule;
- e. The changes do not violate federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements; and
- f. The changes do not constitute a minor NSR modification, as defined in Rule 100-General Provisions and Definitions of these rules.

403.2 The substitution of an item of process or pollution control equipment for an identical or substantially similar item of process or pollution control equipment shall qualify as a change that does not require a permit revision, if it meets all of the requirements of Sections 403.1, 403.4, and 403.5 of this rule.

403.3 Except for sources with authority to operate under general permits, permitted sources may trade increases and decreases in emissions within the permitted source, as established in the permit under Section 302.1(l) of this rule, where an applicable implementation plan provides for such emissions trades, without applying for a permit revision and based on the seven working days notice prescribed in Section 403.4 of this rule. This provision is available in those cases where the permit does

not already provide for such emissions trading, and shall not include any emissions units for which emissions are not quantifiable nor for which there are no replicable procedures to enforce the emissions trades.

403.4 For each change listed under Sections 403.1, 403.2 or 403.3 of this rule, a written notice shall be made by email, certified mail or hand delivery and shall be received by the Control Officer and the Administrator, a minimum of seven working days in advance of the change. Notifications of changes associated with emergency conditions, such as malfunctions necessitating the replacement of equipment, may be provided less than seven working days in advance of the change but must be provided as far in advance of the change, or if advance notification is not practicable, as soon after the change as possible.

403.5 The written notice shall include:

- a. When the proposed change will occur.
- b. A description of each such change.
- c. Any change in emissions of regulated air pollutants.
- d. The pollutants emitted subject to the emissions trade, if any.
- e. The provisions in the implementation plan that provide for the emissions trade with which the source will comply and any other information as may be required by the provisions in the implementation plan authorizing the trade.
- f. If the emissions trading provisions of the implementation plan are invoked, then the permit requirements with which the source will comply.
- g. Any permit term or condition that is no longer applicable as a result of the change.

403.6 The permit shield described in Section 407 of this rule shall not apply to any change made under Section 403.1 through Section 403.3 of this rule. Compliance with the permit requirements that the source will meet using the emissions trade shall be determined according to requirements of the implementation plan authorizing the emissions trade.

403.7 Except as otherwise provided for in the permit, making a change from one alternative operating scenario to another, as provided in Section 302.1(k) of this rule, shall not require any prior notice under this rule.

403.8 The Control Officer shall make available to the public monthly summaries of all notices received under this rule.

404 ADMINISTRATIVE PERMIT AMENDMENTS:

404.1 Except for provisions to Title IV of the Act, an administrative permit amendment is a permit revision that does any of the following:

- a. Corrects typographical errors;
- b. Identifies a change in the name, address, or phone number of any person identified in the permit or provides a similar minor administrative change at the source;

- c. Requires more frequent monitoring or reporting by the permittee; or
- d. Allows for a change in ownership or operational control of a source under Rule 200-Permit Provisions of these rules, where the Control Officer determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility coverage and liability between the current and new permittee has been submitted to the Control Officer.

404.2 Administrative permit amendments to Title IV provisions of the permit shall be governed by regulations promulgated by the Administrator under Title IV of the Act or incorporated under Rule 371-Acid Rain of these rules.

404.3 The Control Officer shall take no more than 60 days from receipt of a request for an administrative permit amendment to take final action on such request. Title V permits may incorporate such changes without providing notice to the public or affected States provided that such permits designate that such permit revisions have been made under this rule.

404.4 The Control Officer shall submit a copy of Title V permits revised under this rule to the Administrator.

404.5 Source's Ability to Make a Change: Except for permit transfers described in Rule 200-Permit Provisions of these rules, the source may implement the changes addressed in the request for an administrative permit amendment immediately upon submittal of the request.

405 MINOR PERMIT REVISIONS:

405.1 Minor permit revision procedures may be used only for those changes at a Title V source that satisfy all of the following:

- a. Do not violate any applicable requirement;
- b. Do not involve substantive changes to existing monitoring, reporting, or recordkeeping requirements in the permit;
- c. Do not require or change:
 - (1) A case-by-case determination of an emission limitation or other standard,
 - (2) A source specific determination of ambient impacts, or
 - (3) A visibility or increment analysis.
- d. Do not seek to establish nor to change a Title V permit term or condition for which there is no corresponding underlying applicable requirement and that the Title V source has assumed in order to avoid an applicable requirement to which the Title V source would otherwise be subject. Such terms and conditions include:
 - (1) A federally enforceable emissions cap which the Title V source would assume to avoid classification as a modification under any provision of Title I of the Act; and

- (2) An alternative emissions limit approved under regulations promulgated under the Section 112(i)(5) of the Act.
 - e. Are not modifications under any provision of Title I of the Act.
 - f. Are not changes in fuels not represented in the permit application or provided for in the Title V permit.
 - g. Are not minor NSR modifications for which public participation is required under Rule 241-Minor New Source Review (NSR) of these rules; and
 - h. Are not required to be processed as a significant permit revision under Section 406 of this rule.
- 405.2** As approved by the Control Officer, minor permit revision procedures may be used for Title V permit revisions involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit revision procedures are explicitly provided for in an applicable implementation plan or in applicable requirements promulgated by the Administrator.
- 405.3** To request a minor permit revision, a source shall complete the “Standard Permit Application Form” and shall include the following information:
- a. A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;
 - b. For any source that is making the change immediately after it files the application, the Title V source's suggested draft permit; and
 - c. Certification by a responsible official that the proposed revision meets the criteria for use of minor permit revision procedures and a request that such procedures be used.
- 405.4 EPA and Affected State Notification:** Within five working days of the Control Officer’s receipt of an application for a minor permit revision, the Control Officer shall notify the Administrator and affected States of the requested permit revision in accordance with Section 303 of this rule.
- 405.5** The Control Officer shall not issue a final permit revision until after the Administrator’s 45-day review period or until the Administrator has notified the Control Officer that the Administrator will not object to issuance of the permit revision, whichever is first, although the Control Officer may approve the permit revision prior to that time. Within 90 days of the Control Officer's receipt of a complete application under minor permit revision procedures, or 15 days after the end of the Administrator’s 45-day review period, whichever is later, the Control Officer shall do one or more of the following:
- a. Issue the permit revision as proposed;
 - b. Deny the permit revision application;
 - c. Determine that the proposed permit revision does not meet the minor permit revision criteria and should be reviewed under the significant permit revision procedures; and/or

- d. Revise the proposed permit revision and transmit to the Administrator the new proposed final permit revision as required by Section 303 of this rule.

405.6 Source's Ability to Make Change: The source may make the change proposed in its minor permit revision application immediately after it files the application, unless the revision triggers minor New Source Review (NSR) under Rule 241 of these rules. After a Title V source makes the change allowed by the preceding sentence, and until the Control Officer takes any of the actions specified in Section 405.5 of this rule, the source shall comply with both the applicable requirements governing the change and the proposed revised permit terms and conditions. During this time period, the Title V source need not comply with the existing permit terms and conditions it seeks to modify. However, if the Title V source fails to comply with its proposed permit terms and conditions during this time period, the Control Officer may enforce existing permit terms and conditions, which the Title V source seeks to revise.

405.7 Permit Shield: The permit shield under Section 407 of this rule shall not extend to minor permit revisions.

405.8 Notwithstanding any other part of this rule, the Control Officer may require a permit to be revised under Section 406 of this rule for any change that, when considered together with any other changes submitted by the same source under this rule or under Section 404 of this rule over the life of the permit, do not satisfy Section 405.1 of this rule.

405.9 The Control Officer shall make available to the public monthly summaries of all applications for minor permit revisions.

406 SIGNIFICANT PERMIT REVISIONS:

406.1 A significant permit revision shall be used for an application requesting a permit revision that does not qualify as a minor permit revision nor as an administrative permit amendment.

406.2 A significant permit revision that is only required because of a change described in Section 405.1(f) or Section 405.1(g) of this rule shall not be considered a significant permit revision under Part 70 for the purposes of 40 CFR 64.5(a)(2). Every significant change in existing monitoring permit terms or conditions and every relaxation of reporting or recordkeeping permit terms or conditions shall follow significant permit revision procedures.

406.3 Any modification to a major source of federally listed hazardous air pollutants, and any reconstruction of a source, or a process or production unit, under Section 112(g) of the Act and regulations promulgated thereunder, shall follow significant permit revision procedures.

406.4 Significant permit revisions shall meet all requirements of this rule for applications, public participation, review by affected States, and review by the Administrator, that apply to permit issuance and renewal.

407 PERMIT SHIELDS:

- 407.1** Each Title V permit issued under this rule shall specifically identify all federal, state, and local air pollution control requirements applicable to the Title V source at the time the Title V permit is issued. The Title V permit shall state that compliance with the conditions of the Title V permit shall be deemed compliance with any applicable requirement as of the date of Title V permit issuance, provided that such applicable requirements are included and expressly identified in the Title V permit. The Control Officer may include in a Title V permit determination that other requirements specifically identified are not applicable. Any Title V permit issued under this rule that does not expressly state that a permit shield exists shall not provide such a shield.
- 407.2** Nothing in this rule or in any permit shall alter or affect the following:
- a. The provisions of Section 303 of the Act-Emergency Orders, including the authority of the Administrator under that section.
 - b. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance.
 - c. The applicable requirements of the acid rain program, consistent with Section 408(a) of the Act.
 - d. The ability of the Administrator or of the Control Officer to obtain information from a source under Section 114 of the Act, or any provision of State law.
 - e. The authority of the Control Officer to require compliance with new applicable requirements adopted after the permit is issued.
- 407.3** In addition to the provisions of Rule 200-Permit Requirements of these rules, a permit shall be reopened by the Control Officer and the permit shield revised, when it is determined that standards or conditions in the permit are based on incorrect information provided by the applicant.

408 PUBLIC PARTICIPATION:

- 408.1** The Control Officer shall provide public notice, an opportunity for public comment, and an opportunity for a hearing before taking any of the following actions for a source required to obtain a permit under Title V of the Clean Air Act:
- a. Issuing, denying, or renewing a permit.
 - b. Issuing or denying a significant permit revision.
 - c. Revoking and reissuing or reopening a permit.
 - d. Issuing a conditional order under Rule 120-Conditional Orders of these rules.
 - e. Granting a variance from a general permit under Rule 230-General Permits of these rules.
- 408.2** The Control Officer shall provide public notice of receipt of complete applications for permits or permit revisions subject to Rule 240 of these rules by publishing a notice in a newspaper of general circulation in Maricopa County.
- 408.3** The Control Officer shall provide the notice required under Section 408.1 of this rule as follows:

- a. The Control Officer shall publish the notice once each week for two consecutive weeks in two newspapers of general circulation in the county where the source is or will be located.
- b. The Control Officer shall mail a copy of the notice to persons on a mailing list developed by the Control Officer consisting of those persons who have requested in writing to be placed on such a mailing list.
- c. The Control Officer shall give notice by other means if necessary to assure adequate notice to the affected public.

408.4 The notice required by Section 408.3 of this rule shall include the following:

- a. Identification of the affected facility;
- b. Name and address of the permittee or applicant;
- c. Name and address of the permitting authority processing the permit action;
- d. The activity or activities involved in the permit action;
- e. The emissions change involved in any permit revision;
- f. The air contaminants to be emitted;
- g. A statement that any person may submit written comments, or a written request for a public hearing, or both, on the proposed permit action along with the deadline for such requests or comments;
- h. The name, address, and telephone number of a person from the Department from whom additional information may be obtained;
- i. Locations where copies of the permit or permit revision application, the proposed permit, and all other materials available to the Control Officer that are relevant to the permit decision may be reviewed, including the closest Department office, and the times at which such materials shall be available for public inspection;
- j. A summary of any notice of confidentiality filed under Rule 100-General Provisions and Definitions of these rules;
- k. A statement in the public record if the permit or permit revision would result in the generation of emission reduction credits under A.A.C. R18-2-1204-Title 18, Chapter 2, Article 12 or the utilization of emission reduction credits under A.A.C. R18-2-1206-Title 18, Chapter 2, Article 12; and
- l. The Control Officer's preliminary determination whether the application for a permit or permit revision should be approved or disapproved.

408.5 The Control Officer shall hold a public hearing to receive comments on petitions for conditional orders, which would vary from requirements of the applicable implementation plan. For all other actions involving a proposed permit, the Control Officer shall hold a public hearing only upon written request. If a public hearing is requested, the Control Officer shall schedule the hearing and publish notice as described in A.R.S. §49-498 and in Section 408.4 of this rule. The Control Officer shall give notice of any public hearing at least 30 days in advance of the hearing.

- 408.6** At the time the Control Officer publishes the first notice under Section 408.3(a) of this rule, the applicant shall post a notice containing the information required in Section 408.4 of this rule at the site where the source is or may be located. Consistent with federal, State, and local law, the posting shall be prominently placed at a location under the applicant's legal control, adjacent to the nearest public roadway, and visible to the public using the public roadway. If a public hearing is to be held, the applicant shall place an additional posting providing notice of the hearing. Any posting shall be maintained until the public comment period is closed.
- 408.7** The Control Officer shall provide at least 30 days from the date of the first notice for public comment to receive comments and requests for a hearing. The Control Officer shall keep a record of the commenters and of the issues raised during the public participation process and shall prepare written responses to all comments received. At the time a proposed final permit is submitted to the Administrator, the record and copies of the Control Officer's responses shall be made available to the applicant, the Administrator and to all commenters.

SECTION 500 – MONITORING AND RECORDS (NOT APPLICABLE)

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION II – PERMITS AND FEES**

**RULE 220
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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION II – PERMITS AND FEES**

**RULE 220
NON-TITLE V PERMIT PROVISIONS**

SECTION 100 – GENERAL

- 101 PURPOSE:** To provide an orderly procedure for the review of Non-Title V sources of air pollution through the issuance of Non-Title V permits.
- 102 APPLICABILITY:** This rule applies to each source requiring a Non-Title V permit or permit revision and notifications of certain changes at Non-Title V permit sources.

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.

SECTION 300 – STANDARDS

301 PERMIT APPLICATION PROCESSING PROCEDURES:

301.1 Standard Application Form and Required Information: To apply for a permit or permit revision under this rule, applicants shall complete a permit application filed in the manner and form prescribed by the Control Officer. The Control Officer, either upon the Control Officer's own initiative or upon the request of a permit applicant, may waive the requirement that specific information or data for a particular source or category of sources be submitted in the permit application. However, the Control Officer must determine that the information or data would be unnecessary to determine all of the following:

- a. The applicable requirements to which the source may be subject;
- b. The design and control of the air pollution control equipment such that the source may be expected to operate without emitting or without causing to be emitted air contaminants in violation of these rules;
- c. The fees to which the source may be subject under Rule 280-Fees of these rules; and
- d. A proposed emission limitation, control, or other requirement that meets the requirements of Section 304 of this rule.

301.2 Permit Application and a Compliance Plan:

- a. A permit application shall include a compliance plan, if applicable, which meets the requirements of Section 303 of this rule when an enforcement action has been taken and not resolved at the time the permit application is filed.

- b. A permit application may include a compliance plan, if applicable, which meets the requirements of Section 303 of this rule under other circumstances determined by the Control Officer.

301.3 A Timely Permit Application:

- a. For a source, that becomes subject to the permit program as a result of a change in a regulation and not as a result of construction or a physical or operational change, one that is submitted within 12 months after the source becomes subject to the permit program.
- b. For purposes of permit renewal, a timely application is one that is submitted at least six months, but not more than 12 months, prior to the date of permit expiration.
- c. Unless otherwise required by Rule 200-Permit Requirements of these rules and for any existing source which becomes subject to a standard promulgated by the Administrator under Section 112(d) of the Act, a timely application is a permit revision application that is submitted within 12 months of the date the standard is promulgated. If such standard requires the source to obtain a Title V permit, then the permit revision application shall be subject to the requirements of Rule 210-Title V Permit Provisions of these rules.

301.4 A complete application is one that satisfies all of the following:

- a. An application shall provide all information required under Section 301.1 of this rule. An application for permit revision need only supply such information if it is related to the proposed change. A responsible official shall certify the submitted information, as required by Section 301.6 of this rule.
- b. An application for a new permit or a permit revision shall contain an assessment of the applicability of Rule 241-Minor New Source Review (NSR) of these rules . If the applicant determines that the proposed new source is subject to Rule 241 of these rules, or the proposed permit revision constitutes a minor NSR modification, then the applicant shall demonstrate compliance with all applicable requirements of Rule 241 of these rules.
- c. An application for a new permit, permit revision, or renewal shall be deemed complete unless the Control Officer notifies the applicant by certified mail within 60 days of receipt of the application that the application is not complete and specifies what additional information is necessary for the application to be deemed complete.
- d. If, while processing an application that has been determined or deemed to be complete, the Control Officer determines that additional information is necessary to evaluate or to take final action on that application, the Control Officer may request such information in writing and may set a reasonable deadline for a response. Except for applications using the minor permit revision procedures as set forth in Section 406 of this rule, a source's ability to continue operating the existing source without a permit, as set forth in Section 301.6 (Action on Application) of this rule, shall be in effect from the date the application is determined or deemed to be complete until the final permit is issued, provided that the applicant submits any requested additional information

by the deadline specified by the Control Officer. The Control Officer may, after submittal of one application under this rule, reject an application that is still determined to be incomplete and shall notify the applicant of the decision by certified mail.

- e. The completeness determination shall not apply to revisions processed through the minor permit revision procedures as set forth in Section 406 of this rule.
- f. The Control Officer agrees with any notice of confidentiality submitted under A.R.S. §49-487.
- g. Any emission source, equipment or activity listed in the definition of “insignificant activity” in Rule 100 of these rules shall be listed in the application. The application need not provide emissions data regarding insignificant activities as defined in Rule 100 of these rules. If the Control Officer determines that a source or an activity listed on the application does not meet the definition of “insignificant activity” in Rule 100 of these rules or that emissions data for the source or activity is required to complete the assessment required by Section 301.4 of this rule, the Control Officer shall notify the applicant in writing and specify the additional information required, which may include emissions data and supporting documents.
- h. If a source wishes to voluntarily enter into an emissions limitation, control, or other requirement pursuant to Section 304 of this rule, a source shall describe the emissions limitation, control, or other requirement in its application, along with proposed associated monitoring, recordkeeping, and reporting requirements necessary to demonstrate that the emissions limitation, control, or other requirement is permanent, quantifiable, and otherwise enforceable as a practical matter.

301.5 Duty to Supplement or Correct Application: Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a proposed permit.

301.6 Action on Application:

- a. Except as provided in Rule 241-Minor New Source Review (NSR) of these rules, Control Officer may issue a permit with a compliance schedule for a source that is not in compliance with all applicable requirements at the time of permit issuance.
- b. For permits that contain voluntary emission limits, controls, or other requirements established under Section 304 of this rule, the Control Officer shall have complied with the requirement of Section 304.4 of this rule to provide the Administrator with a copy of the proposed permit. In addition, the Control Officer may issue, revise, or renew a permit only if all of the following conditions have been met:

- (1) The permit application received by the Control Officer must be complete according to Section 301.4 of this rule.
 - (2) Except for administrative or minor permit revisions defined in Sections 405.1 and 405.2 of this rule, all of the requirements for public notice and participation under Section 407 of this rule must have been met.
 - (3) The conditions of the permit require compliance with all applicable requirements.
 - (4) For permits for which a proposed final permit is required to be submitted to the Administrator under Section 304 of this rule, and to which the Administrator has properly objected to its issuance in writing within 30 days of receipt of the proposed final permit and all necessary supporting information from the Control Officer, the Control Officer has revised and submitted a proposed final permit in response to the objection and the Administrator has not objected to this proposed final permit within 30 days of receipt.
- c. The Control Officer may issue a notice of revocation of a permit issued under this rule if:
 - (1) The Control Officer has reasonable cause to believe that the permit was obtained by fraud or misrepresentation.
 - (2) The person applying for the permit failed to disclose a material fact required by the permit application form or the regulation applicable to the permit, of which the applicant had or should have had knowledge at the time the application was submitted.
 - (3) The terms and conditions of the permit have been or are being violated and the violation has not been corrected within a reasonable period of time as specified by the Control Officer.
 - d. If the Control Officer issues a notice of denial or revocation of a permit under this rule, the notice shall be served on the applicant or permittee by certified mail, return receipt requested. The notice shall include a statement detailing the grounds for the denial or revocation and explaining that the permit applicant or permittee is entitled to a hearing.
 - e. Except as provided in Rule 200-Permit Requirements of these rules, the Control Officer shall take final action on each permit application (and application for revision or renewal) within 90 days of receipt of a complete application, unless a finding is made that more time is needed, but in no case longer than nine months after receiving a complete application.
- 301.7** Except as allowed under the provisions in Section 404 of this rule, no source may operate after the time that it is required to submit a timely and complete application, except in compliance with a permit issued under this rule. However, if a source submits a timely and complete application for initial permit issuance or renewal, the source's failure to have a permit is not a violation of these rules until the Control Officer takes final action on the application. This protection shall cease to apply if, subsequent to the completeness determination, the applicant fails to submit, by the

deadline specified in writing by the Control Officer, any additional information identified as being needed to process the application. If a source submits a timely and complete application for a permit renewal, but the Control Officer fails to issue or deny the renewal permit before the end of the term of the previous permit, then the permit shall not expire until the permit renewal has been issued or denied. This section of this rule does not affect a source's obligation to obtain a permit revision before making a modification to the source.

- 302 PERMIT CONTENTS:** Each permit issued under this rule shall include the following elements:
- 302.1** The date of issuance, the permit term, and the deadline by which the permittee must renew the permit.
 - 302.2** Enforceable emission limitations and standards, including those operational requirements and limitations that ensure compliance with all applicable requirements at the time of issuance, and operational requirements and limitations that have been voluntarily accepted under Section 304 of this rule, or that have been voluntarily accepted under Rule 201-Emissions Caps of these rules. Whenever more than one standard in this rule applies to any source, or whenever a standard in this rule and a standard in the Maricopa County Air Pollution Control Regulations Regulation III-Control of Air Contaminants applies to any source, the rule or combination of rules resulting in the lowest rate or lowest concentration of regulated air pollutants released to the atmosphere shall apply, unless otherwise specifically exempted or designated.
 - 302.3** A compliance plan, if applicable, which meets the requirements of Section 303 of this rule.
 - 302.4** As necessary, requirements concerning the use, maintenance, and if applicable, installation of monitoring equipment or methods.
 - 302.5** Periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit, if the applicable requirement does not require periodic testing or instrumental or non-instrumental monitoring (which may consist of recordkeeping designed to serve as monitoring). The monitoring requirements shall ensure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirement and as otherwise required under Section 304 of this rule. Recordkeeping provisions may be sufficient to meet the requirements of this rule.
 - 302.6** All emissions monitoring and analysis procedures or test methods required under the applicable requirements, including any procedures and methods promulgated under Section 114(a)(3) of the Act and including any monitoring and analysis procedures or test methods required under Section 304 of this rule.
 - 302.7** All recordkeeping requirements, including recordkeeping requirements established under Section 304 of this rule, if applicable, for the retention of records of all required monitoring data and support information for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, all strip-chart

recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

- 302.8** All applicable reporting requirements, including submittal of any required monitoring reports at least annually and prompt reporting of deviations from permit requirements, including those deviations attributable to upset conditions, as defined in the permit. Reports of deviations shall include the probable cause of the deviations and any corrective actions or preventative measures taken. For the purposes of this Section, reporting shall be considered prompt when such reporting is made in accordance with Rule 130-Emergency Provisions of these rules.
- 302.9** A severability clause to ensure the continued validity of the various permit requirements in the event of a challenge to any portion of the permit.
- 302.10** Provisions stating that it shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.
- 302.11** Provisions stating that the permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated non-compliance does not stay any permit condition.
- 302.12** Provisions stating that the permit does not convey any property rights nor does it convey exclusive privileges of any sort.
- 302.13** Provisions stating that the permittee shall furnish to the Control Officer, within a reasonable time, any information that the Control Officer may request in writing to determine whether cause exists for revising, revoking and reissuing the permit, or terminating the permit, or to determine compliance with the permit. Upon request, the permittee shall also furnish, to the Control Officer copies of records required to be kept by the permit.
- 302.14** Provisions stating that any document required to be submitted by a permit, including reports, shall contain certification by a responsible official of truth, accuracy, and completeness under Rule 100-General Provisions and Definitions of these rules.
- 302.15** A provision to ensure that a source pays fees to the Control Officer under A.R.S. §49-480(D) and Rule 280-Fees of these rules.
- 302.16** Terms and conditions for reasonably anticipated operating scenarios identified by the source in its application as approved by the Control Officer. Such terms and conditions shall require the source, contemporaneously with making a change from one operating scenario to another, to record in a log at the permitted source a record of the scenario under which it is operating. The terms and conditions of each such alternative scenario must meet all applicable requirements and the requirements of this rule.
- 302.17** Inspection and entry provisions which require the permittee to allow the Control Officer, upon presentation of proper credentials, to enter upon the permittee's premises, where a source is located or where emission-related activity is conducted, or where records are required to be kept, under the conditions of the permit.

- 302.18** Inspection and entry provisions which require the permittee to allow the Control Officer, upon presentation of proper credentials, to have access to and to copy, at reasonable times, any records that are required to be kept under the conditions of the permit.
- 302.19** Inspection and entry provisions which require the permittee to allow the Control Officer, upon presentation of proper credentials, to inspect, at reasonable times, any source's equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit.
- 302.20** Inspection and entry provisions which require the permittee to allow the Control Officer, upon presentation of proper credentials, to sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements.
- 302.21** Inspection and entry provisions which require the permittee to allow the Control Officer, upon presentation of proper credentials, to record any inspection by use of written, electronic, magnetic, and photographic media.
- 302.22** Provisions specifying the conditions under which the permit will be reopened prior to the expiration date of the permit.
- 302.23** Federally Enforceable Requirements: Designated terms and conditions contained in Non-Title V permits issued under Rule 220-Non-Title V Permit Provisions of these rules will be considered federally enforceable, provided that the County's Permit Program is approved by the Administrator and incorporated into the applicable State Implementation Plan (SIP) under Section 110 of the Act, and the permit meets the requirements set forth in Section 304 of this rule:
- a. Terms or conditions designated as federally enforceable in a Non-Title V permit, including but not limited to those that are entered into voluntarily under Section 304 of this rule and which have been submitted to the Administrator for review, include:
 - (1) Emissions limitations, controls, or other requirements; and
 - (2) Monitoring, recordkeeping, and reporting requirements associated with the emissions limitations, controls, or other requirements.
 - b. The Control Officer shall specifically designate as not being federally enforceable under the Act any terms and conditions included in a Non-Title V permit that are not required under the Act, or under any such applicable requirements, or that are not entered into voluntarily under Section 304 of this rule.
- 302.24** Provisions stating that the permittee shall comply with all conditions of the permit including all applicable requirements of Arizona air quality statutes and the air quality rules. Compliance with permit terms and conditions does not relieve, modify, or otherwise affect the permittee's duty to comply with all applicable requirements of Arizona air quality statutes and the Maricopa County Air Pollution Control Regulations. Any permit non-compliance is grounds for enforcement action; for a permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application. Non-compliance with any federally enforceable requirement in a permit constitutes a violation of the Act.

303 COMPLIANCE PLANS: Each compliance plan shall contain the following elements:

303.1 A description of the compliance status of the source with respect to applicable requirements that will become effective during the permit term or for which the source is not in compliance at the time of permit issuance.

303.2 A description as follows:

- a. For applicable requirements that will become effective during the permit term, a statement that the source will meet such requirements on a timely basis.
- b. For requirements with which the source is not in compliance at the time of permit issuance, a narrative description of how the source will achieve compliance with such requirements.
- c. For any additional requirements, as specified under Section 304 of this rule.

303.3 A compliance schedule as follows:

- a. For applicable requirements that will become effective during the permit term, a statement that the source will meet such requirements on a timely basis. A statement that the source will meet in a timely manner applicable requirements that become effective during the permit term shall satisfy this rule, unless a more detailed schedule is expressly required by the applicable requirement.
- b. A schedule of compliance for any existing sources that are not in compliance with all applicable requirements at the time of permit issuance. Such a schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirement for which the source will be in non-compliance at the time of permit issuance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction non-compliance with, the applicable requirements on which it is based.

303.4 A schedule for submission of certified progress reports no less frequently than every six months for sources required to have a schedule of compliance to remedy a violation. Such schedule shall contain:

- a. Dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when such activities, milestones, or compliance were achieved; and
- b. An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

303.5 If there is a Federal Implementation Plan (FIP) applicable to the source, a provision that compliance with the FIP is required.

303.6 The Control Officer may develop special guidance documents and forms to assist certain sources in completing the compliance plan.

304 PERMITS CONTAINING VOLUNTARILY ACCEPTED EMISSIONS LIMITATIONS, CONTROLS, OR OTHER REQUIREMENTS (SYNTHETIC MINOR):

- 304.1** A source may voluntarily propose in its application, and accept in its permit, emissions limitations, controls, or other requirements that are permanent, quantifiable, and otherwise enforceable as a practical matter in order to avoid classification as a source that requires a Title V permit, or to avoid one or more other applicable requirements. For the purposes of this rule, "enforceable as a practical matter" means that specific means to assess compliance with an emissions limitation, control, or other requirement are provided for in the permit in a manner that allows compliance with the limit standard or trade provision to be readily determined by an inspection of the source records or reports. In addition, for the purposes of this rule, "enforceable as a practical matter" shall include the following criteria:
- a. The permit conditions are permanent and quantifiable;
 - b. The permit includes a legally enforceable obligation to comply;
 - c. The permit limits impose an objective and quantifiable operational or production limit, or require the use of in-place air pollution control equipment;
 - d. The permit limits have short-term averaging times consistent with the averaging times of the applicable requirement;
 - e. The permit conditions are enforceable and are independent of any other applicable limitations; and
 - f. The permit conditions for monitoring, recordkeeping, and reporting requirements are sufficient to comply with Rule 220-Non-Title V Permit Provisions, Sections 302.3, 302.4, 302.5, 302.6, and 302.7 of these rules.
- 304.2** In order for a source to obtain a permit containing voluntarily accepted emissions limitations, controls, or other requirements, the source shall demonstrate all of the following in its permit application:
- a. The emissions limitations, controls, or other requirements to be imposed for the purpose of avoiding an applicable requirement are at least as stringent as the emissions limitations, controls, or other requirements that would otherwise be applicable to that source, including those that originate in an applicable implementation plan; and
 - b. All voluntarily accepted emissions limitations, controls, or other requirements will be permanent, quantifiable, and otherwise enforceable as a practical matter.
- 304.3** The Control Officer shall not issue a permit that waives nor makes less stringent any limitations or requirements contained in or issued under an applicable implementation plan or that are otherwise federally enforceable.
- 304.4** At the same time as notice of proposed issuance is first published under A.R.S. §49-426(D), the Control Officer shall send a copy of any Non-Title V permit proposed to be issued under this section of this rule to the Administrator for review during the comment period described in the notice under Section 407 of this rule.

304.5 The Control Officer shall send a copy of each final permit issued under Section 304 of this rule to the Administrator.

304.6 For all permits containing voluntarily accepted emission limitations, controls, or other requirements established under this section of this rule, the Control Officer shall provide an opportunity for public participation as provided for in Section 407 of this rule.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 FEES REQUIRED: Persons subject to this rule shall pay the fees required, as set forth in Rule 280-Fees of these rules.

402 PERMIT TERM: A Non-Title V permit shall remain in effect for no more than five years.

403 SOURCE CHANGES THAT REQUIRE NON-TITLE V PERMIT REVISIONS:

403.1 A source with a Non-Title V permit may make any physical change or change in the method of operation without revising the source's permit, unless (1) the change is specifically prohibited in the source's permit or (2) is a change described in the following subsections. A change that does not require a permit revision may still be subject to requirements in Section 404 of this rule.

403.2 The following changes at a source with a Non-Title V permit shall require a permit revision:

- a.** A change that would trigger a new applicable requirement or violate an existing applicable requirement;
- b.** Establishment of, or change in, an emissions cap;
- c.** A change that will require a case-by-case determination of an emissions limitation or other standard, or a source specific determination of ambient impacts, or a visibility or increment analysis;
- d.** A change that results in emissions which are subject to monitoring, recordkeeping, or reporting under Sections 302.6, 302.7, or 302.8 of this rule, if the emissions cannot be measured or otherwise adequately quantified by monitoring, recordkeeping, or reporting requirements already in the permit;
- e.** A change that will authorize the burning of used oil, used oil fuel, hazardous waste or hazardous waste fuel, or any other fuel not currently authorized by the permit;
- f.** A change that requires the source to obtain a Title V permit under Rule 210-Title V Permit Provisions of these rules;
- g.** Replacement of an item of air pollution control equipment listed in the permit with one that does not have the same or better pollutant removal efficiency;
- h.** Establishment or revision of an emissions limit under Section 304 of this rule;
- i.** Increasing operating hours or rates of production above the permitted level;

- j. Making a change that relaxes monitoring, recordkeeping, or reporting requirements, except when the change results:
 - (1) From removing equipment that results in a permanent decrease in actual emissions, if the source keeps on-site records of the change in a log that satisfies Section 500 of this rule and if the requirements that are relaxed are present in the permit solely for the equipment that was removed; or
 - (2) From a change in an applicable requirement; and
- k. A minor NSR modification as defined in Rule 100-General Provisions and Definitions of these rules.

404 PROCEDURES FOR CERTAIN CHANGES THAT DO NOT REQUIRE A NON-TITLE V PERMIT REVISION:

- 404.1** Except for a physical change or change in the method of operation at a Non-Title V source requiring a permit revision under Section 403 of this rule or a change subject to logging or written notice requirements in Section 404.2 of this rule or Section 404.3 of this rule, a change at a Non-Title V source shall not be subject to revision, notice, or logging requirements under these rules.
- 404.2** Except as otherwise provided in the conditions applicable to an emissions cap created under Rule 201-Emissions Caps of these rules, the following changes may be made if the source keeps on-site records of the changes according to Section 500 of this rule:
- a. Implementing an alternative operating scenario, including raw material changes;
 - b. Changing process equipment, operating procedures, or making any other physical change required by the permit to be logged;
 - c. Engaging in any new insignificant activity as defined in Rule 100-General Provisions and Definitions of these rules, but not listed in the permit;
 - d. Replacing an item of air pollution control equipment listed in the permit with an identical (same model, different serial number) item. The Control Officer may require verification of efficiency of the new equipment by performance tests; and
 - e. Making a change that results in a decrease in actual emissions, if the source wants to claim credit for the decrease in determining whether the source has a net emissions increase for any purpose. The logged information shall include a description of the change that will produce the decrease in actual emissions. A decrease that has not been logged is creditable only if the decrease is quantifiable, enforceable, and otherwise qualifies as a creditable decrease.
- 404.3** Except as otherwise provided in the conditions applicable to an emissions cap created under Rule 201-Emissions Caps of these rules, the following changes may be made if (1) the change does not require a permit revision pursuant to Section 403.2 of this rule and (2) the source provides written notice to the Control Officer in advance of the change as provided below:
- a. Replacing an item of air pollution control equipment listed in the permit with one that is not identical but that is substantially similar and has the same or better

pollutant removal efficiency: 7 days after the written notice is received by the Control Officer. The Control Officer may require verification of efficiency of the new equipment by performance tests;

- b. Making a physical change or change in the method of operation that increases actual emissions less than 10% of the major source threshold for any conventional air pollutant but does not require a permit revision: 7 days after the written notice is received by the Control Officer;
- c. Replacing an item of air pollution control equipment listed in the permit with one that is not substantially similar but that has the same or better efficiency: 30 days after the written notice is received by the Control Officer. The Control Officer may require verification of efficiency of the new equipment by performance tests;
- d. Making any change that would trigger an applicable requirement that already exists in the permit: 30 days after the written notice is received by the Control Officer, unless otherwise required by the applicable requirement; and
- e. Making a change that will result in emissions of a new regulated air pollutant at a rate that is less than 10% of the applicable major source threshold for that pollutant, but that does not trigger a new applicable requirement for that source category: 30 days after the date of receipt of the written notice by the Control Officer.

404.4 For each change listed under Section 404.3 of this rule, the written notice shall be made by email, certified mail or hand delivery and shall be received by the Control Officer prior to the minimum amount of time required in advance of the change. Notifications of changes associated with emergency conditions, such as malfunctions necessitating the replacement of equipment, may be provided with less than required notice, but must be provided as far in advance of the change, or if advance notification is not practicable, as soon after the change, as possible.

404.5 The written notice shall include:

- a. When the proposed change will occur;
- b. A description of the change;
- c. Any change in emissions of regulated air pollutants; and
- d. Any permit term or condition that is no longer applicable as a result of the change.

404.6 Notwithstanding any other part of Section 404 of this rule, the Control Officer may require a permit to be revised for any change that, when considered together with any other changes submitted by the same source under this section of this rule over the term of the permit, constitutes a change under Section 403.2 of this rule.

404.7 If a source change is described under both Section 404.2 of this rule and Section 404.3 of this rule, the source shall comply with Section 404.3 of this rule.

404.8 If a source change is described under both Section 404.3 of this rule and Section 403.1 of this rule, the source shall comply with Section 403.1 of this rule.

404.9 A source may implement any change under Section 404.3 of this rule without the required written notice by applying for a minor permit revision under Section 405.2 of this rule and complying with Section 406.1 of this rule.

405 PERMIT REVISIONS:

405.1 Administrative Permit Revisions:

- a. An administrative permit revision is required to correct typographical errors in a permit.
- b. An administrative permit revision is required to change the name, address, or phone number of any person identified in the permit.
- c. An administrative permit revision is required to change ownership or operational control of a source, where the Control Officer determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for the change of permit responsibility and liability between the current and new permittee has been submitted to the Control Officer.
- d. An administrative permit revision is required to incorporate any other type of change which the Control Officer has determined to be similar to those changes described in this subsection.

405.2 Minor Permit Revisions:

- a. A minor permit revision is required for a change that triggers a new applicable requirement, if all of the following apply:
 - (1) The change is not a minor NSR modification for which public participation is required under Rule 241-Minor New Source Review (NSR) of these rules;
 - (2) A case-by-case determination of an emissions limitation or other standard is not required; and
 - (3) The change does not require the source to obtain a Title V permit under Rule 210-Title V Permit Provisions of these rules.
- b. A minor permit revision is required for a change that increases emissions above the permitted level, unless the increase triggers the requirement for a non-minor permit revision in Section 405.3 of this rule;
- c. A minor permit revision is required for a change in fuel from fuel oil or coal to natural gas or propane, if not authorized in the permit;
- d. A minor permit revision is required for a change that results in emissions subject to monitoring, recordkeeping, or reporting under Sections 302.6, 302.7, or 302.8 of this rule and that cannot be measured or otherwise adequately quantified by monitoring, recordkeeping, or reporting requirements already in the permit;
- e. A minor permit revision is required for a change that decreases emissions permitted under an emissions cap under Rule 201-Emissions Caps of these rules, unless the decrease requires a change in the conditions required to enforce the emissions cap or to ensure that emissions trades conducted under the emissions cap are quantifiable and enforceable; and

- f. A minor permit revision is required for a change that replaces an item of air pollution control equipment listed in the permit with one that does not have the same or better efficiency.

405.3 Non-Minor Permit Revisions: A source may make the following changes only after its permit is revised following the public participation requirements of Section 407 of this rule:

- a. Establishing or revising a voluntarily accepted emission limitation or standard described in Section 304 of this rule, or an emissions cap described in Rule 201-Emissions Caps of these rules, except a decrease in the limitation authorized by Section 405.2(e) of this rule;
- b. Making any change in fuel not authorized by the Non-Title V permit and that is not fuel oil or coal to natural gas or propane;
- c. A change that is a minor NSR modification for which public participation is required under Rule 241-Minor New Source Review (NSR) of these rules.
- d. A change that relaxes monitoring, recordkeeping, or reporting requirements, except when the change results:
 - (1) From removing equipment that results in a permanent decrease in actual emissions, if the source keeps on-site records of the change in a log that satisfies Section 500 of this rule and if the requirements that are relaxed are present in the permit solely for the equipment that was removed; or
 - (2) From a change in an applicable requirement.
- e. A change that will cause the source to violate an existing applicable requirement, including the conditions establishing an emissions cap;
- f. A change that will require any of the following:
 - (1) A case-by-case determination of an emission limitation or other standard;
 - (2) A source-specific determination of ambient impacts or a visibility or increment analysis; or
 - (3) A case-by-case determination of a monitoring, recordkeeping, and reporting requirement.
- g. A change that requires the source to obtain a Title V permit under Rule 210-Title V Permit Provisions of these rules.

406 PERMIT REVISIONS PROCEDURES:

406.1 The Source's Responsibility for an Application for a Permit Revision: A source shall submit to the Control Officer an application for a Non-Title V permit revision, in a form and manner as prescribed by the Control Officer, with the appropriate fee as required by Rule 280-Fees of these rules. The application must supply information that is related to the proposed change. If the source's proposed permit revision will revise its permit from a Non-Title V permit to a Title V permit, then the source must submit a Title V permit application in accordance with Rule 210-Title V Permit Provisions of these rules. The Control Officer shall issue the entire Title V permit,

and not just the portion of the Non-Title V permit being revised, in accordance with Title V permit content and issuance requirements, including requirements for public, affected state, and EPA review contained in Rule 210-Title V Permit Provisions of these rules.

406.2 The Control Officer's Responsibility for Action on an Application for a Permit Revision:

- a. **Administrative Permit Revision:** The Control Officer shall take final action within 60 days of receipt of a complete application for an administrative permit revision.
- b. **Minor Permit Revision:** The Control Officer shall do one or more of the following within 60 days of receipt of a complete application for a minor permit revision:
 - (1) Issue the minor permit revision as proposed;
 - (2) Deny the minor permit revision application; or
 - (3) Determine that the minor permit revision does not meet the minor permit revision criteria and should be reviewed under the non-minor permit revision procedures.
- c. **Non-Minor Permit Revision:** The Control Officer shall take final action on the majority of the complete applications for non-minor permit revisions within 90 days of receipt. In no case shall the final action take longer than nine months.

406.3 The Source's Ability to Make Changes Requested in an Application for a Permit Revision:

- a. **Administrative Permit Revision or Minor Permit Revision:**
 - (1) A source may implement the changes addressed in the administrative permit revision application or in a minor permit revision application after it files the application, unless the revision triggers a minor NSR modification under Rule 241-Minor New Source Review (NSR) of these rules.
 - (2) A source shall still comply with any Federal laws, Arizona laws, or these rules, and a source shall comply with the "new" permit conditions that the source proposes in its application for a minor permit revision. The Control Officer may enforce the existing permit conditions if the Control Officer determines that the source is not complying with the "new" permit conditions.
- b. **Non-Minor Permit Revision:** A source shall not implement the changes addressed in the application for a non-minor permit revision until the Control Officer issues a revised permit.

407 PUBLIC PARTICIPATION:

- 407.1 Provide Public Notice Before Taking Action on a Permit:** The Control Officer shall provide public notice and an opportunity for public comment before taking any of the following actions:

- a. Issuing, denying, or renewing a permit to a Non-Title V source with emissions of a regulated air pollutant that exceeds the public notice threshold as defined in Rule 100-General Provisions and Definitions of these rules;
- b. Issuing or denying a non-minor permit revision to a Non-Title V source with emissions of a regulated air pollutant that exceeds the public notice threshold as defined in Rule 100 of these rules;
- c. Revoking and reissuing or reopening a permit to a Non-Title V source with emissions of a regulated air pollutant that exceeds the public notice threshold as defined in Rule 100 of these rules; or
- d. Issuing a conditional permit under Rule 120-Conditional Orders of these rules to a Non-Title V source with emissions of a regulated air pollutant that exceeds the public notice threshold as defined in Rule 100 of these rules.

407.2 Provide Information in Public Notice and Publish in Newspapers Before

Taking Action on a Permit: The Control Officer shall include the following in the notice required pursuant to Section 407.1 of this rule and shall publish such notice once each week for two consecutive weeks in two newspapers of general circulation in the county where the source is or will be located and by other means if necessary to assure adequate notice to the affected public.

- a. Name and address of the affected facility(ies).
- b. The activity(ies) involved in each permit action.
- c. A statement that any person may submit written comments on a proposed permit action no later than the deadline for submitting such comments.
- d. The deadline for submitting written comments.
- e. Name, address, and phone number of a person from the Department from whom additional information may be obtained.
- f. The location where copies of the permit or permit revision application, the proposed permit, the analysis in support of the preliminary determination whether the application for a permit or permit revision should be approved or disapproved, and all other materials available to the Control Officer that are relevant to the permit decision may be reviewed and the times during which such materials will be available for public inspection.
- g. A statement if the permit or permit revision would result in the generation of emission reduction credits under A.A.C. R18-2-1204-Title 18, Chapter 2, Article 12 or the utilization of emission reduction credits under A.A.C. R18-2-1206 Title 18, Chapter 2, Article 12.
- h. The Control Officer's preliminary determination whether the application for a permit or permit revision should be approved or disapproved.

407.3 Publish List of Permit Applications Received: The Control Officer shall publish, once each week, a list of all permit applications received. The list will be available to the public at the Department's main office and on the Department's website.

- 407.4 Publish List of Permits Issued:** The Control Officer shall publish in a newspaper or post on the Department's website, once each month, a list of all permits issued.
- 407.5 Public Hearing:** The Control Officer shall hold a public hearing to receive comments on petitions for conditional orders, which would vary from requirements of the applicable implementation plan. For all other actions involving a proposed permit, the Control Officer shall hold a public hearing only upon written request. If a public hearing is requested, the Control Officer shall schedule the public hearing and publish a notice once each week for two consecutive weeks in two newspapers of general circulation in the county where the source is or will be located and by other means if necessary to assure adequate notice to the affected public. The Control Officer shall give notice of any public hearing at least 30 days in advance of the public hearing.
- 407.6 Public Notice to be Posted by the Permit Applicant:** At the time the Control Officer publishes the first notice under Section 407.1 of this rule, the applicant shall post a notice containing the information required in Section 407.2 of this rule at the site where the source is or may be located. Consistent with Federal, State, and local law, the posting shall be prominently placed at a location under the applicant's legal control, adjacent to the nearest public roadway, and visible to the public using the public roadway. If a public hearing is to be held, the applicant shall place an additional posting providing notice of the public hearing. Any posting shall be maintained until the public comment period is closed.
- 407.7 Receipt of Comments and Requests for Public Hearing:** The Control Officer shall provide at least 30 days from the date of its first notice for public comment to receive comments and requests for a hearing. The Control Officer shall keep a record of the commenters and the issues raised during the public participation process and shall prepare written responses to all comments received. At the time a final decision is made, the record and copies of the Control Officer's responses shall be made available to the applicant and to all commenters.

408 AMENDMENTS TO A PERMIT: The Control Officer may amend any Non-Title V permit annually without following the Rule 200-Permit Requirements, Section 402-Permit Reopenings; Revocation and Reissuance; Termination provisions of these rules in order to incorporate changes reflected in logs maintained pursuant to Section 404.2 of this rule or written notices filed under Section 404.3 of this rule. The amendment shall be effective to the renewal date of the permit. The Control Officer shall make available to the public for any source:

408.1 A complete record of logs and notices sent to the Control Officer under Section 404 of this rule; and

408.2 Any amendments to the source's permit made under this rule.

SECTION 500 – MONITORING AND RECORDS

501 LOG RETENTION REQUIREMENT: If a source makes a change that requires logging, then the source shall keep such log for five years from the date the source creates such log.

502 LOG FORMAT SPECIFICATIONS: If a source makes a change that requires logging, then the source shall perform such logging in indelible ink in a bound log book with sequentially numbered pages, or in any other form, including electronic format, if approved by the Control Officer. Each log entry shall include at least the following information:

502.1 A description of the change including:

- a. A description of any process change.
- b. A description of any equipment change, including both old and new equipment descriptions, model numbers, and serial numbers, or any other unique equipment number.
- c. A description of any process material change.

502.2 The date and time that the change occurred.

502.3 The provision of Section 404.2 of this rule that authorizes the change to be made with logging.

502.4 The date the log entry was made and the first and last name of the person making the log entry.

503 LOG FILING: A copy of all logs required under Section 404.2 of this rule shall be filed with the Control Officer within 30 days after each anniversary of the permit issue date. If no changes were made at the source requiring logging, a statement to that effect shall be filed instead.

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION II – PERMITS AND FEES**

**RULE 240
FEDERAL MAJOR NEW SOURCE REVIEW (NSR)**

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Adopted 11/15/1993; Revised 02/15/1995; Revised 02/07/2001; Revised 05/07/2003; Revised 06/06/2007; Repealed and Adopted 02/03/2016; **Revised 12/11/2019**

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION II – PERMITS AND FEES**

**RULE 240
FEDERAL MAJOR NEW SOURCE REVIEW (NSR)**

SECTION 100 – GENERAL

- 101 PURPOSE:** To implement the federal new source review requirements, including nonattainment area new source review requirements of sections 172(c)(5) and 173 of the Clean Air Act for any area designated nonattainment for any national ambient air quality standard under 40 CFR 81.303 and attainment area prevention of significant deterioration requirements of section 165 of the Clean Air Act for any area designated attainment or unclassifiable under sections 107(d)(1)(A)(ii) or (iii) of the Clean Air Act. This is a preconstruction review and permitting program applicable to new or modified major stationary sources in areas designated nonattainment, attainment or unclassifiable.
- 102 APPLICABILITY:** The provisions of this rule apply to any new major stationary source or major modification to an existing major stationary source of regulated NSR pollutants.
- 103 INCORPORATION BY REFERENCE:** Except as otherwise provided in this rule, the CFR sections adopted as of July 1, 2019, as cited in this rule, are incorporated by reference into this rule and made part of the Maricopa County Air Pollution Control Regulations. This incorporation by reference includes no future editions or amendments.

SECTION 200 – DEFINITIONS: In the event of any inconsistency between any of the Maricopa County Air Pollution Control Regulations, the definitions in this rule take precedence. See Rule 100 (General Provisions and Definitions) of these rules for definitions of terms that are used but not defined in this rule.

- 201** The definitions contained in 40 CFR 51.100 and 40 CFR 51.103 are applicable to all portions of this rule.
- 202** The definitions contained in 40 CFR 51.165(a)(1) are applicable to Section 304 of this rule.
- 202.1** The following incorporated definitions in 40 CFR 51.165(a)(1) are revised as follows:
- a.** In the definition of “net emissions increase”, the term “reasonable period” shall be replaced with “Between the dates five years before a complete application for a permit or permit revision authorizing the particular change is submitted or actual construction of the particular change begins, whichever occurs earlier, and the date that the increase from the particular change occurs.”
 - b.** The definition of the term “projected actual emissions” as defined in 40 CFR 51.165(a)(1)(xxviii) (B)(1) shall be revised to include “Maricopa County” and read

as "...the company's filings with Maricopa County, the State or Federal regulatory authorities..."

c. The term "reviewing authority" shall be replaced with "Control Officer".

202.2 The following definitions of 40 CFR 51.165(a)(1) are excluded: (xliii), (xliv), (xlv), and (xlvi).

203 The definitions contained in 40 CFR 52.21(b) are applicable to Section 305 of this rule.

203.1 The following incorporated definitions in 40 CFR 52.21(b) are revised as follows:

a. In the definition of "net emissions increase", paragraph 40 CFR 52.21(b)(3)(ii)(a) shall read as "The date five years before a complete application for a permit or permit revision authorizing the particular change is submitted or actual construction of the particular change begins, whichever occurs earlier; and".

204 The definitions of the terms "major source" and "major modification" as used throughout this rule have the meanings as defined in 40 CFR 51.165(a)(1) when referring to nonattainment pollutants and as defined in 40 CFR 52.21(b) for all other pollutants.

SECTION 300 – STANDARDS

301 PERMIT OR PERMIT REVISION REQUIRED: No person shall begin actual construction of a new major source or a major modification subject to the requirements of this rule without first obtaining a proposed final permit from the Control Officer.

302 APPLICATION COMPLETENESS: An application for a permit or a permit revision under this rule, other than a PAL permit issued pursuant to Sections 304 and/or 305 of this rule, shall not be considered complete unless the applicant demonstrates that:

302.1 The impact analyses requirements in Section 304.16 and Section 305 of this rule are met and demonstrate that the new major source or major modification will not interfere with the attainment or maintenance of any applicable NAAQS.

302.2 The proposed major source or major modification of a major source will comply with any applicable new source performance standards (NSPS) in 40 CFR Part 60.

302.3 The new major source or major modification will not have an adverse impact on visibility in any Federal Class I area or mandatory Class I Federal area, as determined by Sections 304 and/or 305 of this rule and the applicant will satisfy all the applicable visibility requirements contained in Sections 304 and/or 305 of this rule. If required by Sections 304 or 305 of this rule, a demonstration of the impact on visibility shall be made according to the requirements of 40 CFR 51.307(a), 40 CFR 52.21(o), and (p)(1) through (p)(4) as incorporated by reference and shall be included with the application.

302.4 All applicable requirements of the SIP will be met, including but not limited to the requirements contained in Rule 200 (Permit Requirements), Rule 210 (Title V Permit Provisions), Rule 240 (Federal Major New Source Review (NSR)), Rule 241 (Minor New Source Review (NSR)), Rule 245 (Continuous Source Emission Monitoring), and Rule 270 (Performance Tests) of these rules.

- 302.5** The new major source or major modification will be in compliance with whatever emission limitation, design, equipment, work practice or operational standard, or combination thereof is applicable to the source or modification to satisfy BACT or LAER as applicable.
- 302.6** The new major source or major modification will the applicable standards for hazardous air pollutants contained in Section 112 of the Clean Air Act.
- 302.7** The new major source or major modification will comply with all applicable requirements of Regulation III-Control of Air Contaminants of these rules.

303 ACTION ON APPLICATION AND NOTIFICATION REQUIREMENTS: Unless the specific requirement has already been satisfied under Rule 210 of these rules, the Control Officer shall comply with the following requirements:

- 303.1** Within 60 days after receipt of an application for a permit or a permit revision subject to this rule, or of any addition to such application, the Control Officer shall advise the applicant of any deficiency in the application. The date of receipt of the application shall be, for the purpose of this rule, the date on which the Control Officer received all required information and deemed the application complete. The permit application shall not be deemed complete solely because the Control Officer failed to meet the requirements of this section.
- 303.2 Permit Issuance:** Prior to issuing a permit or permit revision pursuant to this rule, the Control Officer shall:
- a. Make a preliminary determination whether the permit or permit revision should be approved with conditions or disapproved.
 - b. Make available in at least one location, including the closest Department office, a copy of all materials the applicant submitted, a copy of the preliminary determination, a copy of the proposed permit and a copy or summary of other materials, if any, considered in making the preliminary determination. Permits or permit revisions subject to the provisions in Section 305 of this rule, shall also make available the degree of increment consumption that is expected from the source or modification.
 - c. Notify the public of the application, the preliminary determination and the opportunity for a public hearing and to submit written comments in accordance with the public participation requirements in Rule 210 of these rules. In case of an application subject to Section 305 of this rule, the notice shall include the degree of consumption of the maximum allowable increases allowed under limitation of pollutants in classified attainment and unclassified areas that is expected to occur as a result of emissions from the proposed source or modification.
 - d. Send a copy of the notice requesting public comment to the permit applicant, the Administrator, and the following officials and agencies having cognizance of the location where the proposed major source or major modification would occur:
 - (1) The Board of Supervisors for the county wherein the proposed or existing source that is the subject of the permit or permit revision application is located;

- (2) The city or town managers of the city or town which contains, and any city or town the boundaries of which are within five miles of the location of the proposed or existing source that is the subject of the permit or permit revision application;
 - (3) Any regional land use planning agency with authority for land use planning in the area where the proposed or existing source that is the subject of the permit or permit revision application is located; and
 - (4) Any State, Federal Land Manager, or Indian governing body whose lands may be affected by emissions from the proposed source or modification.
- e. Consult with the Federal Land Manager on a proposed major stationary source or major modification that may impact visibility in any Class I Area, in accordance with 40 CFR 51.307, as incorporated by reference.
 - f. Provide opportunity for a public hearing for persons to appear and submit written or oral comments on the air quality impact of the source, alternatives to it, the control technology required, and other appropriate considerations, if in the Control Officer's judgment such a hearing is warranted. The Control Officer shall give notice of any public hearing at least 30 days in advance of the hearing.
 - g. Consider all written comments that were submitted within the 30 day public comment period and all comments received at any public hearing in making a final determination on the approvability of the application and make all comments available, including the Control Officer's response to the comments, for public inspection in the same location where the Control Officer made available preconstruction information relating to the proposed source or modification.
 - h. Make a final determination whether the permit or permit revision should be approved with conditions or denied within one year of the proper filing of the complete application. The Control Officer shall notify the applicant in writing of his approval or of his denial.
- 303.3** The authority to construct and operate a new major source or major modification under a permit or permit revision issued under this rule shall terminate if the owner or operator does not commence the proposed construction within 18 months of issuance, or if during the construction, the owner or operator suspends work for more than 18 months. The Control Officer may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between construction of approved phases of a phased construction project; each phase must commence construction within 18 months of the projected and approved commencement date.
- 303.4** Within 30 days of the issuance of any permit under this rule, the Control Officer shall submit control technology information from the permit to the Administrator for the purposes listed in Section 173(d) of the Clean Air Act.
- 303.5** Prior to issuance of a preliminary decision to issue a permit or permit revision for a new major stationary source or major modification, the Control Officer shall make each of the following determinations:

- a. That the new or modified source will not violate applicable SIP requirements.
- b. That the new or modified source will not interfere with the attainment or maintenance of any applicable NAAQS.
- c. For applications subject to Section 305, that the new or modified source will not cause or contribute to a violation of a prevention of significant deterioration (PSD) increment identified in Section 305 of this rule.
- d. That the new or modified source has met the BACT or LAER control technology requirements as applicable in Sections 304 and/or 305 of this rule.

304 PERMIT REQUIREMENTS FOR NEW MAJOR SOURCES OR MAJOR MODIFICATIONS LOCATED IN NONATTAINMENT AREAS: The provisions of this section apply to new major stationary sources and major modifications to existing major stationary sources located in areas designated as nonattainment in 40 CFR 81.303 and which would be major for the nonattainment regulated NSR pollutant. Such sources are subject to nonattainment new source review.

304.1 Emission Calculation Requirements to Determine NSR Applicability: Except for an application for a PAL permit subject to Section 304.8 of this rule, the provisions contained in 40 CFR 51.165(a)(2)(ii)(A) through (F) shall be used to determine if a proposed project will result in a new major stationary source or a major modification to an existing stationary source. These provisions shall not be used to determine the quantity of offsets required for a project subject to the requirements of Section 304 of this rule.

304.2 Emission Offsets: Increased emissions, calculated pursuant to Section 304.4(d) of this rule, from a major source or major modification subject to Section 304 of this rule shall be offset by reductions in the emissions of each pollutant for which the area has been designated as nonattainment and for which the proposed project will result in a new major stationary source or a major modification for that nonattainment pollutant. Unless an offset ratio is provided for the applicable nonattainment pollutant in Section 304.5 of this rule, the offset ratio of total actual emissions reductions to emission increases shall be at least 1 to 1.

304.3 Baseline for Determining Credit for Offsets: The baseline for determining credit for emissions reductions shall be the actual emissions of the source from which offset credit is obtained.

304.4 Offset and Emission Reduction Requirements:

- a. All emission reductions claimed as offset credit shall meet the provisions contained in 40 CFR 51.165(a)(3)(ii)(A) through (D) and 40 CFR 51.165(a)(3)(ii)(G).
- b. All emission reductions claimed as offset credits shall be federally enforceable by the time a permit is issued to the owner or operator of the major source subject to this rule and shall be in effect by the time the new or modified source subject to the permit commences operations.
- c. Location of offsetting emissions: The applicant of a major source or major modification subject to this rule must obtain offset credits from the same source

or from other sources in the same nonattainment area, except that the Control Officer may allow the applicant to obtain offset credits from another nonattainment area if the provisions contained in 40 CFR Part 51 Appendix S (IV)(D) are satisfied.

- d. The total tonnage of increased emissions, in tons per year, resulting from a major modification that must be offset under this rule shall be determined by summing the difference between the allowable emissions after the modification and the actual emissions before the modification for each emissions unit.
- e. Interpollutant offsetting:

~~(1) For the purposes of satisfying the offset requirements, the provisions contained in 40 CFR Part 51, Appendix S (IV)(G)(5) apply. The Control Officer may approve interpollutant emission offsets for precursor pollutants on a case by case basis, except for PM₁₀ and PM_{2.5}, which are subject to Sections 304.4(e)(2) and 304.5(e)(2) of this rule. In such cases, the Control Officer shall impose, based on an air quality analysis, emission offset ratios in addition to the requirements of Sections 304.2 and 304.5 of this rule. Interpollutant emission offsets used at a major stationary source must receive written approval by the Administrator.~~

- (2) Interpollutant offsets between PM₁₀ and PM₁₀ precursors are not allowed.
- (3) PM₁₀ emissions shall not be allowed to offset Nitrogen Oxides or Volatile Organic Compound (VOC) emissions in ozone nonattainment areas.
- (4) In no case shall the compounds excluded from the definition of VOC be used as offsets for VOC.
- (5) Interpollutant offsets between PM_{2.5} and PM_{2.5} precursors are not allowed unless modeling has been used to demonstrate appropriate PM_{2.5} interpollutant offset ratios as approved in a PM_{2.5} Attainment Plan.

304.5 Offset Ratios for Ozone Nonattainment Areas: In meeting the emissions offset requirements of Section 304.2 of this rule for ozone nonattainment areas, the offset ratio of total actual emissions reductions of VOC or nitrogen oxides to the emissions increase of VOC or nitrogen oxides shall be as follows:

- a. In any marginal nonattainment area for ozone – at least 1.1 to 1;
- b. In any moderate nonattainment area for ozone – at least 1.15 to 1; or
- c. In any serious, severe, or extreme nonattainment area for ozone the applicable ratio as provided in 40 CFR 51.165(a)(9)(ii)(C) through (E) and 40 CFR 51.165(a)(9)(iii).

304.6 Source Obligations:

- a. The issuance of a permit or permit revision under this rule in accordance with this section shall not relieve the owner or operator of the responsibility to comply fully with applicable provisions of the SIP and any other requirements under local, State, or Federal law.

- b. At such time that a particular source or modification becomes a major source or major modification solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of this rule shall apply to the source or modification as though construction had not yet commenced on the source or modification.
- c. Any owner or operator who constructs or operates a source or modification not in accordance with the application submitted pursuant to this rule, any changes to the application as required by the Control Officer, or with the terms of its permit, shall be subject to enforcement action.

304.7 Non-Major Modifications that Result in Reasonable Possibility of Significant Emissions Increase: The provisions of this section shall apply with respect to any regulated NSR pollutant emitted from projects at existing emissions units at a major stationary source, other than at a source with a PAL, in circumstances where there is a reasonable possibility, within the meaning of 40 CFR 51.165(a)(6)(vi), that a project that is not part of a major modification may result in a significant emissions increase of such pollutant and the owner or operator elects to use the method specified in the definition of projected actual emissions in 40 CFR 51.165(a)(1)(xxviii)(B)(1) through (3) for calculating projected actual emissions. The owner or operator shall meet the following requirements:

- a. Comply with the procedures in 40 CFR 51.165(a)(6)(i) through (vi).
- b. Make the information required to be documented and maintained pursuant to this section available for review upon a request for inspection by the Control Officer or the general public pursuant to the requirements contained in 40 CFR 70.4(b)(3)(viii).

304.8 Plantwide Applicability Limits (PAL) Permit:

- a. The Control Officer shall issue a PAL permit for any existing major stationary source according to the provisions contained in 40 CFR 51.165(f)(1) through (15).
- b. The term “PAL” shall mean “actuals PAL” as used in Section 304.8 of this rule.

304.9 Permit Issuance: Except as provided in Section 304.11 through Section 304.14 of this rule, the Control Officer shall not issue any permit or permit revision under this rule to an applicant proposing to construct a new major source or proposing to make a major modification for the pollutant for which the area is designated nonattainment unless:

- a. The Control Officer has determined that the new major source or the major modification will meet an emission limitation which is the lowest achievable emission rate (LAER) for that source for that regulated NSR pollutant.
- b. The Control Officer has determined that all existing major sources owned or operated by the applicant (or any entity controlling, controlled by, or under common control with such person) in the State are in compliance with, or are on a schedule of compliance for, all conditions contained in permits for each of the

sources and all other applicable emission limitations and standards under the Act and in this rule.

- c. The Control Officer has determined that emission reductions for the specific pollutant(s) from the new major source or major modification meet the offset requirements of Sections 304.2 through 304.5 of this rule.
- d. The Administrator has not determined that the applicable implementation plan is not being adequately implemented for the nonattainment area.

304.10 No permit or permit revision under this rule shall be issued for a new major source or major modification to a major source located in a nonattainment area unless:

- a. The applicant performs an analysis of alternative sites, sizes, production processes and environmental control techniques for such new major source or major modification; and
- b. The Control Officer determines that the analysis demonstrates that the benefits of the new major source or major modification significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification.

304.11 Secondary emissions shall not be considered in determining the potential to emit of a new source or modification and therefore whether the new source or modification is major. However, if a new source or modification is subject to this rule on the basis of its direct emissions, a permit or a permit revision shall be denied, unless the requirements in Sections 304.9(a) and (b) of this rule are met, for reasonably quantifiable secondary emissions caused by the new source or modification.

304.12 Fugitive emissions shall not be considered in determining the potential to emit of a new source or modification that would be a major stationary source or a major modification only if fugitive emissions, to the extent quantifiable, are considered in calculating the potential emissions of the new source or modification, if the source does not belong to a source category listed in 40 CFR 51.165(a)(1)(iv)(c)(1)through(27).

304.13 The requirements of Sections 304.4 and 304.9(c) of this rule shall not apply to temporary emissions units, such as pilot plants or portable facilities that will be relocated outside of the nonattainment area, and the construction phase of a new source, if those units will operate for no more than 12 months in the nonattainment area, are otherwise in compliance with the requirement to obtain a permit under this rule, and are in compliance with the conditions of their permit.

304.14 A decrease in actual emissions shall be considered in determining the net emission increase of a new source or modification only to the extent that the Control Officer has not relied on it in issuing any permit or permit revision under these rules (including the issuance of any ERC (Emission Reduction Certificate), or the State has not relied on it in demonstrating attainment or reasonable further progress (RFP).

304.15 Ambient Air Quality Standards Impact Analysis: The Control Officer may require the use of an air quality model to estimate the effects of a new or modified stationary source. The analysis shall estimate the effects of the new or modified stationary source, and verify that the new or modified stationary source will not prevent or

interfere with the attainment or maintenance of any ambient air quality standard. In making this determination the Control Officer shall take into account the mitigation of emissions through offsets pursuant to this rule and the impacts of transported pollutants on downwind pollutant concentrations. The Control Officer may impose, based on an air quality analysis, offset ratios greater than the requirements of Sections 304.2 and 304.5 of this rule.

- 304.16** All estimates of ambient concentrations required pursuant to this rule shall be based on the applicable air quality models, data bases, and other requirements specified in 40 CFR 51, Appendix W (Guideline on Air Quality Models) as of July 1, 2019 (and no future amendments or additions) as incorporated by reference and consistent with the provisions in Rule 200 (Permit Requirements), Section 407 of these rules.
- 304.17** The applicant of a proposed new major source or major modification that may affect visibility of a Class I area shall provide the Control Officer with an analysis of impairment to visibility that would occur as a result of the source or modification as required by 40 CFR 51.307(b)(2) and in accordance with 40 CFR 51.166(o).

305 PERMIT REQUIREMENTS FOR NEW MAJOR SOURCES OR MAJOR MODIFICATIONS LOCATED IN ATTAINMENT OR UNCLASSIFIABLE AREAS: The provisions of this section apply to new major stationary sources and major modifications to existing major stationary sources located in areas designated as attainment or in areas that are unclassifiable for any NAAQS . Such sources are subject to the federal prevention of significant deterioration (PSD) program. The intent of Section 305 of this rule is to implement the federal prevention of significant deterioration (PSD) program by incorporating the program requirements into this rule by reference.

305.1 Incorporation by Reference Revisions: The provisions of 40 CFR 52.21, which are incorporated by reference pursuant to Section 103 of this rule, are revised as follows:

- a. Paragraphs (a)(1), (b)(55-58), (f), (g), (p)(6-8), (q), (s), (t), (u), (v), (x), (y), (z), and (cc) are excluded from the incorporation of 40 CFR 52.21.
- b. The term “administrator” shall read as follows:
 - (1) “EPA Administrator” in 40 CFR 52.21 (b)(3), (b)(17), (b)(37)(i), (b)(43), (b)(48)(ii)(c), (b)(49), (b)(50)(i), (b)(51), (l)(2) and (p)(2); and
 - (2) “Control Officer” elsewhere, as defined in Rule 100 of these rules.
- c. The phrase “paragraph (q) of this section” in 40 CFR 52.21(l)(2) and (p)(1) shall read as follows: the public participation provisions of Rule 210 of these rules.
- d. The definition of the term “Subject to regulation” as defined in 40 CFR 52.21(b)(49) shall read as follows: “Subject to regulation means, for any air pollutant, excluding greenhouse gases (GHGs), that the pollutant is subject to either a provision in the Clean Air Act, or a nationally-applicable regulation codified by the Administrator in subchapter C of this chapter, that requires actual control of the quantity of emissions of that pollutant, and that such a control requirement has taken effect and is operative to control, limit or restrict the quantity of emissions of that pollutant released from the regulated activity.”

- e. In the definition of “net emissions increase”, paragraph 40 CFR 52.21(b)(3)(i)(a) shall read as “The date five years before a complete application for a permit or permit revision authorizing the particular change is submitted or actual construction of the particular change begins, whichever occurs earlier; and”.

305.2 Notification Requirements: The Control Officer shall provide written notice of any permit application for a proposed major stationary source or major modification to the Administrator. Such notification shall include a copy of all information relevant to the permit application and shall be given within 30 days of receipt and at least 60 days prior to any public hearing on the application for a permit to construct.

305.3 Permit Issuance: The Control Officer shall not issue any permit or permit revision under this rule to an applicant proposing to construct a new major source or proposing to make a major modification for the pollutant for which the area is designated attainment or unclassifiable for any NAAQS, unless:

- a. The Control Officer has determined that the proposed new major source or major modification meets all applicable requirements of 40 CFR 52.21.
- b. The applicant performs an air quality impact assessment (AQIA) which demonstrates that allowable emissions increases from the proposed major source or major modification, in conjunction with all other applicable emission increases or reductions, including secondary emissions, would not contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any NAAQS, or interfere with any other State’s SIP provisions to prevent significant deterioration of air quality or to protect visibility.
 - (1) A new major source or major modification shall be presumed to cause or contribute to a violation of the NAAQS when such source or modification would, at a minimum, exceed the significance levels for any nonattainment pollutant listed in 40 CFR 51.165(b)(2) at any locality that does not or would not meet the applicable NAAQS.
 - (2) A new major source or major modification subject to Section 305.3(b)(1) of this rule may reduce the impact of its emissions upon air quality by obtaining significant emission reductions to, at a minimum, compensate for its adverse ambient impact where the major source or major modification would otherwise cause or contribute to a violation of any NAAQS. In the absence of such emission reductions, the Control Officer shall deny the proposed permit or permit revision.
 - (3) The presumption provision in Section 305.3(b)(1) of this rule may be rebutted for a new major source or major modification if it can be satisfactorily demonstrated to the Control Officer that emissions with respect to a particular pollutant from the new major source or major modification will not cause or contribute to violations of the NAAQS in designated nonattainment areas under section 107 of the Clean Air Act.
 - (4) The demonstration allowed by Section 305.3(b)(1) of this rule may include a showing that topographical, meteorological or other physical factors in the vicinity of the new major source or major modification are such that

transport of the pollutants emitted from the source are not expected to contribute to violations of a NAAQS in the adjacent nonattainment areas.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS (NOT APPLICABLE)

SECTION 500 – MONITORING AND RECORDS (NOT APPLICABLE)

**MARICOPA COUNTY
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**RULE 241
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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION II – PERMITS AND FEES**

**RULE 241
MINOR NEW SOURCE REVIEW (NSR)**

SECTION 100 – GENERAL

- 101 PURPOSE:** To provide a procedure for the review of new sources and modifications to existing sources of air pollution requiring permits or permit revisions for the protection of the national ambient air quality standards (NAAQS).
- 102 APPLICABILITY:** Except as provided in Section 103 of this rule, the provisions of this rule shall apply to the construction of any new or modified stationary source, when:
- 102.1** A new source has the potential to emit a regulated minor NSR pollutant in an amount equal to or greater than any of the permitting thresholds specified in Rule 100 of these rules; or
- 102.2** An existing source increases its potential to emit a regulated minor NSR pollutant by an amount equal to or greater than any of the minor NSR modification thresholds specified in Rule 100-General Provisions and Definitions of these rules.
- 103 EXEMPTION:** The provisions of this rule shall not apply to any of the sources identified in Section 102 of this rule, if the emissions are subject to major source requirements under Rule 240-Federal Major New Source Review (NSR) of these rules.

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.

SECTION 300 – STANDARDS:

- 301 PERMIT OR PERMIT REVISION REQUIRED:** An owner or operator of a source shall not begin actual construction:
- 301.1** Of a new stationary source without first obtaining a permit or a proposed final permit from the Control Officer in accordance with the requirements of Rule 210 or Rule 220 of these rules.
- 301.2** Of a minor NSR modification without first obtaining a permit revision or a proposed final permit revision from the Control Officer in accordance with the requirements of Rule 210 or Rule 220 of these rules.
- 302 CONTROL TECHNOLOGY REQUIREMENTS:** The Control Officer shall not issue a permit or permit revision to an owner or operator of a source proposing to construct a new source or make a modification unless such owner or operator implements Best

Available Control Technology (BACT) or Reasonably Available Control Technology (RACT), as required by Sections 304 or 305 of this rule.

303 AMBIENT AIR QUALITY IMPACT ASSESSMENT REQUIREMENTS:

Notwithstanding the implementation of RACT or BACT under this rule, an applicant for a permit or permit revision subject to this rule shall conduct an ambient air quality impact assessment under Section 308 of this rule upon the Control Officer's request. The Control Officer shall make such request, if there is reason to believe that a new source or minor NSR modification could interfere with attainment or maintenance of a national ambient air quality standard. In making the determination under this section of this rule, the Control Officer shall take into consideration:

303.1 The source's emission rates.

303.2 The location of emission units within the facility and their proximity to the ambient air.

303.3 The terrain in which the source is or will be located.

303.4 The source type.

303.5 The location and emissions of nearby sources.

303.6 Background concentrations of regulated minor NSR pollutants.

304 BACT REQUIRED: An applicant for a permit or permit revision subject to Rules 210, 220, or 230 of these rules shall implement BACT for each pollutant emitted which meets any of the emission threshold limits set forth in any one of the following criteria:

304.1 Any new stationary source which has the potential to emit:

- a. 40 or more tons/yr of volatile organic compounds; or
- b. 40 or more tons/yr of nitrogen oxides; or
- c. 40 or more tons/yr of sulfur dioxide; or
- d. 15 or more tons/yr of PM₁₀; or
- e. 100 or more tons/yr of carbon monoxide; or
- f. 10 or more tons/yr of PM_{2.5}; or
- g. 0.3 or more tons/yr of lead.

304.2 Any modified existing stationary source if the modification causes an increase in the source's potential to emit in any one of the amounts listed in Sections 304.2(a)–(g) of this rule.

- a. 40 or more tons/yr of volatile organic compounds; or
- b. 40 or more tons/yr of nitrogen oxides; or
- c. 40 or more tons/yr of sulfur dioxide; or
- d. 15 or more tons/yr of PM₁₀; or
- e. 100 or more tons/yr of carbon monoxide; or

- f. 10 or more tons/yr of PM_{2.5}; or
- g. 0.3 or more tons/yr of lead.

305 RACT REQUIRED: An applicant for a permit or permit revision subject to Rules 210, 220, or 230 of these rules shall implement RACT for each pollutant emitted for which the increase in potential to emit is less than the BACT thresholds set forth in Section 304 of this rule.

306 BACT DETERMINATIONS: The Control Officer shall determine BACT, as appropriate, for each emission unit subject to the BACT requirements under Section 304 of this rule. BACT shall be determined as follows:

306.1 An applicant for a permit or permit revision for a new or modified stationary source shall present an emissions analysis to determine whether the emissions increase from the project will trigger BACT requirements.

306.2 The applicant shall conduct a BACT analysis for each pollutant which exceeds the BACT requirement threshold. The applicant may conduct a case-by-case analysis.

306.3 The applicant may accept legally and practically enforceable limits on the operation of their source in order to restrict emissions to below the BACT requirement thresholds and avoid imposition of BACT in accordance with Rule 220, Section 304 of these rules. If the applicability of any requirement of this rule would be triggered by an existing source solely by virtue of a relaxation of any enforceable limitation on the capacity of the source to emit a pollutant, then the requirements of this rule will apply to the source in the same way as they would apply to a new or modified source otherwise subject to this rule.

306.4 In the case of a modification, the selection of BACT shall address the emission unit or group of emission units being modified.

307 RACT DETERMINATIONS: The Control Officer shall determine RACT, as appropriate, for each emission unit subject to the RACT requirements under Section 305 of this rule. RACT shall be determined as follows:

307.1 For any source subject to a source-specific rule under Regulation III-Control of Air Contaminants of these rules, RACT is the emissions limitations that are applicable to an emission unit at the time the permit is issued.

307.2 For any source not subject to a source-specific rule under Regulation III-Control of Air Contaminants of these rules, RACT is the lowest emission limitation that a particular source is capable of achieving by the application of control technology that is reasonably available considering technological and economic feasibility. The following sources of control technology shall be evaluated in making a RACT determination:

- a. Technology that has been applied to a similar, but not necessarily identical, source category. RACT for a particular source is determined on a case-by-case basis, considering the technological feasibility and cost-effectiveness of the application of the control technology to the source category.

- b. A control technique guideline issued by the Administrator under section 108(f)(1) of the Act.
- c. An emissions standard established or revised by the Administrator for the same type of source under Sections 111 or 112 of the Act after November 15, 1990.

307.3 In the case of a modification, the selection of RACT shall address the emission unit or group of emission units being modified.

308 **AMBIENT AIR QUALITY IMPACT ASSESSMENTS:** An ambient air quality impact assessment, if required by Section 303 of this rule, must demonstrate that emissions from the new or modified source will not interfere with attainment or maintenance of any national ambient air quality standard.

308.1 An owner or operator of a source may elect to have the Control Officer perform a screening model of its emissions. If the results of the screening model indicate that the new or modified source will interfere with attainment or maintenance of any national ambient air quality standard, the owner or operator may perform a more refined model to make the demonstration required by this rule.

308.2 The requirements of this rule shall be satisfied, if the results of the screen or more refined modeling conducted pursuant to Section 308.1 of this rule demonstrate either of the following:

- a. Ambient concentrations resulting from emissions from the new or modified source combined with existing concentrations of regulated minor NSR pollutants will not cause or contribute to a violation of any national ambient air quality standard.
- b. Emissions from the new or modified source will have an ambient impact below the significance levels as defined in Rule 240-Federal Major New Source Review (NSR) of these rules.

308.3 The ambient air quality impact assessment required by this rule shall take into account any limitations, controls, or emissions decreases that are or will be enforceable in the permit or permit revision for the source.

309 **APPLICATION DENIAL:** The Control Officer shall deny an application for any permit or permit revision subject to this rule, if:

309.1 The ambient air quality impact assessment conducted pursuant to Section 308 of this rule demonstrates that the new or modified source will interfere with attainment or maintenance of any national ambient air quality standard; or

309.2 The new or modified source will violate applicable State Implementation Plan (SIP) requirements.

310 **PUBLIC NOTICE:** Public notice requirements pursuant to Rules 210 or 220 of these rules shall be required for a permit or permit revision if the emissions of any one pollutant is equal to or greater than the public notice threshold as defined in Rule 100-General Provisions and Definitions of these rules.

- 311 NOTICE TO OTHER AGENCIES:** A copy of the notice required by Rule 210, Section 408 for permits or significant permit revisions or Rule 220, Section 304.4 of these rules for permits or non-minor permit revisions subject to this rule must also be sent to the Administrator through the appropriate regional office. The notice also must be sent to any other agency in the region having responsibility for implementing the procedures required under this rule.
- 312 MODELING REQUIRED:** All modeling required pursuant to this rule shall be conducted in accordance with 40 CFR 51, Appendix W as of July 1, 2019 (and no future amendments or additions).
- 313 PERMIT CONDITIONS SPECIFIED PURSUANT TO THIS RULE:** The Control Officer shall specify those conditions in the permit that are implemented pursuant to this rule. The specified conditions shall be included in subsequent permit renewals unless the conditions are modified pursuant to this rule or Rule 240-Federal Major New Source Review (NSR) of these rules.
- 314 CIRCUMVENTION:** The submission of applications for permits or permit revisions for new or modified sources in phases so as to circumvent the requirements of this section is prohibited. The burden of proof to show that an application for a permit or permit revision is not being submitted as a phase of a larger project shall be upon the applicant. A person shall not build, erect, install, or use any article, machine, equipment, condition, or any contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, conceals or dilutes an emission which would otherwise constitute a violation of this section. A person shall not circumvent this section to dilute air contaminants by using more emission openings than is considered normal practice by the industry or by the activity in question.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS (NOT APPLICABLE)

SECTION 500 – MONITORING AND RECORDS (NOT APPLICABLE)

REGULATION II – PERMITS AND FEES

RULE 242

**EMISSION OFFSETS GENERATED BY THE VOLUNTARY
PAVING OF UNPAVED ROADS**

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APPENDIX A

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

**REGULATION II – PERMITS AND FEES
RULE 242**

**EMISSION OFFSETS GENERATED BY THE VOLUNTARY
PAVING OF UNPAVED ROADS**

SECTION 100 – GENERAL

- 101 PURPOSE:** To establish enforceable procedures for calculating emission reductions of particulate matter at 10 microns or less (PM₁₀) created through the voluntary paving of unpaved roads that will be used as offsets to meet New Source Review (NSR) requirements.
- 102 APPLICABILITY:** This rule applies to applicants subject to NSR requirements, who need PM₁₀ offsets for the construction of new major stationary sources or major modifications to an existing major stationary source in the Maricopa County PM₁₀ non-attainment area and those same applicants who also voluntarily elect to generate emission reductions of PM₁₀ by paving unpaved roads in the Maricopa County non-attainment area.

SECTION 200 – DEFINITIONS: For the purpose of this rule the following definitions shall apply:

- 201 EMISSION OFFSETS** – Emission reductions that have occurred and continue to occur within the Maricopa County PM₁₀ non-attainment area, used to mitigate emission increases from new or modified major sources.
- 202 ENFORCEABLE** – Offsets are enforceable if they are independently verifiable, program violations are defined, those liable can be identified, and the Administrator and the Control Officer can apply penalties and secure appropriate corrective action where applicable.
- 203 PERMANENT** – Continuing or enduring for the duration of the New Source Review (NSR) obligation.
- 204 QUANTIFIABLE** – Emission reductions that can be reliably and replicably measured by adhering to the quantification protocol set forth in this rule.
- 205 ROADWAY SEGMENT** – A section of roadway between two definitive points, including but not limited to intersections, road ends or other demarcation points, which define a change in the roadway structure. The length of such segments shall be expressed in miles and/or fractions thereof.
- 206 SURPLUS** – The amount of emission reductions from the paving of an unpaved road that are not:
- 206.1** Required by federal, state, local law or the Clean Air Act; or
 - 206.2** Included, required or relied upon in the existing federally approved State Implementation Plan (SIP); or
 - 206.3** Included in the Agricultural Best Management Plan; or

- 206.4 Used by any source to meet any other regulatory requirement including but not limited to, at the time offsets are used, Reasonable Available Control Technology (RACT); or
- 206.5 Required by any other legal settlement or consent decree; or
- 206.6 Included in any SIP-related requirements, including but not limited to: Reasonable Further Progress (RFP), milestones, attainment demonstration, conformity regulations, emissions inventories, operating permit regulations, operating permits issued under Maricopa County or Arizona operating permit regulations, any requirement contained in any new source review permits such as Best Available Control Technology (BACT) and Lowest Achievable Emission Rate (LAER) determinations, limitations on operations of raw materials, emission reductions used for offset or netting purposes, and assumptions used in an attainment demonstration; or
- 206.7 Subject to be included in any of the following as contained in the SIP-approved Plan or in the latest locally-adopted rules or PM plan: Rule 310.01 or Rule 310 of the Maricopa County Air Pollution Control Rules and Regulations, the resolutions listed in 40 CFR 52.120(c) (100), Arizona Revised Statutes Sections 49-457 and 49-504.4, or contingency measures.

SECTION 300 – STANDARDS

- 301 **OFFSET PLAN REQUIREMENTS:** Applicants who choose to use the provisions of this rule to meet their NSR PM₁₀ offset requirements shall submit an Offset Plan. The Offset Plan shall at a minimum contain the information specified in Sections 301.1 through 301.7.
 - 301.1 A statement that the offsets will be generated from the paving of unpaved roads identified within the Offset Plan.
 - 301.2 A statement that the unpaved road(s) will be paved according to state or local government paving standards.
 - 301.3 A list of roads that the generator has proposed for paving including their location and roadway segment identification.
 - 301.4 A copy of a letter or agreement from the appropriate state or local government stating that the public road(s):
 - a. Has been inspected;
 - b. Has been described as being either gravel- or non-gravel-surfaced;
 - c. Will be adopted into the state or local government transportation network, if not already a part of the network; and
 - d. Will be maintained.
 - 301.5 Calculations that quantify vehicle miles traveled for each roadway segment, including all supporting data from the traffic counts performed pursuant to Section 302.1.

- 301.6 Calculations that quantify emissions from each roadway segment before and after paving, including all results and supporting data from any source-specific testing performed pursuant to Section 302.2.
- 301.7 Results of any silt content testing performed on the unpaved roads according to Section 502.
- 301.8 Photos or video of the public roads to be paved, if they are classified as “non-gravel” roads.

302 CALCULATION METHODOLOGY: Calculations of vehicle miles traveled and the emission(s) reductions from the voluntary paving of roads, for each roadway segment, shall be determined according to the procedures in Sections 302.1 and 302.2.

302.1 Vehicle Miles Traveled (VMT): For the purpose of calculating vmt/day and vmt/year for emission reduction calculations, the applicant shall conduct two traffic counts for each roadway segment.

a. Each traffic count shall measure vehicular traffic over a 48 hour period, which may consist of two non-consecutive 24-hour periods. Vehicular traffic shall be measured continuously during each 24-hour period.

b. The two distinct 24-hour traffic counts shall be conducted on two non holiday weekdays.

c. The vmt/day and vmt/year calculations for each roadway segment shall be based on the time-weighted averages of the two separate traffic counts for that particular roadway segment.

d. The vmt/day shall be calculated by multiplying traffic count results by the length of the roadway segment in miles to the nearest 1/10 of a mile.

e. The average daily traffic count shall be multiplied by the daily and monthly seasonal adjustment factors for paved roads to calculate the annual vehicle miles traveled. For the purpose of the offset program, the adjustment factors shall be obtained from the most recent Freeway Management System data provided by the Arizona Department of Transportation.

f. All future projects must comply with Sections 302.1 listed above, except for a previously permitted modification at the Salt River Project’s Santan Generating Plant and a previously permitted modification at the Arizona Public Service’s West Phoenix Power Plant, both of which, during the permitting process, specifically relied upon emission reductions from road paving to provide PM₁₀ offsets.

302.2 Emissions From Unpaved and Paved Roads:

a. The equations provided in Appendix A shall be used to determine the quantity of PM₁₀ emissions (in terms of lbs/VMT) emitted from each unpaved and paved road segment.

b. The default values provided in Appendix A for silt content shall be used to calculate PM₁₀ emissions, unless the applicant provides source specific values obtained in accordance with Section 502.

c. The PM₁₀ emission reduction associated with paving a segment of unpaved road shall be calculated as the difference, in tons per year, between the emissions from the road in the unpaved condition and the emissions from the road in the paved condition.

d. For the two modifications referenced in Section 302.1 (f.) the silt content of the unpaved road(s) used in calculating the PM₁₀ emission reductions shall be that for a gravel road, 6.2%, unless the Arizona government transportation agency responsible for the road(s) provides documentary evidence that the road(s) did not, in fact, have a gravel surface. This documentary evidence must have been created prior to the paving of the road(s).

303 STANDARDS FOR APPROVING OFFSET PLANS:

- 303.1 The Control Officer will approve an Emission Offset Plan if it complies with Section 301 and demonstrates that the emission reductions are quantifiable, permanent, enforceable, and surplus.
- 303.2 The Control Officer shall issue a written approval of the Offset Plan, indicating which roadway segment(s) may be paved and the amount of the resulting emission offsets that will be generated for each roadway segment.
- 303.3 Except for a previously permitted modification at the Salt River Project's Santan Generating Plant and a previously permitted modification at the Arizona Public Service's West Phoenix Power Plant, both of which, during the permitting process, specifically relied upon emission reductions from road paving to provide PM₁₀ offsets, the approved Offset Plan shall not generate offsets from roadway segments that were paved before (insert rule adoption date).

304 OFFSET PLAN COMPLETION:

- 304.1 When the applicant has completed paving any of the roadway segment(s) specified in Section 303.2, the applicant shall submit to the Control Officer a summary report that identifies each roadway segment(s) paved, provides the date(s) paving was completed, and includes a copy of the local or state governments' report evaluating the condition of each roadway segment.
- 304.2 The Control Officer shall issue an approval in writing for the quantity of emission reductions actually generated, based on data submitted pursuant to Section 304.1.
- 304.3 The quantity of emission reductions approved by the Control Officer pursuant to Section 304.2, may be used to meet NSR PM₁₀ offset requirements.

305 ROAD INTEGRITY RESPONSIBILITIES: After the paving of the roadway segment(s) identified in Section 304.1 is completed, the applicant, for a period of 30 years shall:

- 305.1 At least once every two years, obtain a copy of the local or state governments' report evaluating the condition of each roadway segment(s) identified in Section 304.1; and
- 305.2 Review the report upon receipt and determine if any roadway segment(s) identified in Section 304.1 is degraded. The roadway segment shall be considered degraded if the pavement condition score is less than 30% according

to the pavement condition analysis criteria listed in the American Association of State Highway and Transportation Officials (AASHTO); and

305.3 Within 60 days of receipt of the report, submit to the Control Officer a copy of the report and a statement identifying any roadway segment(s) that is degraded.

306 OFFSET INTEGRITY RESPONSIBILITIES:

306.1 If pursuant to Section 305.3 any of the road segments paved and approved by the Control Officer under Section 304.2 are found to be degraded, then within 12 months of the report submittal date, the applicant shall provide replacement offsets.

306.2 Replacement offsets may be provided by:

a. Repaving the degraded road segment(s) identified in Section 305.3, and upon completion submit a report that includes the information specified in Section 304.1 or

b. Generating the appropriate number of PM₁₀ offsets pursuant to Rule 242 or

c. Generating the appropriate number of PM₁₀ offsets pursuant to Rule 204.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS (NON-APPLICABLE)

SECTION 500 - MONITORING AND RECORDS

501 RECORDKEEPING AND RECORDS RETENTION: After the Control Officer has issued an approval of the emission reductions in writing, copies of the documents submitted pursuant to Sections 301, 303.2, 304.1, 305.1, 305.2 and 306 shall be maintained onsite for a minimum of thirty (30) years and provided to the Control Officer upon request.

502 TEST METHODS: Unless the applicant uses the default silt content values provided in Appendix A, silt content of the unpaved road segments shall be determined using the sampling and laboratory analysis procedures provided in EPA's "Compilation of Air Pollutant Emission Factors," (AP-42), Fifth Edition, Volume 1, Appendix C.1. If the applicant performs any silt content analysis, or has such analysis performed on its behalf, the applicant must use the silt content determined from that analysis to calculate PM₁₀ emissions.

APPENDIX A

1. UNPAVED PUBLIC ROADS:

a. For the purposes of this rule, the following empirical expression shall be used to estimate the quantity in pounds (lbs) of particulate emissions from publicly accessible unpaved roads, dominated by light duty vehicles, per vehicle mile traveled (VMT).

Equation #1

$$E = \frac{(s/12) * 1.467}{1.572} - 0.00047 \text{ lb/VMT}$$

E = emission factor (lb/VMT)
s = surface material silt content (%)

- b. The default values listed for “s” in Table A below shall be used in Equation 1, as applicable, unless the applicant provides source-specific values for “s” using the methods specified in Section 502.
- c. Equation #1 is derived from the following empirical expression:

$$E = \frac{k * (s/12)^a * (S/30)^d}{(M/0.5)^c} - C$$

Where:

E = emission factor (lb/VMT)
s = surface material silt content (%)
M = surface material moisture content (%)
S = mean vehicle speed (mph)
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tear
K, a, c and d = constants

The default values listed in Table A were used for each variable.

TABLE A
DEFAULT VALUES FOR EQUATION #1/UNPAVED PUBLIC ROADS

VARIABLES (Units)	DEFAULT VALUES
s (%) Non-gravel roads	11.0
s (%) Gravel roads	6.2
M (%)	1.0%
S (mph)	20
C (lb/VMT)	0.00047

2. PAVED PUBLIC ROADS:

For the purposes of this rule, the quantity in pounds (lb) of particulate emissions from resuspension of loose material on a road surface due to vehicle travel on a dry paved public road shall be 0.005 lbs/VMT. This value is derived from the following empirical expression:

Equation #2

$$E = k (sL/2)^{0.65} (W/3)^{1.5} - C$$

where:

E = emission factor (lb/VMT) k = particulate size multiplier for particle size range and units of interest
sL = road surface silt loading (grams per square meter or g/m²)
W = average weight (tons) of the vehicles traveling the road
C = emission factor for 1980s vehicle fleet exhaust, brake wear and tire wear

The following default values were used for each variable.

VARIABLES (Units)	DEFAULT VALUES
K (lbs /VMT)	0.016
sL (grams/m ²)	0.23
W (tons)	3.74
C (lbs / VMT)	0.00047

REGULATION III – CONTROL OF AIR CONTAMINANTS

**RULE 300
VISIBLE EMISSIONS**

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Revised 07/13/88
Revised 08/05/94
Revised 02/07/01
Revised 03/12/08

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 300
VISIBLE EMISSIONS**

SECTION 100 – GENERAL

- 101 PURPOSE:** To limit the emission of air contaminants into the ambient air by establishing standards for visible emissions and opacity.
- 102 APPLICABILITY:** This rule applies to visible emissions from sources for which no source-specific opacity requirements apply. Exceptions to this rule are described in Section 302 of this rule.

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

- 201 OPACITY –** A condition of the ambient air, or any part thereof, in which an air contaminant partially or wholly obscures the view of an observer.
- 202 PERCENT OPACITY –** The degree to which an effluent plume or any other emission of air contaminants obscures the transmission of light expressed as a percentage.
- 203 SHUTDOWN –** The cessation of operation of any air pollution control equipment and/or process equipment for any purpose, except routine phasing out of process equipment.
- 204 STARTUP –** The setting into operation of any air pollution control equipment and/or process equipment for any purpose, except routine phasing in of process equipment.
- 205 UNCOMBINED WATER –** Condensed water containing no more than analytical trace amounts of other chemical elements or compounds.

SECTION 300 – STANDARDS

- 301 LIMITATIONS:** 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 for a period aggregating more than three minutes in any 60-minute period.

302 EXCEPTIONS:

- 302.1 Charging Electric Arc Furnaces:** When charging or back-charging any electric arc furnace for which construction commenced prior to February 2, 1963, a person may discharge air contaminants, other than uncombined water, in excess of the applicable opacity limit in Section 301 of this rule for no more than an aggregate of three minutes in any 45-minute period; however, visible emissions resulting from such discharge of air contaminants shall not exceed 40% opacity.
- 302.2 Emergency Diesel Generators (EDGs) and Equipment:** When emergency diesel generators (EDGs) and equipment must run for safety reasons and/or for safety and operational tests to meet the requirements legally imposed by the Nuclear Regulatory Commission, a person may discharge air contaminants, other than uncombined water, in excess of the applicable opacity limit in Section 301 of this rule. Any discharge of air contaminants, other than uncombined water, in excess of the opacity limit in Section 301 of this rule should not contribute to a violation of the National Ambient Air Quality Standard.
- 302.3 Firing of Ordnance at Test Facilities:** Visible emissions exceeding the opacity standards for short periods of time resulting from firing test rounds in enclosed bunkers at ordnance test facilities which do not exceed six minutes in length shall not constitute a violation of Section 301 of this rule.
- 302.4 Opacity Training:** Equipment or processes used to train individuals in opacity observations shall be exempt from opacity standards during the preparation for and/or during the actual training session(s).

SECTION 400 – ADMINISTRATIVE REQUIREMENTS (NOT APPLICABLE)

SECTION 500 – MONITORING AND RECORDS

- 501 COMPLIANCE DETERMINATION – OPACITY:** Opacity shall be determined by observations of visible emissions conducted in accordance with EPA Reference Method 9 as modified by EPA Reference Method 203B.

REGULATION III – CONTROL OF AIR CONTAMINANTS

RULE 310.01

FUGITIVE DUST FROM NON-TRADITIONAL SOURCES OF FUGITIVE DUST

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Adopted 06/16/99
Revised 02/16/00
Revised 02/17/05
Revised 03/26/08
Revised 01/27/10

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

RULE 310.01

FUGITIVE DUST FROM NON-TRADITIONAL SOURCES OF FUGITIVE DUST

SECTION 100 – GENERAL

- 101 PURPOSE:** To minimize the amount of fugitive dust entrained into the ambient air from non-traditional sources of fugitive dust by requiring measures to prevent, reduce, or mitigate fugitive dust emissions.
- 102 APPLICABILITY:**
- 102.1** The provisions of this rule shall apply to non-traditional sources of fugitive dust that are conducted in Maricopa County, except for those dust-generating operations listed in Section 103 of this rule.
- 102.2** The provisions of this rule shall apply to any open area or vacant lot that is not defined as agricultural land and is not used for agricultural purposes according to Arizona Revised Statutes (A.R.S.) § 42-12151 and A.R.S. § 42-12152.
- 103 EXEMPTIONS:**
- 103.1** The provisions of this rule shall not apply to normal farm cultural practices according to A.R.S. § 49-457 and A.R.S. § 49-504.4.
- 103.2** The provisions of this rule shall not apply to dust-generating operations that are subject to the standards and/or requirements described in Rule 310: Fugitive Dust from Dust-Generating Operations of these rules.
- 103.3** The provisions of this rule shall not apply to emergency activities that may disturb the soil conducted by any utility or government agency in order to prevent public injury or to restore critical utilities to functional status.
- 103.4** The provisions of this rule do not apply to the establishment of initial landscapes without the use of mechanized equipment, conducting landscape maintenance without the use of mechanized equipment, and playing on or maintaining a field used for non-motorized sports. However, establishing initial landscapes without

the use of mechanized equipment and conducting landscape maintenance without the use of mechanized equipment shall not include grading, or trenching, performed to establish initial landscapes or to redesign existing landscapes.

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions apply, in addition to those definitions found in Rule 100: General Provisions and Definitions of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

201 ANIMAL WASTE – Any animal excretions and mixtures containing animal excretions.

202 AREA A – As defined in A.R.S. § 49-541(1), the area in Maricopa County delineated as follows:

Township 8 North, Range 2 East and Range 3 East
Township 7 North, Range 2 West through Range 5 East
Township 6 North, Range 5 West through Range 6 East
Township 5 North, Range 5 West through Range 7 East
Township 4 North, Range 5 West through Range 8 East
Township 3 North, Range 5 West through Range 8 East
Township 2 North, Range 5 West through Range 8 East
Township 1 North, Range 5 West through Range 7 East
Township 1 South, Range 5 West through Range 7 East
Township 2 South, Range 5 West through Range 7 East
Township 3 South, Range 5 West through Range 1 East
Township 4 South, Range 5 West through Range 1 East

203 AREA ACCESSIBLE TO THE PUBLIC – Any paved parking lot or paved roadway that can be entered or used for public travel primarily for purposes unrelated to the dust-generating operation.

204 BULK MATERIAL – Any material, including, but not limited to, the following materials that are capable of producing fugitive dust:

- 204.1 Earth.
- 204.2 Rock.
- 204.3 Silt.
- 204.4 Sediment.
- 204.5 Sand.
- 204.6 Gravel.
- 204.7 Soil.
- 204.8 Fill.
- 204.9 Aggregate less than 2 inches in length or diameter (i.e., aggregate base course [ABC]).
- 204.10 Dirt.
- 204.11 Mud.

- 204.12 Demolition debris.
 - 204.13 Cotton.
 - 204.14 Trash.
 - 204.15 Cinders.
 - 204.16 Pumice.
 - 204.17 Saw dust.
 - 204.18 Feeds.
 - 204.19 Grains.
 - 204.20 Fertilizers.
 - 204.21 Fluff from shredders.
 - 204.22 Dry concrete.
- 205 **CHEMICAL/ORGANIC STABILIZER** – Any non-toxic chemical or organic dust suppressant, other than water, which meets any specifications, criteria, or tests required by any federal, state, or local water agency and is not prohibited for use by any applicable law, rule, or regulation.
- 206 **CONTROL MEASURE** – A technique, practice, or procedure used to prevent or minimize the generation, emission, entrainment, suspension, and/or airborne transport of fugitive dust.
- 207 **DISTURBED SURFACE AREA** – A portion of the earth's surface or material placed on the earth's surface that has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed native condition if the potential for the emission of fugitive dust is increased by the movement, destabilization, or modification.
- 208 **DUST-GENERATING OPERATION** – Any activity capable of generating fugitive dust, including but not limited to, the following activities:
- 208.1 Land clearing, maintenance, and land cleanup using mechanized equipment.
 - 208.2 Earthmoving.
 - 208.3 Weed abatement by discing or blading.
 - 208.4 Excavating.
 - 208.5 Construction.
 - 208.6 Demolition.
 - 208.7 Bulk material handling (e.g., bulk material hauling and/or transporting, bulk material stacking, loading, and unloading operations).
 - 208.8 Storage and/or transporting operations (e.g., open storage piles).
 - 208.9 Operation of any outdoor equipment.
 - 208.10 Operation of motorized machinery.
 - 208.11 Establishing and/or using staging areas, parking areas, material storage areas, or access routes to and from a site.
 - 208.12 Establishing and/or using unpaved haul/access roads to, from, and within a site.
 - 208.13 Disturbed surface areas associated with a site.
 - 208.14 Installing initial landscapes using mechanized equipment.

- 209 DUST SUPPRESSANT** – Water, hygroscopic material, solution of water and chemical surfactant, foam, non-toxic chemical stabilizer, or any other dust palliative, which is not prohibited for ground surface application by the Environmental Protection Agency (EPA) or the Arizona Department of Environmental Quality (ADEQ), or any applicable law, rule, or regulation, as a treatment material for reducing fugitive dust emissions.
- 210 EMERGENCY** – A situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a limitation in this rule, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include any noncompliance due to improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.
- 211 EMERGENCY ACTIVITY** – Repairs that are a result of an emergency which prevents or hinders the provision of electricity, the distribution/collection of water, and the availability of other utilities due to unforeseen circumstances that are beyond the routine maintenance and repair due to normal wear conducted by a utility or municipality.
- 212 FEED LANE ACCESS AREAS** – Roads providing access from the feed preparation areas to and including feed lane areas at a livestock activity. These access roads are typically used to distribute feed from feed trucks to the animals.
- 213 FUGITIVE DUST** – The particulate matter not collected by a capture system, that is entrained in the ambient air and is caused from human and/or natural activities, such as, but not limited to, movement of soil, vehicles, equipment, blasting, and wind. For the purpose of this rule, fugitive dust does not include particulate matter emitted directly from the exhaust of motor vehicles and other internal combustion engines, from portable brazing, soldering, or welding equipment, and from piledrivers, and does not include emissions from process and combustion sources that are subject to other rules in Regulation III (Control of Air Contaminants) of these rules.
- 214 GRAVEL PAD** – A layer of washed gravel, rock, or crushed rock that is at least one inch or larger in diameter, that is maintained at the point of intersection of an area accessible to the public and a site exit to dislodge mud, dirt, and/or debris from the tires of motor vehicles, prior to leaving the site. Minimum dimensions must be 30 feet wide by 3 inches deep and 50 feet long or the length of the longest motor vehicle, whichever is greater. If an unpaved surface exit does not have adequate width to install a 30-foot wide gravel pad, then the width of the gravel pad must cover the full width of the unpaved surface exit and such shorter width shall be adequate to prevent trackout.
- 215 GRIZZLY** – A device (i.e., rails, pipes, or grates) used to dislodge mud, dirt, and/or debris from the tires and undercarriage of motor vehicles prior to leaving the work site.
- 216 LIVESTOCK ACTIVITIES** – Any activity directly related to feeding animals, displaying animals, racing animals, exercising animals, and/or for any other such activity

including, but not limited to, livestock arenas, horse arenas, feed lots, and residential activities related to feeding or raising animals.

- 217 MOTOR VEHICLE** – A self-propelled vehicle for use on the public roads and highways of the State of Arizona and required to be registered under the Arizona State Uniform Motor Vehicle Act, including any non-motorized attachments, such as but not limited to, trailers or other conveyances which are connected to or propelled by the actual motorized portion of the vehicle.
- 218 NON-TRADITIONAL SOURCE OF FUGITIVE DUST** – A source of fugitive dust that is located at a source that does not require any permit under these rules. The following non-traditional sources of fugitive dust are subject to the standards and/or requirements described in Rule 310.01: Fugitive Dust from Non-Traditional Sources of Fugitive Dust of these rules:
- 218.1** Vehicle use in open areas and vacant lots.
 - 218.2** Open areas and vacant lots.
 - 218.3** Unpaved parking lots.
 - 218.4** Unpaved roadways (including alleys).
 - 218.5** Livestock activities.
 - 218.6** Erosion-caused deposition of bulk materials onto paved surfaces.
 - 218.7** Easements, rights-of-way, and access roads for utilities (electricity, natural gas, oil, water, and gas transmission).
- 219 NORMAL FARM CULTURAL PRACTICE** – All activities by the owner, lessee, agent, independent contractor, and/or supplier conducted on any facility for the production of crops and/or nursery plants. Disturbances of the field surface caused by turning under stalks, tilling, leveling, planting, fertilizing, or harvesting are included in this definition.
- 220 OFF-ROAD VEHICLE** – Any self-propelled conveyance specifically designed for off-road use, including, but not limited to, off-road or all-terrain equipment, trucks, cars, motorcycles, motorbikes, or motorbuggies.
- 221 OPEN AREAS AND VACANT LOTS** – Any of the following described in Sections 221.1 through 221.3 of this rule. For the purpose of this rule, vacant portions of residential or commercial lots that are immediately adjacent and owned and/or operated by the same individual or entity are considered one vacant open area or vacant lot.
- 221.1** An unsubdivided or undeveloped tract of land adjoining a developed or a partially developed residential, industrial, institutional, governmental, or commercial area.
 - 221.2** A subdivided residential, industrial, institutional, governmental, or commercial lot that contains no approved or permitted buildings or structures of a temporary or permanent nature.

- 221.3** A partially developed residential, industrial, institutional, governmental, or commercial lot.
- 222** **OWNER AND/OR OPERATOR** – Any person who owns, leases, operates, controls, or supervises a fugitive dust source subject to the requirements of this rule.
- 223** **PAVE** – To apply and maintain asphalt, concrete, or other similar material to a roadway surface (i.e., asphaltic concrete, concrete pavement, chip seal, or rubberized asphalt).
- 224** **PM₁₀ NONATTAINMENT AREA** – An area designated by the EPA as exceeding National Ambient Air Quality Standards based upon data collected through air quality monitoring. The geographical boundary of Maricopa County's PM₁₀ nonattainment area is defined as the rectangle determined by and including the following townships and ranges: T6N, R3W; T6N, R7E; T2S, R3W; T2S, R7E; and T1N, R8E. Maricopa County's PM₁₀ nonattainment area includes the following cities: Surprise, Peoria, Glendale, Phoenix, Scottsdale, Tempe, Mesa, Gilbert, Chandler, Avondale, Buckeye, and Goodyear.
- 225** **PROPERTY LINE** – The boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.
- 226** **PUBLIC ROADWAYS** – Any roadways that are open to public travel.
- 227** **TRACKOUT/CARRYOUT** – Any and all bulk materials that adhere to and agglomerate on the surfaces of motor vehicles, haul trucks, and/or equipment (including tires) and that have fallen or been deposited onto an area accessible to the public.
- 228** **TRACKOUT CONTROL DEVICE** – A gravel pad, grizzly, wheel wash system, or a paved area, located at the point of intersection of an unpaved area and an area accessible to the public that controls or prevents vehicular trackout.
- 229** **UNPAVED ACCESS CONNECTIONS** – Any unpaved road connection with a paved public road.
- 230** **UNPAVED PARKING LOT** – Any area that is not paved and that is used for parking, maneuvering, material handling, or storing motor vehicles and equipment. An unpaved parking lot includes, but is not limited to, automobile impound yards, wrecking yards, automobile dismantling yards, salvage yards, material handling yards, and storage yards. For the purpose of this rule, maneuvering shall not include military maneuvers or exercises conducted on federal facilities.
- 231** **UNPAVED ROADWAY (INCLUDING ALLEYS)** – A road that is not paved and that is owned by federal, state, county, municipal, or other governmental or quasi-governmental agencies. For the purpose of this rule, an unpaved roadway (including

alleys) is not a horse trail, hiking path, bicycle path, or other similar path used exclusively for purposes other than travel by motor vehicles. An unpaved roadway (including alleys) includes designated or opened trail systems and service roads regardless of surface composition.

- 232 VACANT LOT** – The definition of vacant lot is included in Section 221: Definition of Open Areas and Vacant Lots of this rule.

SECTION 300 – STANDARDS

301 GENERAL REQUIREMENTS FOR NON-TRADITIONAL SOURCES OF FUGITIVE DUST:

- 301.1** An owner and/or operator of a non-traditional source of fugitive dust shall be subject to the standards and/or requirements described in this rule. Failure to comply with any such standards and/or requirements is deemed a violation of this rule.
- 301.2** When an owner and/or operator of a non-traditional source of fugitive dust fails to stabilize disturbed surfaces of vacant lots as required in Sections 302.4 and 302.5 of this rule, the Control Officer shall commence enforcement of those rule provisions regarding the stabilization of disturbed surfaces of vacant lots that include the following:
- a. Reasonable written notice to the owner or the owner's authorized agent or the owner's statutory agent that the unpaved disturbed surface of a vacant lot is required to be stabilized. The notice shall be given not less than 30 days before the day set for compliance and shall include a legal description of the property and the estimated cost to the county for the stabilization if the owner does not comply. The notice shall be either personally served or mailed by certified mail to the owner's statutory agent, to the owner at the owner's last known address or to the address to which the tax bill for the property was last mailed.
 - b. Authority to enter upon any said land/property where such non-traditional source of fugitive dust exists/where such disturbed surface area exists and to take remedial and/or corrective action as may be deemed appropriate to cope with and relieve, reduce, remedy, and/or stabilize such non-traditional source of fugitive dust/such disturbed surface area. Any cost incurred in connection with any such remedial or corrective action by the Maricopa County Air Quality Department or any person acting for the Maricopa County Air Quality Department shall be reimbursed by the owner and/or operator of such non-traditional source of fugitive dust.

302 CONTROL MEASURES FOR NON-TRADITIONAL SOURCES OF FUGITIVE DUST:

- 302.1** When engaged in the activities described in Sections 302.4 through 302.10 of this rule, the owner and/or operator of a non-traditional source of fugitive dust shall implement control measures as described in Sections 302.4 through 302.10 of this rule, as applicable.
- 302.2** Control measures shall be implemented to meet the visible emissions requirements and stabilization requirements, as required for each activity, and to achieve the compliance determination in Section 501 of this rule.
- 302.3** Failure to implement control measures as required by this rule, as applicable, and/or failure to maintain stabilization of a non-traditional source of fugitive dust with adequate surface crusting to prevent wind erosion as measured by the requirements in this rule shall be deemed a violation of this rule.
- 302.4 Vehicle Use in Open Areas and Vacant Lots:** The owner and/or operator of a non-traditional source of fugitive dust that involves vehicle use in open areas and vacant lots shall be subject to the requirements described in Section 302.4(a) of this rule and, unless otherwise specified and/or required, shall comply with the control measures described in Section 302.4(b) of this rule and the additional requirements described in Section 302.4(c) of this rule.

a. Visible Emissions Requirements and Stabilization Requirements:

- (1)** The owner and/or operator of a non-traditional source of fugitive dust that involves vehicle use in open areas and vacant lots shall not cause or allow visible emissions of particulate matter, including fugitive dust, beyond the property line within which the emissions are generated.
- (2)** The owner and/or operator of a non-traditional source of fugitive dust that involves vehicle use in open areas and vacant lots shall stabilize the open areas and vacant lots on which vehicles are used to meet one of the following stabilization limitations:
 - (a)** A soil crust; or
 - (b)** A threshold friction velocity (TFV) corrected for non-erodible elements of 100 cm/second or higher; or
 - (c)** Flat vegetative cover (i.e., attached [rooted] vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind) that is equal to at least 50%; or

- (d) Standing vegetative cover (i.e., vegetation that is attached [rooted] with a predominant vertical orientation) that is equal to or greater than 30%; or
- (e) Standing vegetative cover (i.e., vegetation that is attached [rooted] with a predominant vertical orientation) that is equal to or greater than 10% and where the threshold friction velocity is equal to or greater than 43 cm/second when corrected for non-erodible elements; or
- (f) A percent cover that is equal to or greater than 10% for non-erodible elements; or
- (g) An alternative test method approved in writing by the Control Officer and the Administrator.

b. Control Measures:

- (1) Prevent motor vehicle and/or off-road vehicle trespassing, parking, and/or access by installing barriers, curbs, fences, gates, posts, shrubs, trees, or other effective control measures;
- (2) Prevent motor vehicle and/or off-road vehicle trespassing, parking, and/or access by posting that consists of one of the following:
 - (a) A sign written in compliance with ordinance(s) of local, County, State, or Federal sign standards.
 - (b) An order of a government land management agency.
 - (c) Most current maps approved by a government land management agency.
 - (d) Virtual posting a government land management agency.
- (3) Uniformly apply and maintain surface gravel or chemical/organic stabilizers to all areas disturbed by motor vehicles and/or off-road vehicles; or
- (4) Apply and maintain an alternative control measure approved in writing by the Control Officer and the Administrator.

c. Additional Requirements:

- (1) If open areas and vacant lots are 0.10 acre (4,356 square feet) or larger and have a cumulative of 500 square feet or more that are disturbed by

being driven over and/or used by motor vehicles, by off-road vehicles, or for material dumping, then the owner and/or operator shall implement one or more of the control measures described in Section 302.4(b) of this rule within 60 calendar days following the initial discovery by the Control Officer of disturbance or vehicle use on open areas and vacant lots.

- (2) Within 30 calendar days following the initial discovery by the Control Officer of disturbance or vehicle use on open areas and vacant lots, the owner and/or operator shall provide in writing to the Control Officer a description and date of the control measure(s) to be implemented to prevent such disturbance or vehicle use on open areas and vacant lots.
- (3) The owner and/or operator shall implement all control measures necessary to limit the disturbance or vehicle use on open areas and vacant lots in accordance with the requirements of this rule. Control measure(s) shall be considered effectively implemented when the open areas and vacant lots meet the requirements described in Section 302.4(a) of this rule.
- (4) Once a control measure in Section 302.4(b) of this rule has been effectively implemented, then such open area or vacant lot is subject to the requirements of Section 302.5: Open Areas and Vacant Lots of this rule.
- (5) Use of or parking on open areas and vacant lots by the owner and/or operator of such open areas and vacant lots shall not be considered vehicle use in open areas and vacant lots and shall not be subject to the requirements of Section 302.4(b) and sections 302.4(c)(1) through 302.4(c)(4) of this rule. Such open areas and vacant lots shall still meet the requirements described in Section 302.5 of this rule.
- (6) Establishing initial landscapes without the use of mechanized equipment or conducting landscape maintenance without the use of mechanized equipment shall not be considered vehicle use in open areas and vacant lots and shall not be subject to the requirements of Section 302.4(b) and Sections 302.4(c)(1) through 302.4(c)(4) of this rule. Such open areas and vacant lots shall still meet the requirements described in Section 302.5 of this rule.

302.5 Open Areas and Vacant Lots: The owner and/or operator of a non-traditional source of fugitive dust that involves open areas and vacant lots shall be subject to the requirements described in Section 302.5(a) of this rule and, unless otherwise specified and/or required, shall comply with the control measures described in Section 302.5(b) of this rule and the additional requirements described in Section 302.5(c) of this rule.

a. Visible Emissions Requirements and Stabilization Requirements:

- (1) The owner and/or operator of a non-traditional source of fugitive dust that involves open areas and vacant lots shall not cause or allow visible emissions of particulate matter, including fugitive dust, beyond the property line within which the emissions are generated.
- (2) The owner and/or operator of a non-traditional source of fugitive dust that involves open areas and vacant lots shall stabilize the open areas and vacant lots to meet one of the following stabilization limitations:
 - (a) A soil crust; or
 - (b) A threshold friction velocity (TFV) corrected for non-erodible elements of 100 cm/second or higher; or
 - (c) Flat vegetative cover (i.e., attached [rooted] vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind) that is equal to at least 50%; or
 - (d) Standing vegetative cover (i.e., vegetation that is attached [rooted] with a predominant vertical orientation) that is equal to or greater than 30%; or
 - (e) Standing vegetative cover (i.e., vegetation that is attached [rooted] with a predominant vertical orientation) that is equal to or greater than 10% and where the threshold friction velocity is equal to or greater than 43 cm/second when corrected for non-erodible elements; or
 - (f) A percent cover that is equal to or greater than 10% for non-erodible elements; or
 - (g) An alternative test method approved in writing by the Control Officer and the Administrator.

b. Control Measures:

- (1) Establish vegetative ground cover on all disturbed surface areas. Such control measure(s) must be maintained and reapplied, if necessary. Stabilization shall be achieved, per this control measure, within eight months after the control measure has been implemented; or
- (2) Apply a dust suppressant to all disturbed surface areas; or

- (3) Restore all disturbed surface areas within 60 calendar days following the initial discovery by the Control Officer of the disturbance, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby undisturbed native conditions. Such control measure(s) must be maintained and reapplied, if necessary. Stabilization shall be achieved, per such control measure, within eight months after such control measure has been implemented; or
- (4) Uniformly apply and maintain surface gravel; or
- (5) Apply and maintain an alternative control measure approved in writing by the Control Officer and the Administrator.

c. Additional Requirements:

- (1) If open areas and vacant lots are 0.10 acre (4,356 square feet) or larger and have a cumulative of 500 square feet or more that are disturbed and if such disturbed area remains unoccupied, unused, vacant, or undeveloped for more than 15 days, then the owner and/or operator shall implement one or more of the control measures described in Section 302.5(b) of this rule within 60 calendar days following the initial discovery by the Control Officer of the disturbance on the open areas and vacant lots.
- (2) Within 30 calendar days following the initial discovery by the Control Officer of the disturbance on the open areas and vacant lots, the owner and/or operator shall provide in writing to the Control Officer a description and date of the control measure(s) to be implemented.
- (3) Control measure(s) shall be considered effectively implemented when the disturbance on the open areas and vacant lots meets the requirements described in Section 302.5(a) of this rule.

302.6 Unpaved Parking Lots: The owner and/or operator of a non-traditional source of fugitive dust that involves unpaved parking lots shall be subject to the requirements described in Section 302.6(a) of this rule and, unless otherwise specified and/or required, shall comply with one of the control measures described in Section 302.6(b) of this rule and the additional requirements described in Section 302.6(c) of this rule.

a. Visible Emissions Requirements and Stabilization Requirements:

- (1) The owner and/or operator of a non-traditional source of fugitive dust that involves unpaved parking lots shall not cause or allow visible

emissions of particulate matter, including fugitive dust, beyond the property line within which the emissions are generated.

- (2) The owner and/or operator of a non-traditional source of fugitive dust that involves unpaved parking lots shall not cause or allow visible fugitive dust emissions to exceed 20% opacity and shall not allow silt loading equal to or greater than 0.33 oz/ft². However, if silt loading is equal to or greater than 0.33 oz/ft², then the owner and/or operator shall not allow the silt content to exceed 8%.

b. Control Measures:

- (1) For parking, maneuvering, ingress, and egress areas at developments other than residential buildings with four or fewer units that are utilized for more than 35 days during the calendar year:
 - (a) Install and maintain pavement; or
 - (b) Apply dust suppressant other than water and install, maintain, and use a suitable trackout control device that controls and prevents trackout and/or removes particulate matter from tires and the exterior surfaces of motor vehicles that traverse the site; or
 - (c) Uniformly apply and maintain surface gravel.
- (2) For parking, maneuvering, ingress, and egress areas at developments other than residential buildings with four or fewer units that are utilized for 35 days or less during the calendar year:
 - (a) Install and maintain one of the control measures listed in Section 302.6(b)(1) of this rule; or
 - (b) Apply water and install, maintain, and use a suitable trackout control device that controls and prevents trackout and/or removes particulate matter from tires and the exterior surfaces of motor vehicles that traverse the site.
- (3) For parking, maneuvering, ingress, and egress areas 3,000 square feet or more in size at residential buildings with four or fewer units install and maintain a paving or stabilization method authorized by the city, town, or county by code, ordinance, or permit.

c. Additional Requirements:

- (1) Control measure(s) shall be considered effectively implemented when the unpaved parking lot meets the requirements described in Section 302.6(a) of this rule.
- (2) If trackout occurs, the owner and/or operator shall repair and/or replace the control measure(s) and shall clean-up immediately such trackout from areas accessible to the public including curbs, gutters, and sidewalks when trackout extends a cumulative distance of 25 linear feet or more and at the end of the day for all other trackout.

302.7 Unpaved Roadways (Including Alleys): The owner and/or operator of unpaved roadways (including alleys) that are used by 150 vehicle trips or more per day in the PM₁₀ nonattainment area shall be subject to the requirements described in Section 302.7(a) of this rule and, unless otherwise specified and/or required, shall comply with one of the control measures described in Section 302.7(b) of this rule and the additional requirements described in Section 302.7(c) of this rule.

a. Visible Emissions Requirements and Stabilization Requirements: The owner and/or operator of unpaved roadways (including alleys) shall not cause or allow visible fugitive dust emissions to exceed 20% opacity and shall not allow silt loading equal to or greater than 0.33 oz/ft². However, if silt loading is equal to or greater than 0.33 oz/ft², then the owner and/or operator shall not allow the silt content to exceed 6%.

b. Control Measures:

- (1) Pave;
- (2) Apply dust suppressants other than water; or
- (3) Uniformly apply and maintain surface gravel.

c. Additional Requirements:

- (1) If a person allows 150 vehicle trips or more per day on an unpaved roadway (including an alley) in the PM₁₀ nonattainment area, then such person shall first implement one of the control measures described in Section 302.7(b) of this rule.
- (2) A person, who allows 150 vehicle trips or more per day on an unpaved roadway (including an alley) in the PM₁₀ nonattainment area, shall be responsible for conducting vehicle counts/traffic counts to determine if 150 vehicle trips or more per day occur on an unpaved roadway (including an alley). A traffic count shall measure vehicular traffic over a 48-hour period, which may consist of two non-consecutive 24-hour periods. Vehicular traffic shall be measured continuously during each

24-hour period. The average vehicle counts/traffic counts on the highest trafficked days shall be recorded and provided to the Control Officer in writing within 60 days of verbal or written request by the Control Officer.

- (3) Control measure(s) shall be considered effectively implemented under the following conditions:
 - (a) When the unpaved roadway (including an alley) meets the requirements described in Section 302.7(a) of this rule.
 - (b) When one of the control measures described in Section 302.7(b) of this rule is implemented on 5 miles of unpaved roadways (including alleys) having vehicle traffic of 150 vehicle trips or more per day within one calendar year beginning in calendar year of 2008. If the control measure described in Section 302.7(b)(2) of this rule is implemented, the unpaved roadways (including alleys) must be maintained so as to comply with Appendix C of these rules.

302.8 Livestock Activities: The owner and/or operator of a non-traditional source of fugitive dust that involves livestock activities shall be subject to the requirements described in Section 302.8(a) of this rule and, unless otherwise specified and/or required, shall comply with the control measures described in Section 302.8(b) of this rule and the additional requirements described in Section 302.8(c) of this rule.

a. Visible Emissions Requirements:

- (1) For unpaved access connections and unpaved feed lane access areas, the owner and/or operator shall not cause or allow visible fugitive dust emissions to exceed 20% opacity.
- (2) For corrals, pens, and arenas, the owner and/or operator shall not cause or allow visible fugitive dust emissions to exceed 20% opacity for a period aggregating more than three minutes in any 60-minute period.
- (3) The owner and/or operator shall not cause or allow visible emissions of particulate matter, including fugitive dust, beyond the property line within which the emissions are generated.

b. Control Measures: The owner and/or operator of a non-traditional source of fugitive dust that involves livestock activities shall implement the control measures described in this section of this rule. When selecting a control measure, the owner and/or operator may consider site-specific logistics of the livestock activities. When doing so, some control measures may be more reasonable to implement than others. Any control measure that is implemented must achieve the applicable standards and requirements

described in Sections 302.8(a) and (c) of this rule, as determined by the corresponding test methods, as applicable, and must achieve other applicable standards set forth in this rule. The owner and/or operator may submit a request to the Control Officer and the Administrator for the use of alternative control measure(s). The owner and/or operator may implement the alternative control measure only after the Control Officer and the Administrator have granted the petition.

- (1)** For unpaved access connections and unpaved feed lane access areas:
 - (a)** Apply water and install, maintain, and use a suitable trackout control device that controls and prevents trackout and/or removes particulate matter from tires and the exterior surfaces of motor vehicles that traverse the site;
 - (b)** Apply and maintain pavement, gravel (maintained to a depth of four inches), or asphaltic roadbase;
 - (c)** Apply and maintain dust suppressants other than water; or
 - (d)** Limit vehicle trips to no more than 20 per day per road, limit vehicle speeds to no more than 15 miles per hour, and restrict public access to private roads by installing barriers, curbs, fences, gates, posts, or signs written in compliance with ordinance(s) of local, County, State, or Federal sign standards.
- (2)** For bulk material hauling, including animal waste, off-site and crossing and/or accessing an area accessible to the public:
 - (a)** Load all vehicles used to haul bulk material, including animal waste, such that the freeboard is not less than three inches;
 - (b)** Prevent spillage or loss of bulk material, including animal waste, from holes or other openings in the cargo compartment's floor, sides, and/or tailgate(s);
 - (c)** Cover cargo compartment with a tarp or other suitable closure; and
 - (d)** Install, maintain, and use a suitable trackout control device that controls and prevents trackout and/or removes particulate matter from tires and the exterior surfaces of motor vehicles that traverse the site.
- (3)** For corrals, pens, and arenas:
 - (a)** Apply water;

- (b) Install shrubs and/or trees within 50 feet to 100 feet of corrals, pens, and arenas;
- (c) Scrape and/or remove manure;
- (d) Apply a fibrous layer (i.e., wood chips) in working areas;
- (e) Provide shaded areas; or
- (f) Apply and maintain an alternative control measure approved in writing by the Control Officer and the Administrator.

c. Additional Requirements:

- (1) The owner and/or operator of livestock activities shall implement at least one of the control measures from each of the following three sections of this rule, as applicable: Section 302.8(b)(1), Section 302.8(b)(2), and Section 302.8(b)(3). In lieu of implementing at least one control measure from each of the following three sections of this rule, as applicable: Section 302.8(b)(1), Section 302.8(b)(2), and Section 302.8(b)(3), the owner and/or operator of livestock activities shall implement an alternative control measure approved in writing by the Control Officer and the Administrator.
- (2) Control measure(s) shall be considered effectively implemented when the livestock activities meet the requirements described in Section 302.8(a) of this rule.
- (3) If trackout occurs, the owner and/or operator shall repair and/or replace the control measure(s) and shall clean up immediately such trackout from areas accessible to the public including curbs, gutters, and sidewalks when trackout extends a cumulative distance of 25 linear feet or more and at the end of the day for all other trackout.

302.9 Erosion-Caused Deposition of Bulk Materials Onto Paved Surfaces: The owner and/or operator of a non-traditional source of fugitive dust that involves erosion-caused deposition of bulk materials onto paved surfaces shall comply with the control measures described in Section 302.9(a) of this rule and the additional requirements described in Section 302.9(b) of this rule.

a. Control Measures:

- (1) Remove any and all such deposits by utilizing the appropriate control measures within 24 hours of the deposits' identification or prior to the

resumption of traffic on pavement, where the pavement area has been closed to traffic; and

- (2) Dispose of deposits in such a manner so as not to cause another source of fugitive dust.

b. Additional Requirements:

- (1) In the event that erosion-caused deposition of bulk materials or other materials occurs on any adjacent paved roadway, paved parking lot, curb, gutter, or sidewalk, the owner and/or operator of the property from which the deposition eroded shall implement both of the control measures described in Section 302.9(a) of this rule.
- (2) Failure to comply with both of the control measures described in Section 302.9(a) of this rule shall constitute a violation of this rule.

302.10 Easements, Rights-of-Way, and Access Roads for Utilities (Transmission of Electricity, Natural Gas, Oil, Water, and Gas): The owner and/or operator of a non-traditional source of fugitive dust that involves easements, rights-of-way, and access roads for utilities (transmission of electricity, natural gas, oil, water, and gas) that are used by 150 vehicle trips or more per day in the PM₁₀ nonattainment area shall be subject to the requirements described in Section 302.10(a) of this rule and unless otherwise specified and/or required, comply with one of the control measures described in Section 302.10(b) of this rule and the additional requirements described in Section 302.10(c) of this rule.

- a. Visible Emissions Requirements and Stabilization Requirements:** The owner and/or operator of a non-traditional source of fugitive dust that involves easements, rights-of-way, and access roads for utilities (transmission of electricity, natural gas, oil, water, and gas) shall not cause or allow visible fugitive dust emissions to exceed 20% opacity and shall not allow silt loading equal to or greater than 0.33 oz/ft². However, if silt loading is equal to or greater than 0.33 oz/ft², then the owner and/or operator shall not allow the silt content to exceed 6%.

b. Control Measures:

- (1) Pave;
- (2) Apply dust suppressants other than water;
- (3) Uniformly apply and maintain surface gravel; or
- (4) Install locked gates at each entry point.

c. Additional Requirements:

- (1) If an owner and/or operator allows 150 vehicle trips or more per day to use an easement, right-of-way, and access road for utilities (transmission of electricity, natural gas, oil, water, and gas) in the PM₁₀ nonattainment area, then such owner and/or operator shall first implement one of the control measures described in Section 302.10(b) of this rule.
- (2) A person, who allows 150 vehicle trips or more per day to use an easement, right-of-way, and access road for utilities (transmission of electricity, natural gas, oil, water, and gas) in the PM₁₀ nonattainment area, shall be responsible for conducting vehicle counts/traffic counts to determine if 150 vehicle trips or more per day occur on an easement, right-of-way, and access road for utilities (transmission of electricity, natural gas, oil, water, and gas). A traffic count shall measure vehicular traffic over a 48-hour period, which may consist of two non-consecutive 24-hour periods. Vehicular traffic shall be measured continuously during each 24-hour period. The average vehicle counts/traffic counts on the highest trafficked days shall be recorded and provided to the Control Officer in writing within 60 days of verbal or written request by the Control Officer.
- (3) Control measure(s) shall be considered effectively implemented when the easement, right-of-way, and access road for utilities (transmission of electricity, natural gas, oil, water, and gas) meets the requirements described in Section 302.10(a) of this rule.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS (NOT APPLICABLE)

SECTION 500 – MONITORING AND RECORDS

501 COMPLIANCE DETERMINATION: To determine compliance with this rule, the following test methods shall be followed:

501.1 Opacity Observations:

- a. Opacity observations to measure visible emissions shall be conducted in accordance with the techniques specified in EPA Reference Method 203B (Visual Determination of Opacity of Emissions from Stationary Sources for Time-Exception Regulations). Emissions shall not exceed the applicable opacity standards of this rule for a period aggregating more than three minutes in any 60-minute period.
- b. Opacity observations to determine compliance with Sections 302.6, 302.7, 302.8(a)(1), 302.8(a)(2), and 302.10 of this rule shall be conducted in

accordance with the techniques specified in Appendix C (Fugitive Dust Test Methods) of these rules.

501.2 Stabilization observations for unpaved parking lots and/or unpaved roadways (including alleys) shall be conducted in accordance with Appendix C, Section 2.1 (Test Methods for Stabilization for Unpaved Roads and Unpaved Parking Lots) of these rules.

501.3 Stabilization observations for vehicle use in open areas and vacant lots and/or open areas and vacant lots shall be conducted in accordance with the following:

- a. Appendix C, Section 2.3 (Test Methods for Stabilization: Soil Crust Determination: The Drop Ball Test) of these rules; or
- b. Appendix C, Section 2.4 (Test Methods for Stabilization: Determination of Threshold Friction Velocity [TFV]: Sieving Field Procedure) of these rules, where the threshold friction velocity (TFV) for disturbed surface areas corrected for non-erodible elements is 100 cm/second or higher; or
- c. Appendix C, Section 2.5 (Test Methods for Stabilization: Determination of Flat Vegetative Cover) of these rules, where flat vegetation cover (i.e., attached [rooted] vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind) is equal to at least 50%; or
- d. Appendix C, Section 2.6 (Test Methods for Stabilization: Determination of Standing Vegetative Cover) of these rules, where standing vegetation cover (i.e., vegetation that is attached [rooted] with a predominant vertical orientation) is equal to or greater than 30%; or
- e. Appendix C, Section 2.6 (Test Methods for Stabilization: Determination of Standing Vegetative Cover) of these rules, where the standing vegetation cover (i.e., vegetation that is attached [rooted] with a predominant vertical orientation) is equal to or greater than 10% and where the threshold friction velocity, corrected for non-erodible elements, is equal to or greater than 43 cm/second; or
- f. Appendix C, Section 2.7 (Test Methods for Stabilization: Rock Test Method) of these rules where a percent cover is equal to or greater than 10% for non-erodible elements.
- g. An alternative test method approved in writing by the Control Officer and the Administrator.

502 RECORDKEEPING: Any person subject to the requirements of this rule shall compile and retain records that provide evidence of control measure application (i.e., receipts

and/or purchase records). Such person shall describe, in the records, the type of treatment or control measure, extent of coverage, and date applied. Upon verbal or written request by the Control Officer, such person shall provide the records and supporting documentation as soon as possible but no later than 48 hours, excluding weekends. If the Control Officer is at the site where requested records are kept, such person shall provide the records without delay.

503 RECORDS RETENTION: Copies of the records required by Section 502 (Recordkeeping) of this rule shall be retained for at least two years.



REGULATION III – CONTROL OF AIR CONTAMINANTS

RULE 310

FUGITIVE DUST FROM DUST-GENERATING OPERATIONS

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Revised 07/13/88
Revised 07/06/93
Revised 09/20/94
Revised 06/16/99
Revised 02/16/00
Revised 04/07/04
Revised 03/26/08
Revised 01/27/10

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 310
FUGITIVE DUST FROM DUST-GENERATING OPERATIONS**

SECTION 100 – GENERAL

- 101 PURPOSE:** To limit particulate matter (PM₁₀) emissions into the ambient air from any property, operation or activity that may serve as a fugitive dust source. The effect of this rule shall be to minimize the amount of PM₁₀ entrained into the ambient air as a result of the impact of human activities by requiring measures to prevent, reduce, or mitigate particulate matter emissions.
- 102 APPLICABILITY:** The provisions of this rule shall apply to all dust-generating operations except for those dust-generating operations listed in Section 103 of this rule.
- 103 EXEMPTIONS:**
- 103.1** The provisions of this rule shall not apply to normal farm cultural practices according to Arizona Revised Statutes (A.R.S.) § 49-457 and A.R.S. § 49-504.4.
- 103.2** The provisions of this rule shall not apply to the following non-traditional sources of fugitive dust that are located at sources that do not require any permit under these rules. These non-traditional sources of fugitive dust are subject to the standards and/or requirements described in Rule 310.01: Fugitive Dust from Non-Traditional Sources of Fugitive Dust of these rules:
- a. Vehicle use in open areas and vacant lots.
 - b. Open areas and vacant lots.
 - c. Unpaved parking lots.
 - d. Unpaved roadways (including alleys).

- e. Livestock activities.
- f. Erosion-caused deposition of bulk materials onto paved surfaces.
- g. Easements, rights-of-way, and access roads for utilities (transmission of electricity, natural gas, oil, water, and gas).

103.3 The provisions of this rule shall not apply to emergency activities that may disturb the soil conducted by any utility or government agency in order to prevent public injury or to restore critical utilities to functional status.

103.4 The provisions of this rule do not apply to the establishment of initial landscapes without the use of mechanized equipment, conducting landscape maintenance without the use of mechanized equipment, and playing on or maintaining a field used for non-motorized sports. However, establishing initial landscapes without the use of mechanized equipment and conducting landscape maintenance without the use of mechanized equipment shall not include grading, or trenching performed to establish initial landscapes or to redesign existing landscapes.

103.5 The provisions of this rule shall not apply to rooftop operations for cutting, drilling, grinding, or coring roofing tile when such activity is occurring on a pitched roof.

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions apply, in addition to those definitions found in Rule 100: General Provisions and Definitions of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

201 AREA A – As defined in A.R.S. § 49-541(1), the area in Maricopa County delineated as follows:

Township 8 North, Range 2 East and Range 3 East
 Township 7 North, Range 2 West through Range 5 East
 Township 6 North, Range 5 West through Range 6 East
 Township 5 North, Range 5 West through Range 7 East
 Township 4 North, Range 5 West through Range 8 East
 Township 3 North, Range 5 West through Range 8 East
 Township 2 North, Range 5 West through Range 8 East
 Township 1 North, Range 5 West through Range 7 East
 Township 1 South, Range 5 West through Range 7 East
 Township 2 South, Range 5 West through Range 7 East
 Township 3 South, Range 5 West through Range 1 East
 Township 4 South, Range 5 West through Range 1 East

202 AREA ACCESSIBLE TO THE PUBLIC – Any paved parking lot or paved roadway that can be entered or used for public travel primarily for purposes unrelated to the dust-generating operation.

203 BULK MATERIAL – Any material, including, but not limited to, the following materials that are capable of producing fugitive dust:

- 203.1 Earth.
- 203.2 Rock.
- 203.3 Silt.
- 203.4 Sediment.
- 203.5 Sand.
- 203.6 Gravel.
- 203.7 Soil.
- 203.8 Fill.
- 203.9 Aggregate less than 2 inches in length or diameter (i.e., aggregate base course [ABC]).
- 203.10 Dirt.
- 203.11 Mud.
- 203.12 Demolition debris.
- 203.13 Cotton.
- 203.14 Trash.
- 203.15 Cinders.
- 203.16 Pumice.
- 203.17 Sawdust.
- 203.18 Feeds.
- 203.19 Grains.
- 203.20 Fertilizers.
- 203.21 Fluff from shredders.
- 203.22 Dry concrete.

204 BULK MATERIAL HANDLING, STORAGE, AND/OR TRANSPORTING OPERATION – The use of equipment, haul trucks, and/or motor vehicles, including, but not limited to, for the following activities that are capable of producing fugitive dust:

- 204.1 Loading.
- 204.2 Unloading.
- 204.3 Conveying.
- 204.4 Transporting.
- 204.5 Piling.
- 204.6 Stacking.
- 204.7 Screening.
- 204.8 Grading.
- 204.9 Moving bulk materials.

205 CONTROL MEASURE – A technique, practice, or procedure used to prevent or minimize the generation, emission, entrainment, suspension, and/or airborne transport of fugitive dust. Control measures include, but are not limited to:

- 205.1 Curbing;
- 205.2 Paving;
- 205.3 Pre-watering;
- 205.4 Applying dust suppressants;
- 205.5 Physically stabilizing with vegetation, gravel, recrushed/recycled asphalt or other forms of physical stabilization;
- 205.6 Limiting, restricting, phasing and/or rerouting motor vehicle access;
- 205.7 Reducing vehicle speeds and/or number of vehicle trips;
- 205.8 Limiting use of off-road vehicles on open areas and vacant lots;
- 205.9 Utilizing work practices and/or structural provisions to prevent wind and water erosion onto areas accessible to the public;
- 205.10 Appropriately using dust control implements;
- 205.11 Installing one or more grizzlies, gravel pads, and/or wash down pads adjacent to the entrance of an area accessible to the public to control carry-out and trackout;
- 205.12 Keeping open-bodied haul trucks in good repair, so that spillage may not occur from beds, sidewalls, and tailgates; and
- 205.13 Covering the cargo beds of haul trucks to minimize wind-blown dust emissions and spillage.

206 DISTURBED SURFACE AREA – A portion of the earth's surface or material placed on the earth's surface that has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed native condition if the potential for the emission of fugitive dust is increased by the movement, destabilization, or modification.

207 DUST CONTROL IMPLEMENT – A tool, machine, equipment, accessory, structure, enclosure, cover, material or supply, including an adequate readily available supply of water and its associated distribution/delivery system, used to control fugitive dust emissions.

208 DUST CONTROL PLAN – A written plan describing all control measures to be implemented and maintained in order to prevent or minimize the generation, emission, entrainment, suspension, and/or airborne transport of fugitive dust.

209 DUST-GENERATING OPERATION – Any activity capable of generating fugitive dust, including, but not limited to, the following activities:

- 209.1 Land clearing, maintenance, and land clean-up using mechanized equipment.
- 209.2 Earthmoving.
- 209.3 Weed abatement by discing or blading.
- 209.4 Excavating.
- 209.5 Construction.

- 209.6 Demolition.
 - 209.7 Bulk material handling (e.g., bulk material hauling and/or transporting, bulk material stacking, loading, and unloading operations).
 - 209.8 Storage and/or transporting operations (e.g., open storage piles).
 - 209.9 Operation of any outdoor equipment.
 - 209.10 Operation of motorized machinery.
 - 209.11 Establishing and/or using staging areas, parking areas, material storage areas, or access routes to and from a site.
 - 209.12 Establishing and/or using unpaved haul/access roads to, from, and within a site.
 - 209.13 Disturbed surface areas associated with a site.
 - 209.14 Installing initial landscapes using mechanized equipment.
- 210 DUST SUPPRESSANT** – Water, hygroscopic material, solution of water and chemical surfactant, foam, non-toxic chemical stabilizer or any other dust palliative, which is not prohibited for ground surface application by the U.S. Environmental Protection Agency (EPA) or the Arizona Department of Environmental Quality (ADEQ) or any applicable law, rule, or regulation, as a treatment material for reducing fugitive dust emissions.
- 211 EARTHMOVING OPERATION** – The use of any equipment for an activity that may generate fugitive dust, such as but not limited to, the following activities:
- 211.1 Cutting and filling.
 - 211.2 Grading.
 - 211.3 Leveling.
 - 211.4 Excavating.
 - 211.5 Trenching.
 - 211.6 Loading or unloading of bulk materials.
 - 211.7 Demolishing.
 - 211.8 Blasting.
 - 211.9 Drilling.
 - 211.10 Adding bulk materials to or removing bulk materials from open storage piles.
 - 211.11 Back filling.
 - 211.12 Soil mulching.
 - 211.13 Landfill operations.
 - 211.14 Weed abatement by discing or blading.
- 212 EMERGENCY** – A situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a limitation in this rule, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include any noncompliance due to improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.
- 213 EMERGENCY ACTIVITY** – Repairs that are a result of an emergency which prevents or hinders the provision of electricity, the distribution/collection of water, and the

availability of other utilities due to unforeseen circumstances that are beyond the routine maintenance and repair due to normal wear conducted by a utility or municipality.

- 214 END OF WORKDAY** – The end of a working period that may include one or more work shifts. If working 24 hours a day, the end of a working period shall be considered no later than 8 pm.
- 215 FREEBOARD** – The vertical distance between the top edge of a cargo container area and the highest point at which the bulk material contacts the sides, front, and back of a cargo container area.
- 216 FUGITIVE DUST** – The particulate matter not collected by a capture system, that is entrained in the ambient air, and is caused from human and/or natural activities, such as, but not limited to, the movement of soil, vehicles, equipment, blasting, and wind. For the purpose of this rule, fugitive dust does not include particulate matter emitted directly from the exhaust of motor vehicles and other internal combustion engines, from portable brazing, soldering, or welding equipment, and from piledrivers, and does not include emissions from process and combustion sources that are subject to other rules in Regulation III (Control of Air Contaminants) of these rules.
- 217 GRAVEL PAD** – A layer of washed gravel, rock, or crushed rock that is at least one inch or larger in diameter, that is maintained at the point of intersection of an area accessible to the public and a work site exit to dislodge mud, dirt, and/or debris from the tires of motor vehicles and/or haul trucks, prior to leaving the work site. Minimum dimensions must be 30 feet wide by 3 inches deep and 50 feet long, or the length of the longest haul truck, whichever is greater. If an unpaved surface exit does not have adequate width to install a 30-foot wide gravel pad, then the width of the gravel pad must cover the full width of the unpaved surface exit and such shorter width must be adequate to prevent trackout.
- 218 GRIZZLY** – A device (i.e., rails, pipes, or grates) used to dislodge mud, dirt, and/or debris from the tires and undercarriage of motor vehicles and/or haul trucks prior to leaving the work site.
- 219 HAUL TRUCK** – Any fully or partially open-bodied self-propelled vehicle including any non-motorized attachments, such as, but not limited to, trailers or other conveyances that are connected to or propelled by the actual motorized portion of the vehicle used for transporting bulk materials.
- 220 MOTOR VEHICLE** – A self-propelled vehicle for use on the public roads and highways of the State of Arizona and required to be registered under the Arizona State Uniform Motor Vehicle Act, including any non-motorized attachments, such as but not limited to, trailers or other conveyances which are connected to or propelled by the actual motorized portion of the vehicle.

- 221 NORMAL FARM CULTURAL PRACTICE** – All activities by the owner, lessee, agent, independent contractor, and/or supplier conducted on any facility for the production of crops and/or nursery plants. Disturbances of the field surface caused by turning under stalks, tilling, leveling, planting, fertilizing, or harvesting are included in this definition.
- 222 OFF-ROAD VEHICLE** – Any self-propelled conveyance specifically designed for off-road use, including, but not limited to, off-road or all-terrain equipment, trucks, cars, motorcycles, motorbikes, or motorbuggies.
- 223 OPEN STORAGE PILE** – Any accumulation of bulk material with a 5% or greater silt content that has a total surface area of 150 square feet or more and that at any one point attains a height of three feet. Silt content shall be assumed to be 5% or greater unless a person can show, by testing in accordance with ASTM Method C136-06 or other equivalent method approved in writing by the Control Officer and the Administrator, that the silt content is less than 5%.
- 224 OWNER AND/OR OPERATOR** – The person including, but not limited to, the property owner, lessee, developer, responsible official, Dust Control permit applicant (who may also be the responsible party contracting to do the work), general contractor, prime contractor, supervisor, management company, or any person who owns, leases, operates, controls, or supervises a dust-generating operation subject to the requirements of this rule.
- 225 PAVE** – To apply and maintain asphalt, concrete, or other similar material to a roadway surface (i.e., asphaltic concrete, concrete pavement, chip seal, or rubberized asphalt).
- 226 PROPERTY LINE** – The boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.
- 227 ROUTINE** – Any dust-generating operation which occurs more than 4 times per year or lasts 30 cumulative days or more per year.
- 228 SILT** – Any aggregate material with a particle size less than 75 micrometers in diameter, which passes through a No. 200 sieve.
- 229 TRACKOUT/CARRYOUT** – Any and all bulk materials that adhere to and agglomerate on the surfaces of motor vehicles, haul trucks, and/or equipment (including tires) and that have fallen or been deposited onto an area accessible to the public.
- 230 TRACKOUT CONTROL DEVICE** – A gravel pad, grizzly, wheel wash system, or a paved area, located at the point of intersection of an unpaved area and an area accessible to the public that controls or prevents vehicular trackout.

- 231 **UNPAVED HAUL/ACCESS ROAD** – Any on-site unpaved road used by commercial, industrial, institutional, and/or governmental traffic.
- 232 **UNPAVED PARKING LOT** – Any area that is not paved and that is designated for parking in the Dust Control Plan or that is used for parking, maneuvering, material handling, or storing motor vehicles and equipment. An unpaved parking lot includes, but is not limited to, automobile impound yards, wrecking yards, automobile dismantling yards, salvage yards, material handling yards, and storage yards. For the purpose of this rule, maneuvering shall not include military maneuvers or exercises conducted on federal facilities.
- 233 **UNPAVED ROAD** – Any road or equipment path that is not paved. For the purpose of this rule, an unpaved road is not a horse trail, hiking path, bicycle path, or other similar path used exclusively for purposes other than travel by motor vehicles.
- 234 **WIND-BLOWN DUST** – Visible emissions, from any disturbed surface area, that are generated by wind action alone.
- 235 **WORK SITE** – Any property upon which any dust-generating operations occur.

SECTION 300 – STANDARDS

301 GENERAL REQUIREMENTS FOR DUST-GENERATING OPERATIONS:

- 301.1 Any person engaged in a dust-generating operation subject to this rule shall be subject to the standards and/or requirements of this rule before, after, and while conducting such dust-generating operation, including during weekends, after work hours, and on holidays.
- 301.2 For the purpose of this rule, any control measure that is implemented must achieve the applicable standard(s) described in this rule, as determined by the corresponding test method(s), as applicable, and must achieve other applicable standard(s) set forth in this rule.
- 301.3 Control measures described in Section 305 of this rule. Regardless of whether a dust-generating operation is in compliance with an approved Dust Control Plan or there is no approved Dust Control Plan, the owner and/or operator of a dust-generating operation shall be subject to all requirements of this rule at all times.
- 301.4 Failure to comply with the provisions of this rule, as applicable, and/or of an approved Dust Control Plan, shall constitute a violation.

302 PERMIT REQUIREMENTS FOR DUST-GENERATING OPERATIONS:

- 302.1 No person shall commence construction of, operate, or make a modification to any dust-generating operation when such dust-generating operations disturb a

total surface area of 0.10 acre (4,356 square feet) or more without first obtaining a permit or permit revision from the Control Officer.

- 302.2** No person shall commence construction of, operate, or make a modification to any dust-generating operation that disturbs a total surface area of less than 0.10 acre (4,356 square feet) under common control that are either contiguous or separated only by a public or private roadway and that cumulatively equal or exceed 0.10 acre in area without first obtaining a permit or permit revision from the Control Officer.
- 302.3** No person shall commence any routine dust-generating operation that disturbs a surface area of 0.10 acre or greater at a site that has obtained or must obtain a Title V, Non-Title V, or General permit under Regulation II (Permits and Fees) of these rules without first submitting to the Control Officer a Dust Control Plan.
- 302.4** The property owner, lessee, developer, responsible official, Dust Control permit applicant (who may also be the responsible party contracting to do the work), general contractor, prime contractor, supervisor, management company, or any person who owns, leases, operates, controls, or supervises a dust-generating operation subject to the requirements of this rule shall be responsible for obtaining a permit or permit revision from the Control Officer.
- 302.5** All permit applications shall be filed in the manner and form prescribed by the Control Officer, which includes, but is not limited to, the requirements of Section 400 of this rule. The application shall contain all the information necessary to enable the Control Officer to make the determination to grant or to deny a permit or permit revision, which shall contain such terms and conditions as the Control Officer deems necessary to assure a source's compliance with the requirements of this rule.
- 302.6** The issuance of any permit or permit revision shall not relieve any person subject to the requirements of this rule from compliance with any Federal laws, Arizona laws, or these rules.
- 302.7** Any other law, regulation or permit shall not relieve any person from obtaining a permit or permit revision required under this rule.

303 VISIBLE EMISSIONS REQUIREMENTS FOR DUST-GENERATING OPERATIONS:

- 303.1 Dust-Generating Operation Visible Emissions Requirement:** The owner and/or operator of a dust-generating operation shall not allow visible fugitive dust emissions to exceed the limits listed in either one of the following:
- a. The owner and/or operator of a dust-generating operation shall not cause or allow visible fugitive dust emissions to exceed 20% opacity.

- b. The owner and/or operator of a dust-generating operation shall not cause or allow visible emissions of particulate matter, including fugitive dust, beyond the property line within which the emissions are generated. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined by using EPA Reference Method 22.

303.2 Exemptions from Dust-Generating Operation Visible Emissions Requirement:

- a. If wind conditions cause fugitive dust emissions to exceed the visible emissions requirements in Section 303.1(a) of this rule, despite implementation of the Dust Control Plan, an owner and/or operator shall:
 - (1) Ensure that all control measures and requirements of the Dust Control Plan are implemented and the subject violations cannot be prevented by better application, operation, or maintenance of these measures and requirements.
 - (2) Cease dust-generating operations and stabilize any disturbed surface area consistent with Section 304.3 of this rule.
 - (3) Compile records consistent with Sections 502 and 503 of this rule and document control measure and other Dust Control Plan requirement implementation.
- b. **Emergency Maintenance of Flood Control Channels and Water Retention Basins:** The visible emissions limits described in Section 303.1 of this rule shall not apply to emergency maintenance of flood control channels and water retention basins, provided that control measures are implemented.
- c. **Vehicle Test and Development Facilities and Operations:** The visible emissions limit described in Section 303.1(a) of this rule shall not apply to vehicle test and development facilities and operations when dust is required to test and validate design integrity, product quality, and/or commercial acceptance, if such testing is not feasible within enclosed facilities. However, all areas used to test and validate design integrity, product quality, and/or commercial acceptance shall be stabilized after such testing, in compliance with Appendix C (Fugitive Dust Test Methods) of these rules. All areas not used to test and validate design integrity, product quality, and/or commercial acceptance shall be stabilized, in compliance with Appendix C (Fugitive Dust Test Methods) of these rules. In addition, vehicle test and development facilities may require a Dust Control permit in accordance with Section 302 of this rule.

- d. **Activities Near the Property Line:** The opacity limit described in Section 303.1(b) of this rule shall not apply to dust-generating operations conducted within 25 feet of the property line.
- e. **Ceasing Operations at a Solid Waste Management Facility:** The requirement in Section 303.2(a)(2) of this rule to cease dust-generating operations if wind conditions cause fugitive dust emissions to exceed the visible emissions requirements in Section 303.1(a) of this rule shall not apply to daily compaction and covering of refuse if ceasing operations violates Arizona Department of Environmental Quality solid waste management rules or causes or threatens to cause a public health hazard or nuisance. However, the owner and/or operator must comply with all other provisions in Section 303.2(a) of this rule.

304 STABILIZATION REQUIREMENTS FOR DUST-GENERATING OPERATIONS:

304.1 Unpaved Parking Lot: The owner and/or operator of any unpaved parking lot shall not allow visible fugitive dust emissions to exceed 20% opacity and shall not allow silt loading equal to or greater than 0.33 oz/ft². However, if silt loading is equal to or greater than 0.33 oz/ft², then the owner and/or operator shall not allow the silt content to exceed 8%.

304.2 Unpaved Haul/Access Road:

- a. The owner and/or operator of any unpaved haul/access road (whether at a work site that is under construction or at a work site that is temporarily or permanently inactive) shall not allow visible fugitive dust emissions to exceed 20% opacity and shall not allow silt loading equal to or greater than 0.33 oz/ft². However, if silt loading is equal to or greater than 0.33 oz/ft², then the owner and/or operator shall not allow the silt content to exceed 6%.
- b. The owner and/or operator of any unpaved haul/access road (whether at a work site that is under construction or a work site that is temporarily or permanently inactive) shall, as an alternative to meeting the stabilization requirements for an unpaved haul/access road in Section 304.2(a) of this rule, limit vehicle trips to no more than 20 per day per road and limit vehicle speeds to no more than 15 miles per hour. If complying with this section of this rule, the owner and/or operator must include, in a Dust Control Plan, the maximum number of vehicle trips on the unpaved haul/access roads each day (including number of employee vehicles, earthmoving equipment, haul trucks, and water trucks) and a description of how vehicle speeds will be restricted to no more than 15 miles per hour.

304.3 Disturbed Surface Area: The owner and/or operator of any disturbed surface area on which no activity is occurring (whether at a work site that is under construction or a work site that is temporarily or permanently inactive) shall meet

at least one of the standards described in Sections 304.3(a) through 304.3(g) below, as applicable. Should such a disturbed surface area contain more than one type of stabilization characteristic, such as soil, vegetation, or other characteristic, which is visibly distinguishable, then the owner and/or operator shall test each representative surface separately for stability, in an area that represents a random portion of the overall disturbed conditions of the site, in accordance with the appropriate test methods described in Section 501.2(c) of this rule and in Appendix C (Fugitive Dust Test Methods) of these rules. The owner and/or operator of such disturbed surface area on which no activity is occurring shall be considered in violation of this rule if the area is not maintained in a manner that meets at least one of the standards listed below, as applicable. An area is considered to be a disturbed surface area until the activity that caused the disturbance has been completed and the disturbed surface area meets the standards described in this section of this rule.

- a. Maintain a soil crust;
- b. Maintain a threshold friction velocity (TFV) for disturbed surface areas corrected for non-erodible elements of 100 cm/second or higher;
- c. Maintain a flat vegetative cover (i.e., attached [rooted] vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind) that is equal to at least 50%;
- d. Maintain a standing vegetative cover (i.e., vegetation that is attached [rooted] with a predominant vertical orientation) that is equal to or greater than 30%;
- e. Maintain a standing vegetative cover (i.e., vegetation that is attached [rooted] with a predominant vertical orientation) that is equal to or greater than 10% and where the threshold friction velocity is equal to or greater than 43 cm/second when corrected for non-erodible elements;
- f. Maintain a percent cover that is equal to or greater than 10% for non-erodible elements; or
- g. Comply with a standard of an alternative test method, upon obtaining the written approval from the Control Officer and the Administrator.

304.4 Vehicle Test and Development Facilities and Operations: No stabilization requirement shall apply to vehicle test and development facilities and operations when dust is required to test and validate design integrity, product quality, and/or commercial acceptance, if such testing is not feasible within enclosed facilities. However, all areas used to test and validate design integrity, product quality, and/or commercial acceptance shall be stabilized after such testing, in compliance with Appendix C (Fugitive Dust Test Methods) of these rules. All areas not used

to test and validate design integrity, product quality, and/or commercial acceptance shall be stabilized, in compliance with Appendix C (Fugitive Dust Test Methods) of these rules. In addition, vehicle test and development facilities may require a Dust Control permit in accordance with Section 302 of this rule.

305 CONTROL MEASURES FOR DUST-GENERATING OPERATIONS: When engaged in a dust-generating operation, the owner and/or operator shall install, maintain, and use control measures, as applicable. Control measures for specific dust-generating operations are described in Sections 305.1 through 305.12 of this rule. The owner and/or operator of a dust-generating operation shall implement control measures before, after, and while conducting dust-generating operations, including during weekends, after work hours, and on holidays. At least one primary control measure and one contingency control measure must be identified in the Dust Control Plan for all dust-generating sources.

305.1 Off-Site Hauling onto Areas Accessible to the Public: The owner and/or operator of a dust-generating operation that involves off-site hauling shall implement the following control measures:

- a. When cargo compartment is loaded:
 - (1) Load all haul trucks such that the freeboard is not less than three inches;
 - (2) Load all haul trucks such that at no time shall the highest point of the bulk material be higher than the sides, front, and back of a cargo container area;
 - (3) Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate(s); and
 - (4) Cover the cargo compartment with a tarp or other suitable closure.
- b. When cargo compartment is empty:
 - (1) Clean the interior of the cargo compartment; or
 - (2) Cover the cargo compartment with a tarp or other suitable closure.
- c. When off-site hauling, install, maintain, and use a suitable trackout control device that controls and prevents trackout and/or removes particulate matter from tires and the exterior surfaces of haul trucks and/or motor vehicles that traverse the site.

305.2 Bulk Material Hauling/Transporting When On-Site Hauling/Transporting Within the Boundaries of the Work Site but not Crossing an Area Accessible to the Public: The owner and/or operator of a dust-generating operation that involves bulk material hauling/transporting when on-site hauling/transporting

within the boundaries of the work site but not crossing an area accessible to the public shall implement one of the following control measures:

- a. Limit vehicle speed to 15 miles per hour or less while traveling on the work site;
- b. Apply water to the top of the load; or
- c. Cover haul trucks with a tarp or other suitable closure.

305.3 Bulk Material Hauling/Transporting When On-Site Hauling/Transporting Within the Boundaries of the Work Site and Crossing and/or Accessing an Area Accessible to the Public: The owner and/or operator of a dust-generating operation that involves bulk material hauling/transporting when on-site hauling/transporting within the boundaries of the work site and crossing and/or accessing an area accessible to the public shall implement all of the following control measures:

- a. Load all haul trucks such that the freeboard is not less than three inches;
- b. Load all haul trucks such that at no time shall the highest point of the bulk material be higher than the sides, front, and back of a cargo container area;
- c. Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate(s); and
- d. When crossing and/or accessing an area accessible to the public, install, maintain, and use a suitable trackout control device that controls and prevents trackout and/or removes particulate matter from tires and the exterior surfaces of haul trucks and/or motor vehicles that traverse the site.

305.4 Bulk Material Stacking, Loading, and Unloading Operations: The owner and/or operator of a dust-generating operation that involves bulk material stacking, loading, and unloading operations shall implement the following control measures:

- a. Prior to stacking, loading, and unloading:
 - (1) Mix material with water; or
 - (2) Mix material with a dust suppressant other than water.
- b. While stacking, loading, and unloading:
 - (1) Apply water; or

(2) Apply a dust suppressant other than water.

305.5 Open Storage Piles: The owner and/or operator of a dust-generating operation that involves an open storage pile shall implement one of the following control measures, as applicable, when not conducting stacking, loading, and unloading operations:

- a. Cover all open storage piles with a tarp, plastic, or other material to prevent wind from removing the covering(s) such that the covering(s) will not be dislodged by wind; or
- b. Apply water to maintain a soil moisture content at a minimum of 12%, as determined by ASTM Method D2216-05 or other equivalent methods approved by the Control Officer and the Administrator. For areas that have an optimum moisture content for compaction of less than 12%, as determined by ASTM Method D1557-02e1 or other equivalent methods approved by the Control Officer and the Administrator, maintain at least 70% of the optimum soil moisture content; or
- c. Maintain a visible crust; or
- d. Implement the control measure described in Section 305.5(b) or in Section 305.5(c) of this rule and construct and maintain wind barriers, storage silos, or a three-sided enclosure with walls, whose length is no less than equal to the length of the pile, whose distance from the pile is no more than twice the height of the pile, whose height is equal to the pile height, and whose porosity is no more than 50%.

305.6 Unpaved Staging Areas, Unpaved Parking Areas, and Unpaved Material Storage Areas: The owner and/or operator of a dust-generating operation that involves unpaved staging areas, unpaved parking areas, and unpaved material storage areas shall implement one or more of the following control measures:

- a. Apply water so that the surface is visibly moist;
- b. Pave;
- c. Apply and maintain gravel, recycled asphalt, or other suitable material;
- d. Apply and maintain a suitable dust suppressant other than water; or
- e. Limit vehicle trips to no more than 20 per day per road and limit vehicle speeds to no more than 15 miles per hour. If complying with this section, the owner and/or operator shall provide to the Control Officer the maximum number of vehicle trips on the staging areas, parking areas, and/or material storage areas each day (including number of employee vehicles, earthmoving

equipment, haul trucks, and water trucks) and a description of how vehicle speeds will be restricted to no more than 15 miles per hour.

305.7 Unpaved Haul/Access Roads: The owner and/or operator of a dust-generating operation that involves unpaved haul/access roads shall implement one or more of the following control measures:

- a. Apply water so that the surface is visibly moist;
- b. Pave;
- c. Apply and maintain gravel, recycled asphalt, or other suitable material;
- d. Apply and maintain a suitable dust suppressant other than water; or
- e. Limit vehicle trips to no more than 20 per day per road and limit vehicle speeds to no more than 15 miles per hour. If complying with this section of this rule, the owner and/or operator shall provide to the Control Officer the maximum number of vehicle trips on the unpaved haul/access roads each day (including number of employee vehicles, earthmoving equipment, haul trucks, and water trucks) and a description of how vehicle speeds will be restricted to no more than 15 miles per hour.

305.8 Weed Abatement by Discing or Blading: The owner and/or operator of a dust-generating operation that involves weed abatement by discing or blading shall comply with all of the following control measures:

- a. Before weed abatement by discing or blading occurs, apply water;
- b. While weed abatement by discing or blading is occurring, apply water; and
- c. After weed abatement by discing or blading occurs, pave, apply gravel, apply water, apply a suitable dust suppressant other than water, or establish vegetative ground cover.

305.9 Blasting Operations: The owner and/or operator of a dust-generating operation that involves blasting operations shall pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate.

305.10 Demolition Activities: The owner and/or operator of a dust-generating operation that involves demolition activities shall implement all of the following control measures:

- a. Apply water to demolition debris immediately following demolition activity; and

- b. Apply water to all disturbed soils surfaces to establish a visible crust and to prevent wind erosion.

305.11 Disturbed Surface Areas: The owner and/or operator of a dust-generating operation that involves disturbed surface areas shall implement the following control measures, as applicable:

- a. Before disturbed surface areas are created, implement one of the following control measures:
 - (1) Pre-water site to depth of cuts, allowing time for penetration; or
 - (2) Phase work to reduce the amount of disturbed surface areas at any one time.
- b. While disturbed surface areas are being created, implement one of the following control measures:
 - (1) Apply water or other suitable dust suppressant other than water to keep the soil visibly moist throughout the process;
 - (2) Apply water to maintain a soil moisture content at a minimum of 12%, as determined by ASTM Method D2216-05 or other equivalent method as approved by the Control Officer and the Administrator. For areas that have an optimum moisture content for compaction of less than 12%, as determined by ASTM Method D1557-02e1 or other equivalent method approved by the Control Officer and the Administrator, maintain at least 70% of the optimum soil moisture content; or
 - (3) Implement control measure described in Section 305.11(b)(1) or Section 305.11(b)(2) of this rule and construct fences or three-foot to five-foot high wind barriers with 50% or less porosity adjacent to roadways or urban areas to reduce the amount of wind-blown material leaving a site.
- c. When the dust-generating operation is finished for a period of 30 days or longer: For longer than temporary pauses that occur during a dust-generating operation, the owner and/or operator shall implement one or more of the following control measures within ten days following the completion of such dust-generating operation:
 - (1) Pave, apply gravel, or apply a suitable dust suppressant other than water;
 - (2) Establish vegetative ground cover;
 - (3) Implement control measures described in Section 305.11(c)(1) or Section 305.11(c)(2) of this rule and restrict vehicle access to the area;

- (4) Apply water and prevent access by fences, ditches, vegetation, berms, or other suitable barrier or means sufficient to prevent trespass as approved by the Control Officer; or
- (5) Restore area such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby undisturbed native conditions.

305.12 Easements, Rights-of-Way, and Access Roads for Utilities (Transmission of Electricity, Natural Gas, Oil, Water, and Gas) Associated With Sources That Have a Non-Title V Permit, a Title V Permit, and/or a General Permit Under These Rules: The owner and/or operator of a dust-generating operation that involves an easement, right-of-way, and access road for utilities (transmission of electricity, natural gas, oil, water, and gas) associated with sources that have a Title V permit, a Non-Title V permit, and/or a General permit under these rules shall implement at least one of the following control measures:

- a. Inside Area A, limit vehicle speed to 15 miles per hour or less and vehicle trips to no more than 20 per day per road;
- b. Outside Area A, limit vehicle trips to no more than 20 per day per road; or
- c. Implement control measures described in Section 305.7 of this rule.

306 TRACKOUT, CARRY-OUT, SPILLAGE, AND/OR EROSION: The owner and/or operator of a dust-generating operation shall prevent and control trackout, carry-out, spillage, and/or erosion.

306.1 Trackout Control Device:

- a. **Criterion for Trackout Control Device:** Install, maintain and use a suitable trackout control device that prevents and controls trackout and/or removes particulate matter from tires and the exterior surfaces of haul trucks and/or motor vehicles that traverse the site at all exits onto areas accessible to the public from both of the following:
 - (1) All work sites with a disturbed surface area of two acres or larger, and
 - (2) All work sites where 100 cubic yards of bulk materials are hauled on-site and/or off-site per day.
- b. **Control Measures:** For those work sites identified in Section 306.1(a) of this rule, prevent trackout, carry-out, spillage, and/or erosion by implementing one of the following control measures:

- (1) At all exits onto areas accessible to the public, install a wheel wash system;
- (2) At all exits onto areas accessible to the public, install a gravel pad to comply with Section 217 of this rule;
- (3) At all exits onto areas accessible to the public, install a grizzly or rumble grate that consists of raised dividers (rails, pipes, or grates) a minimum of three inches tall, six inches apart, and 20 feet long, to allow a vibration to be produced such that dust is shaken off the wheels of a vehicle as the entire circumference of each wheel of the vehicle passes over the grizzly or rumble grate; or
- (4) Pave starting from the point of intersection with an area accessible to the public and extending for a centerline distance of at least 100 feet and a width of at least 20 feet.

306.2 Clean Up of Trackout:

- a. **Criterion for Clean Up of Trackout:** Clean up, trackout, carry-out, spillage, and/or erosion from areas accessible to the public including curbs, gutters, and sidewalks, on the following time-schedule:

- (1) Immediately, when trackout, carry-out, or spillage extends a cumulative distance of 25 linear feet or more; and
- (2) At the end of the workday, for all other trackout, carry-out, spillage, and/or erosion.

- b. **Control Measures:**

- (1) Operate a street sweeper or wet broom with sufficient water, or including but not limited to kick broom, steel bristle broom, Teflon broom, vacuum, at the speed recommended by the manufacturer and at the frequency(ies) described in this section of this rule; or
- (2) Manually sweep up deposits to comply with this section of this rule.

307 SOIL MOISTURE: If water is the chosen control measure in an approved Dust Control Plan, the owner and/or operator of a dust-generating operation shall operate a water application system on-site (e.g., water truck, water hose) while conducting any earth-moving operations on disturbed surface areas 1 acre or larger, unless a visible crust is maintained or the soil is sufficiently damp to prevent loose grains of soil from becoming dislodged.

308 PROJECT INFORMATION SIGN FOR DUST-GENERATING OPERATIONS:

For all sites with a Dust Control permit that are five acres or larger, except for routine maintenance and repair done under a Dust Control Block permit, the owner and/or operator shall erect and maintain a project information sign at the main entrance such that members of the public can easily view and read the sign at all times. Such sign shall have a white background, have black block lettering that is at least four inches high, and shall contain at least all of the following information:

308.1 Project name and permittee's name;

308.2 Current Dust Control permit number;

308.3 Name and local phone number of person(s) responsible for dust control matters;

308.4 Text stating: "Dust complaints? Call Maricopa County Air Quality Department – (Insert the accurate Maricopa County Air Quality Department complaint line telephone number)."

309 DUST CONTROL TRAINING CLASSES FOR DUST-GENERATING OPERATIONS:

309.1 Basic Dust Control Training Class:

- a. At least once every three years, the persons specified in Section 309.1(b) or Section 309.1(c) of this rule shall successfully complete a Basic Dust Control Training Class conducted or approved by the Control Officer.
- b. The following persons present at a site that is subject to a permit issued by the Control Officer requiring control of PM₁₀ emissions from dust-generating operations shall complete a Basic Dust Control Training Class as specified in Section 309.1(a) of this rule:
 - (1) Water truck drivers.
 - (2) Water-pull drivers.
 - (3) The site superintendent or other designated on-site representative of the permit holder, if present at a site that has more than one acre of disturbed surface area.
- c. A Dust Control Block Permit permittee/holder shall have, at a minimum, one individual trained in accordance with the Basic Dust Control Training Class as specified in Section 309.1(a) of this rule, if present at a site that has more than one acre of disturbed surface area.

- d. All persons having successfully completed training during the 2006 and 2007 calendar years shall be deemed to have satisfied the requirement to successfully complete the Basic Dust Control Training Class, if the training that was completed was conducted or approved by the Control Officer. Completion of the Comprehensive Dust Control Training Class, as required in Section 309.2 of this rule, shall satisfy the requirement of this section of this rule.
- e. The Control Officer may suspend or revoke for cause including, but not limited to, inappropriate ethical activities or conduct associated with the dust control program or repeated failure to follow the training requirements, a certification issued to a person having successfully completed a Basic Dust Control Training Class conducted or approved by the Control Officer. The Control Officer will provide written notification to such person regarding such suspension or revocation.

309.2 Comprehensive Dust Control Training Class:

- a. At least once every three years, the Dust Control Coordinator, who meets the requirements of Section 310 of this rule, shall successfully complete the Comprehensive Dust Control Training Class conducted or approved by the Control Officer.
- b. All persons having successfully completed training during the 2006 and 2007 calendar years shall be deemed to have satisfied the requirement to successfully complete the Comprehensive Dust Control Training Class, if the training that was completed was conducted or approved by the Control Officer.
- c. The Control Officer may suspend or revoke for cause including, but not limited to, inappropriate ethical activities or conduct associated with the dust control program or repeated failure to follow the training requirements, a certification issued to a person having successfully completed a Comprehensive Dust Control Training Class conducted or approved by the Control Officer. The Control Officer will provide written notification to such person regarding such suspension or revocation.

310 DUST CONTROL COORDINATOR FOR DUST-GENERATING OPERATIONS:

- 310.1** The permittee for any site of five acres or more of disturbed surface area subject to a permit issued by the Control Officer requiring control of PM₁₀ emissions from dust-generating operations shall have on-site at least one Dust Control Coordinator trained in accordance with Section 309.2 of this rule at all times during primary dust-generating operations related to the purposes for which the Dust Control permit was obtained.
- 310.2** The Dust Control Coordinator shall have full authority to ensure that dust control measures are implemented on-site, including conducting inspections, deployment

of dust suppression resources, and modifications or shut-down of activities as needed to control dust.

310.3 The Dust Control Coordinator shall be responsible for managing dust prevention and dust control on the site.

310.4 At least once every three years, the Dust Control Coordinator shall successfully complete a Comprehensive Dust Control Training Class conducted or approved by the Control Officer.

310.5 The Dust Control Coordinator shall have a valid dust training certification identification card readily accessible on-site while acting as a Dust Control Coordinator.

310.6 The requirement for a Dust Control Coordinator shall lapse when all of the following actions/events/procedures occur:

- a. The area of disturbed surface area becomes less than five acres;
- b. The previously disturbed surface areas have been stabilized in accordance with/in compliance with the standards and/or requirements of this rule; and
- c. The Dust Control permit holder provides notice to the Control Officer of acreage stabilization.

310.7 The Dust Control Block Permit permittee/holder shall have on sites that have more than one acre of disturbed surface area at least one individual, who has been trained in accordance with the requirements of Section 309.1(c) of this rule. One such individual shall be designated by the Dust Control Block Permit permittee/holder as the Dust Control Coordinator. The Dust Control Coordinator shall be present on-site at all times during primary dust-generating activities that are related to the purposes for which the permit was obtained.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 DUST CONTROL PERMIT REQUIREMENTS:

401.1 To apply for a Dust Control permit, an applicant shall complete a permit application in the manner and form prescribed by the Control Officer. At a minimum, such application shall contain the following information:

- a. Applicant information;
- b. Project information, which shall include a project site drawing and, if the site is one acre or larger, soil designations; and

- c. Dust Control Plan, which shall meet the specifications described in Section 402 of this rule.

401.2 A Dust Control permit shall be granted subject to, but not limited to, the following conditions:

- a. The permittee shall be responsible for ensuring that all persons abide by the conditions of the Dust Control permit and these regulations;
- b. The permittee shall be responsible for supplying complete copies of the Dust Control permit including the Dust Control Plan, to all project contractors and subcontractors;
- c. The permittee shall be responsible for all permit conditions, until a Permit Cancellation Request form has been submitted by the owner and/or operator and approved by the Control Officer;
- d. The permittee shall be responsible for providing Dust Control Coordinator's/ Coordinators' name(s) and dust control training certification information/ number(s) to the Control Officer and for keeping such information updated.

401.3 The signature of the permittee on the Dust Control permit application shall constitute agreement to accept responsibility for meeting the conditions of the Dust Control permit and for ensuring that control measures are implemented throughout the project site and during the duration of the project.

402 DUST CONTROL PLAN REQUIREMENTS:

402.1 The owner and/or operator of a dust-generating operation shall submit to the Control Officer a Dust Control Plan with any permit applications that involve dust-generating operations with a disturbed surface area that equals or exceeds 0.10 acre (4,356 square feet) including both of the following situations:

- a. When submitting an application for a Dust Control permit involving dust-generating operations that would equal or exceed 0.10 acre (4,356 square feet), and
- b. Before commencing any routine dust-generating operation at a site that has obtained or must obtain a Title V, Non-Title V, or General permit under Regulation II (Permits and Fees) of these rules.

402.2 The owner and/or operator of a dust-generating operation shall submit to the Control Officer a Dust Control Plan with any application for a Dust Control permit. Applicants shall describe, in a Dust Control Plan, all control measures to be implemented before, after, and while conducting any dust-generating operation, including during weekends, after work hours, and on holidays.

402.3 A Dust Control Plan shall, at a minimum, contain all of the following information:

- a. Name(s), address(es), and phone numbers of person(s) responsible for the submittal and implementation of the Dust Control Plan and responsible for the dust-generating operation.
- b. A drawing, on 8½" x 11" paper, that shows:
 - (1) Entire project site/facility boundaries, including boundaries of areas to be disturbed if less than entire project site/facility boundaries,
 - (2) Acres to be disturbed with linear dimensions or certification by a licensed engineer or surveyor showing the total square footage to be disturbed,
 - (3) Nearest public roads,
 - (4) North arrow,
 - (5) Planned exit locations onto areas accessible to the public, and
 - (6) Unpaved parking lot(s).
- c. Appropriate control measures, or a combination thereof, as described in Sections 305 and 306 of this rule, for every actual and potential dust-generating operation.
 - (1) Control measures must be implemented before, after, and while conducting any dust-generating operation, including during weekends, after work hours, and on holidays.
 - (2) All required control measures and at least one contingency control measure must be identified for all dust-generating operations.
 - (3) A control measure that is not listed in Section 305 or in Section 306 of this rule may be chosen provided that such control measure is implemented to comply with the requirements of this rule.
 - (4) If complying with Section 305.7(e) of this rule, the Dust Control Plan must include the maximum number of vehicle trips on the unpaved haul/access roads each day (including number of employee vehicles, earthmoving equipment, haul trucks, and water trucks).
- d. Dust suppressants to be applied, including all of the following product specifications or label instructions for approved usage:

- (1) Method, frequency, and intensity of application;
- (2) Type, number, and capacity of application equipment; and
- (3) Information on environmental impacts and approvals or certifications related to appropriate and safe use for ground application.

e. Specific surface treatment(s) and/or control measures utilized to control material trackout and sedimentation where unpaved roads and/or access points join areas accessible to the public.

402.4 The Control Officer shall approve, disapprove, or conditionally approve the Dust Control Plan, in accordance with the criteria used to approve, disapprove or conditionally approve a permit, as described in Rule 200: Permit Requirements of these rules.

402.5 For construction projects one acre or larger, except for routine maintenance and repair done under a Dust Control Block Permit, a statement disclosing which of the four designated texture(s) of soil described in Appendix F of these rules is naturally present at or will be imported to the dust-generating operation. The measured soil content at a particular site shall take precedence over any mapped soil types, and whenever soils have been tested at a particular site, the test results should be relied on rather than the map in Appendix F of these rules.

402.6 Should any primary control measure(s) prove ineffective, the owner and/or operator shall immediately implement the contingency control measure(s). If the identified contingency control measure is effective to comply with all of the requirements of this rule, the owner and/or operator need not revise the Dust Control Plan.

403 DUST CONTROL PLAN REVISIONS:

403.1 If Required by the Control Officer:

- a. If the Control Officer determines that an approved Dust Control Plan has been followed, yet fugitive dust emissions from any dust-generating operation still exceed the standards of this rule, then the Control Officer shall issue a written notice to the owner and/or operator of the dust-generating operation explaining such determination.
- b. The owner and/or operator of a dust-generating operation shall make written revisions to the Dust Control Plan and shall submit such revised Dust Control Plan to the Control Officer within three working days of receipt of the Control Officer's written notice, unless such time period is extended by the Control Officer, upon request, for good cause. During the time that such owner and/or

operator is preparing revisions to the approved Dust Control Plan, such owner and/or operator must still comply with all requirements of this rule.

403.2 If Requested by the Permittee:

- a. If the acreage of a project changes, the owner and/or operator shall request a Dust Control Plan revision. Such Dust Control Plan revision shall be filed in the manner and form prescribed by the Control Officer.
- b. If the permit holder changes, the owner and/or operator shall request a Dust Control Plan revision. Such Dust Control Plan revision shall be filed in the manner and form prescribed by the Control Officer.
- c. If the name(s), address(es), or phone numbers of person(s) responsible for the submittal and implementation of the Dust Control Plan and responsible for the dust-generating operation change, the owner and/or operator shall request a Dust Control Plan revision. Such Dust Control Plan revision shall be filed in the manner and form prescribed by the Control Officer.
- d. If the activities related to the purposes for which the Dust Control permit was obtained change, the owner and/or operator shall request a Dust Control Plan revision. Such Dust Control Plan revision shall be filed in the manner and form prescribed by the Control Officer.

403.3 If Rule 310 is Revised:

- a. If any changes to a Dust Control Plan are necessary as a result of the most recent revisions of this rule, such changes to the Dust Control Plan shall not be required until the associated Dust Control permit is required to be renewed.
- b. If any changes to a Dust Control Plan associated with a Title V permit or with a Non-Title V permit are necessary as a result of the most recent revisions of this rule, then the owner and/or operator shall submit a revised Dust Control Plan to the Control Officer, according to the minor permit revision procedures described in Rule 210 or in Rule 220 of these rules respectively, no later than six months after the effective date of the most recent revisions to this rule.

404 DUST CONTROL BLOCK PERMIT REQUIREMENTS:

- 404.1** A Dust Control Block Permit application may be submitted to the Control Officer, if one or more of the activities listed in this section of this rule are conducted and if such activities occur at more than one site (i.e., projects that involve multiple small areas scattered throughout Maricopa County including, but not limited to, fiber optic cable installation and natural gas line extension). New construction shall obtain a separate Dust Control permit.

- a. Routine operation (i.e., municipalities, governmental agencies, and utilities that are responsible for the repeat maintenance of infrastructure including, but not limited to, weed control around a prison, canal bank and road grading, and road shoulder grading).
- b. Maintenance (i.e., municipalities, governmental agencies, and utilities that are responsible for the repeat maintenance of infrastructure including, but not limited to, weed control around a prison, canal bank and road grading, and road shoulder grading).
- c. Expansion or extension of utilities, paved roads, unpaved roads, road shoulders, alleys, and public rights-of-way at non-contiguous sites by municipalities, governmental agencies, and utilities.

404.2 When completing and submitting a Dust Control Block Permit application, the owner and/or operator shall comply with the following requirements:

- a. A Dust Control Plan that meets the criteria described in Section 402 of this rule and applies to all sites shall be submitted to the Control Officer with the Dust Control Block Permit application.
- b. A description or map of the owner's and/or operator's service areas and a list of all sites that are 0.10 acre (4,356 square feet) or greater, including the location and size of each site, shall be submitted to the Control Officer with the Dust Control Block Permit application.
- c. For any project that is 0.10 acre (4,356 square feet) or greater and not listed in the Dust Control Block Permit application, the applicant shall notify the Control Officer in writing at least three working days prior to commencing the dust-generating operation. The notice shall include the site location, size, type of activity, and start date.

404.3 The Dust Control Block Permit will cover crews that work for the municipalities, governmental agencies, and utilities, including subcontractors. However, municipalities, governmental agencies, and utilities shall retain overall authority for dust control on the project.

405 APPROVAL OR DENIAL OF PERMIT APPLICATIONS FOR DUST-GENERATING OPERATIONS: The Control Officer shall take final action on a Dust Control permit application, a Dust Control permit revision, or a Dust Control Block Permit within 14 calendar days of the filing of the complete application. The Control Officer shall notify the applicant in writing of his approval or denial.

406 TERMS FOR PERMITS FOR DUST-GENERATING OPERATIONS: A Dust Control permit issued according to this rule shall be issued for a period of one year from the date of issuance. Should the project last longer than one year from the date the permit

was issued, the permittee shall re-apply for a Dust Control Permit at least 14 calendar days prior to the expiration date of the original permit. For the purpose of this section, a permit is considered expired, if a permit renewal is not applied for at least 14 calendar days prior to the expiration date of the original permit.

407 DEFACING, ALTERING, FORGING, COUNTERFEITING, OR FALSIFYING PERMITS FOR DUST-GENERATING OPERATIONS: A person shall not willfully deface, alter, forge, counterfeit, or falsify any Dust Control permit issued under the provisions of this rule.

408 FEES FOR PERMITS FOR DUST-GENERATING OPERATIONS: No Dust Control permit is valid until the applicable Dust Control permit fee has been received and until the Dust Control permit is issued by the Control Officer.

409 POSTING OF PERMITS FOR DUST-GENERATING OPERATIONS: A Dust Control permit and a Dust Control Plan, as approved by the Control Officer, shall be posted in a conspicuous location at the work site, within on-site equipment, or in an on-site vehicle, or shall otherwise be kept available on-site at all times.

410 COMPLIANCE SCHEDULE: The newly amended provisions of this rule become effective upon adoption of this rule. An owner and/or operator of a dust-generating operation subject to this rule shall meet all applicable provisions of this rule upon adoption of the newly amended provisions of this rule and according to the following schedule:

410.1 Basic Dust Control Training Class: No later than December 31, 2008, a site superintendent or other designated on-site representative of the permit holder and water truck and water pull drivers for each site shall have successfully completed the Basic Dust Control Training Class, as described in Section 309.1 of this rule.

410.2 Dust Control Coordinator: No later than June 30, 2008, any site and/or any contiguous site under common control of five acres or more of disturbed surface area subject to a permit shall, at all times during primary dust-generating operations related to the purposes for which the Dust Control permit was obtained, have on-site at least one individual designated by the permit holder as a Dust Control Coordinator, as described in Section 310 of this rule.

SECTION 500 – MONITORING AND RECORDS

501 COMPLIANCE DETERMINATION: To determine compliance with the visible emissions requirements in Section 303 of this rule and with the stabilization requirements in Section 304 of this rule, the following test methods shall be followed:

501.1 Opacity Observations:

- a. **Dust-Generating Operations:** Opacity observations of dust-generating operations shall be conducted in accordance with Appendix C, Section 3 (Visual Opacity Determination of Emissions from Dust-Generating Operations) of these rules.
- b. **Unpaved Parking Lot:** Opacity observations of any unpaved parking lot shall be conducted in accordance with Appendix C, Section 2.1 (Test Methods for Stabilization for Unpaved Roads and Unpaved Parking Lots) of these rules.
- c. **Unpaved Haul/Access Road:** Opacity observations of any unpaved haul/access road (whether at a work site that is under construction or at a work site that is temporarily or permanently inactive) shall be conducted in accordance with Appendix C, Section 2.1 (Test Methods for Stabilization for Unpaved Roads and Unpaved Parking Lots) of these rules.
- d. **Visible Emissions Beyond the Property Line:** Opacity observations of any visible emissions beyond the property line shall be conducted in accordance with EPA Reference Method 22.

501.2 Stabilization Observations:

- a. **Unpaved Parking Lot:** Stabilization observations for unpaved parking lots shall be conducted in accordance with Appendix C, Section 2.1 (Test Methods for Stabilization for Unpaved Roads and Unpaved Parking Lots) of these rules. When more than one test method is permitted for a determination, an exceedance of the limits established in this rule determined by any of the applicable test methods shall constitute a violation of this rule.
- b. **Unpaved Haul/Access Road:** Stabilization observations for unpaved haul/access roads (whether at a work site that is under construction or at a work site that is temporarily or permanently inactive) shall be conducted in accordance with Appendix C, Section 2.1 (Test Methods for Stabilization for Unpaved Roads and Unpaved Parking Lots) of these rules. When more than one test method is permitted for a determination, an exceedance of the limits established in this rule determined by any of the applicable test methods shall constitute a violation of this rule.
- c. **Disturbed Surface Area:** Stabilization observations for any disturbed surface area on which no activity is occurring (whether at a work site that is under construction, at a work site that is temporarily or permanently inactive) shall be conducted in accordance with at least one of the techniques described in Section 501.2(c)(1) through Section 501.2(c)(7) below, as applicable. The owner and/or operator of such inactive disturbed surface area shall be considered in violation of this rule if such inactive disturbed surface area is not maintained in a manner that meets at least one of the standards described in Section 304.3 of this rule, as applicable.

- (1) Appendix C, Section 2.3 (Test Methods for Stabilization: Soil Crust Determination: the Drop Ball Test) of these rules for a soil crust; or
- (2) Appendix C, Section 2.4 (Test Methods for Stabilization: Determination of Threshold Friction Velocity [TFV]: Sieving Field Procedure) of these rules for threshold friction velocity (TFV) corrected for non-erodible elements of 100 cm/second or higher; or
- (3) Appendix C, Section 2.5 (Test Methods for Stabilization: Determination of Flat Vegetative Cover) of these rules for flat vegetation cover (i.e., attached [rooted] vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind) that is equal to at least 50%; or
- (4) Appendix C, Section 2.6 (Test Methods for Stabilization: Determination of Standing Vegetative Cover) of these rules for standing vegetation cover (i.e., vegetation that is attached [rooted] with a predominant vertical orientation) that is equal to or greater than 30%; or
- (5) Appendix C, Section 2.6 (Test Methods for Stabilization: Determination of Standing Vegetative Cover) of these rules for standing vegetation cover (i.e., vegetation that is attached [rooted] with a predominant vertical orientation) that is equal to or greater than 10% and where the threshold friction velocity is equal to or greater than 43 cm/second when corrected for non-erodible elements; or
- (6) Appendix C, Section 2.7 (Test Methods for Stabilization: Rock Test Method) of these rules for a percent cover that is equal to or greater than 10%, for non-erodible elements; or
- (7) An alternative and equivalent test method approved in writing by the Control Officer and the Administrator.

502 RECORDKEEPING:

502.1 Any person who conducts dust-generating operations that require a Dust Control Plan shall keep a written record of self-inspection on each day dust-generating operations are conducted. Self-inspection records shall include daily inspections for crusted or damp soil, trackout conditions and clean-up measures, daily water usage for dust control measures, and dust suppressant application. Such written record shall also include the following information:

- a. Method, frequency, and intensity of application or implementation of the control measures;

- b. Method, frequency, and amount of water application to the site;
- c. Street sweeping frequency;
- d. Types of surface treatments applied to and maintenance of trackout control devices, gravel pads, fences, wind barriers, and tarps;
- e. Types and results of test methods conducted;
- f. If contingency control measures are implemented, actual application or implementation of contingency control measures and why contingency control measures were implemented;
- g. List of subcontractors' names and registration numbers updated when changes are made; and
- h. Names of employee(s) who successfully completed dust control training class(es) required by Section 309 of this rule, date of the class(es) that such employee(s) successfully completed, and name of the agency/representative who conducted such class(es).

502.2 Any person who conducts dust-generating operations that do not require a Dust Control Plan shall compile and retain records (including records on any street sweeping, water applications, and maintenance of trackout control devices, gravel pads, fences, wind barriers, and tarps) that provide evidence of control measure application, by indicating the type of treatment or control measure, extent of coverage, and date applied.

502.3 Upon verbal or written request by the Control Officer, the log or the records and supporting documentation shall be provided as soon as possible but no later than 48 hours, excluding weekends. If the Control Officer is at the site where requested records are kept, records shall be provided without delay.

503 RECORDS RETENTION: Any person who conducts dust-generating operations that require a Dust Control Plan shall retain copies of approved Dust Control Plans, control measures implementation records, and all supporting documentation for at least six months following the termination of the dust-generating operation and for at least two years from the date such records were initiated. If a person has obtained a Title V Permit and is subject to the requirements of this rule, then such person shall retain records required by this rule for at least five years from the date such records are established.

504 TEST METHODS INCORPORATED BY REFERENCE: The test methods listed in this section are incorporated by reference. These incorporations by reference include no future editions or amendments. Copies of the test methods listed in this section are available for review at the Maricopa County Air Quality Department, 1001 North Central Avenue, Phoenix, AZ, 85004.

- 504.1** ASTM Method C136-06 (“Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates”), 2006 edition.
- 504.2** ASTM Method D2216-05 (“Standard Test Method for Laboratory Determination of Water [Moisture] Content of Soil and Rock by Mass”), 2005 edition.
- 504.3** ASTM Method D1557-02e1 (“Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³))”), 2002 edition.
- 504.4** EPA Reference Method 22 (“Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares”), 2000 edition.

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 311

PARTICULATE MATTER FROM PROCESS INDUSTRIES

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 311
PARTICULATE MATTER FROM PROCESS INDUSTRIES**

SECTION 100 - GENERAL

- 101 PURPOSE:** To limit the discharge of particulate matter into the atmosphere by establishing emission rates based on process weight.
- 102 APPLICABILITY:** This rule shall apply to any affected operation which is not subject to the provisions of Rule 316 of these Regulations.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply:

- 201 AFFECTED OPERATION -** An operation that emits particulate matter into the ambient air as a result of processing materials.
- 202 APPROVED EMISSION CONTROL SYSTEM -** A system for reducing particulate matter emissions, consisting of collection and/or control devices which are approved in writing by the Control Officer and are designed and operated in accordance with good engineering practice.
- 203 PARTICULATE MATTER -** Any material, except uncombined water, which has a nominal aerodynamic diameter smaller than 100 microns (micrometers), and which exists in a finely divided form as a liquid or solid at actual conditions.
- 204 PARTICULATE MATTER EMISSIONS -** Any and all finely divided solid or liquid materials other than uncombined water, emitted to the ambient air as measured by applicable state and federal test methods.
- 205 PROCESS WEIGHT -** The total weight of all materials introduced into an operation, excluding liquids and gases used solely as fuels, air which is not consumed as a reactant, and combustion air.

206 PROCESS WEIGHT RATE - A rate established as follows:

206.1 For continuous or long-run steady-state operations, the total process weight for the entire period of continuous operation or for a typical portion thereof, divided by the number of hours of such period or portion thereof.

206.2 For cyclical or batch operations, the total process weight for a period which covers a complete operation or an integral number of cycles, divided by the hours of actual process operation during such period.

207 UNCOMBINED WATER - Condensed water containing no more than analytical trace amounts of other chemical elements or compounds.

SECTION 300 - STANDARDS

301 LIMITATIONS - PROCESS INDUSTRIES: No person shall discharge or cause or allow the discharge of particulate matter emissions into the ambient air from any affected operation in excess of the allowable hourly emission rate determined by the following equations:

301.1 Process Weight Rates Less Than or Equal to 60,000 Pounds Per Hour:
Determination of the allowable hourly emission rates (E) for process weight rates up to 60,000 lbs/hr shall be accomplished by use of the equation:

$$E = 3.59 P^{0.62} \text{ (P = less than or equal to 30 tons/hr)}$$

where:

E = Emissions in pounds per hour, and

P = Process weight rate in tons per hour.

301.2 Process Weight Rates Greater Than 60,000 Pounds Per Hour:
Determination of the allowable hourly emission rates (E) for process weight rates in excess of 60,000 lbs/hr shall be accomplished by the use of the equation:

$$E = 17.31 P^{0.16} \text{ (P = greater than 30 tons/hr)}$$

where "E" and "P" have the same meanings as in Section 301.1 of this rule.

302 APPLICABILITY OF EMISSION LIMITS FOR COMBINED EMISSIONS FROM SIMILAR OPERATIONS: The total process weight from all similar operations at a facility, plant or premises shall be used for determining the maximum allowable emissions of particulate matter.

303 LIMITATIONS - PORTLAND CEMENT PLANTS:

303.1 No person owning or operating a portland cement plant with a process weight rate in excess of 250,000 lbs/hr shall discharge or cause or allow the discharge of particulate matter emissions from any kiln into the ambient air which is in excess of 0.3 lbs/ton (0.15 kg per metric ton) of feed to the kiln, maximum two-hour average, or greater than ten percent opacity.

303.2 No person owning or operating a portland cement plant shall discharge or cause or allow the discharge of particulate matter emissions from the clinker cooler into the ambient air in excess of 0.1 lb/ton (0.05 kg per metric ton) of feed to the kiln, maximum two hour average, or greater than ten percent opacity.

303.3 No person owning or operating a portland cement plant shall discharge or cause or allow the discharge into the ambient air of particulate matter emissions from any affected facility, other than the kiln or clinker cooler, which is greater than ten percent opacity.

304 LIMITATIONS - FUEL BURNING EQUIPMENT: No person shall discharge, cause or allow the discharge of particulate matter emissions, caused by combustion of fuel, from any fuel burning operation in excess of amounts calculated by the equations presented in Sections 304.1 and 304.2 of this rule.

304.1 For equipment having a heat input rating of 4200 million btu/hr or less, the maximum allowable emissions (E) shall be determined by the following equation:

$$E = 1.02 Q^{0.769}$$

where:

E = The maximum allowable particulate emission rate in pounds-mass per hour, and

Q = The heat output in million BTU per hour.

304.2 For equipment having a heat input rating greater than 4200 million BTU/hr, the maximum allowable emissions shall be determined by the following equation:

$$E = 17.0 Q^{0.432}$$

where "E" and "Q" have the same meanings as in Section 304.1 of this rule.

305 APPROVED EMISSION CONTROL SYSTEM REQUIRED: For affected operations which may exceed the applicable standards set forth in Sections 301 through 304 of this rule, an owner or operator may comply by installing and operating an approved emission control system.

306 OPERATION AND MAINTENANCE (O&M) PLAN REQUIRED: No person required to use an approved emission control system to reduce emissions as specified in the conditions of a valid permit in accordance with this rule shall do so without complying with an operation and maintenance plan that has been approved by the Control Officer. This plan shall specify key system operating parameters such as temperatures, transfer rates, pressures and/or flow rates necessary to determine compliance with this rule and describe in detail procedures to maintain the approved emission control system. The Control Officer's written approval of this plan shall be required for compliance with this rule to be achieved.

307 EXEMPTIONS: The provisions of Section 301 of this rule shall not apply to incinerators or fuel burning facilities. The provisions of Section 301 of this rule shall not apply to portland cement plants having process weights in excess of 250,000 lb/hr.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE - OPERATION AND MAINTENANCE (O&M) PLAN: Any person employing an approved emission control system on the effective date of this rule shall by December 1, 1993, file an O&M Plan with the Control Officer in accordance with Section 501 of this rule.

SECTION 500 - MONITORING AND RECORDS

501 PROVIDING AND MAINTAINING MONITORING DEVICES: No person required to use an approved emission control system to control particulate emissions pursuant to this rule shall do so without first providing, properly installing, operating and maintaining in calibration and in good working order devices for indicating temperatures, pressures, transfer rates, rates of flow, or other operating conditions

necessary to determine if air pollution control equipment is functioning properly and is properly maintained as described in an approved O&M Plan.

502 RECORDKEEPING AND REPORTING: Any person subject to this rule shall comply with the following requirements. Any records and data required by this section shall be kept on site at all times in a consistent and complete manner and be made available without delay to the Control Officer or his designee upon request.

502.1 De Minimis Limitation for Affected Operations Requiring Records: No person responsible for the operation of any particulate-emitting affected operation which processes more than 50 pounds of material daily shall conduct such operations unless detailed daily records are maintained.

502.2 Minimum Recordkeeping Required: These records shall be updated each day of operation and include at a minimum the following information: a record of the total weight of all process materials including raw materials, additives, fuels, etc., which are put into a process flow at the beginning of each batch process shall be kept on site. This shall include all materials which participate in the process and are changed in mass, form, state or in other characteristics by means of their interaction in the given process. The duration of each separate batch process shall also be recorded.

a. Batch process records: Maintain a record of the total weight of all process materials including raw materials, additives, and fuels which are put into a process flow at the beginning of each batch process shall be kept. This shall include all materials which participate in the process and are changed in mass, form, state or in other characteristics by means of their interaction in the given process. The duration of each separate batch process shall also be recorded.

b. Continuous or semi-continuous process records: Maintain a daily record of the weight of all process material entering into each process including raw materials, additives, fuels, the start time and the duration of each process run. In addition to the foregoing, records shall be kept for processes which run continuously for more than 24 hours. Such records shall include the total weight of any material entering into the process over the entire duration of the process run from start up to shut down and the total elapsed time of operation.

502.3 Operation and Maintenance: Maintain a continuous record of the periods of time an approved emission control system is used to comply with this rule and maintain daily records of the Operation and Maintenance Plan's key system operating parameters. The records shall account for any periods of

production when the control system was not operating and maintain records of all maintenance performed according to the O&M Plan.

- 503 RECORD RETENTION:** Copies of reports, logs and supporting documentation required by the Control Officer shall be retained at least three years. Records and information required by this rule shall also be retained for at least three years.
- 504 TEST METHODS:** The reference methods in 40 CFR 60, Appendix A, shall be used to determine compliance with the pertinent standards prescribed in this section. When more than one test method is permitted for a determination, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation of this rule.
- 504.1** Sample velocity and velocity traverse and selection of sample sites and sample traverses shall be determined according to EPA Reference Method 1.
- 504.2** Velocity and volumetric flow rate shall be determined according to EPA Reference Method 2.
- 504.3** Gas analysis shall be determined according to EPA Reference Method 3.
- 504.4** Stack gas moisture shall be determined according to EPA Reference Method 4.
- 504.5** Stack effluent concentration of particulate matter and associated moisture content shall be determined according to EPA Reference Method 5.
- 504.6** Visible emissions shall be determined according to EPA Reference Method 9.

Last Formatted - Fall 1997

1-4-90

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 312
ABRASIVE BLASTING**

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312.2

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 312
ABRASIVE BLASTING**

SECTION 100 - GENERAL

101 PURPOSE: To limit particulate emissions from abrasive blasting operations.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply:

201 ABRASIVE BLASTING - The operation of cleaning or preparing a surface by forcibly propelling a stream of abrasive material against the surface.

202 ABRASIVE BLASTING EQUIPMENT - Any equipment utilized in abrasive blasting operations.

203 CONFINED BLASTING - Any abrasive blasting conducted in an enclosure which significantly reduces air contaminants from being emitted to the ambient atmosphere, including but not limited to shrouds, tanks, buildings and structures.

204 HYDROBLASTING - Any abrasive blasting using high pressure liquid as the propelling force.

205 MULTIPLE NOZZLES - A group of two or more nozzles being used for abrasive cleaning of the same surface in such close proximity that their separate plumes are indistinguishable.

206 WET ABRASIVE BLASTING - Any abrasive blasting using compressed air as the propelling force and sufficient water to minimize the plume.

SECTION 300 - STANDARDS

301 LIMITATIONS - 20 PERCENT OPACITY: No person shall discharge into the atmosphere from any abrasive blasting any air contaminant for a period or periods aggregating more than three minutes in any one-hour period which is a shade or density darker than 20 percent opacity.

302 CONTROLS REQUIRED: Any abrasive blasting operation shall use at least one of the following control measures:

302.1 Confined blasting.

302.2 Wet abrasive blasting.

302.3 Hydroblasting.

302.4 A control measure that is determined by the Control Officer to be equally effective to control particulate emissions.

SECTION 500 - MONITORING AND RECORDS

501 VISIBLE EMISSION EVALUATION TECHNIQUES: Visible emission evaluation of abrasive blasting operations shall be conducted in accordance with the following provisions:

501.1 Emissions from unconfined blasting shall be read at the densest point of the emission after a major portion of the spent abrasives has fallen out, at a point not less than five feet nor more than 25 feet from the impact surface from any single abrasive blasting nozzle.

501.2 Emissions from unconfined blasting employing multiple nozzles shall be judged as single source unless it can be demonstrated by the owner or operator that each nozzle, evaluated separately, meets the emission standards of this rule.

501.3 Emissions from confined blasting shall be read at the densest point after the air contaminant leaves the enclosure.

REGULATION III – CONTROL OF AIR CONTAMINANTS

RULE 313 INCINERATORS, BURN-OFF OVENS, AND CREMATORIES

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Revised 07/13/88
Revised 04/07/93
Revised 09/22/04
Revised 05/09/12

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 313
INCINERATORS, BURN-OFF OVENS AND CREMATORIES**

SECTION 100 – GENERAL

- 101 PURPOSE:** To limit particulate emissions from incinerators, burn-off ovens and crematories.
- 102 APPLICABILITY:** This rule applies to the following types of equipment and activities:
- 102.1** All incinerators except those subject to:
- a. Resource Conservation and Recovery Act (RCRA) Subtitle C; or
 - b. Maricopa County Rule 317 (Hospital/Medical/Infectious Waste Incinerators) and Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction Is Commenced After June 20, 1996 (40 CFR Part 60, Subpart Ec); or
 - c. Standards of Performance for Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001(40 CFR Part 60, Subpart CCCC); or
 - d. Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units that Commenced Construction On or Before November 30, 1999 (40 CFR Part 60, Subpart DDDD).
- 102.2** Burn-off ovens used in metal salvage operations or used to remove nonmetallic coatings from metal parts by the application of heat and meet one of the following conditions:
- a. Charge combustion capacity of greater than 25 lbs per hour; or
 - b. Internal oven volume greater than one (1) cubic yard; or
 - c. Fuel burning capacity of primary chamber greater than 200,000 Btu per hour.
- 102.3** Crematories.
- 103 EXEMPTIONS:** The following types of equipment and activities are exempt from this rule:

- 103.1 Laboratory ovens;
- 103.2 Environmental test chambers;
- 103.3 Ovens used in research facilities;
- 103.4 Flares;
- 103.5 Curing or drying ovens that are operated at temperatures lower than 600 °F;
- 103.6 Electric induction furnaces; and
- 103.7 Burning-off of pre-cleaned items consisting entirely of metal and containing no debris visible to the naked eye. Pre-cleaning shall be done by flushing with water, solvent and/or mechanical means.

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definition) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

- 201 **AFTERBURNER** – A heating device associated with an incinerator, burn-off oven or crematory that is designed to provide excess air and heat for complete combustion of the gases in the primary chamber so as to control particulate emissions.
- 202 **BURN-OFF OVEN** – A heating device intended to remove materials such as oils, greases, paints, coatings, rubber, lacquers, and insulation from other materials or parts by combustion or charring.
- 203 **COMBUSTIBLE REFUSE** – Any solid or liquid combustible waste material containing carbon in a free or combined state.
- 204 **CONTINUOUS OPACITY MONITORING SYSTEM (COMS)** – The total equipment necessary for the determination of opacity of emissions which provides a permanent, uninterrupted record of opacity readings.
- 205 **CREMATION** – The process of reducing human or animal remains to bone fragments and ashes in a controlled retort or furnace using heat and/or flame. The reduction takes place through heat and evaporation. Cremation shall also include the processing and pulverization of the bone fragments.
- 206 **CREMATORY** – A retort used for the cremation of remains (human or animal), body parts, and associated wrappings. This term may also be used to refer to an establishment wherein these remains are cremated. A crematory may be considered existing or new, dependent upon the date it was constructed. If it was constructed, modified, or commenced operation, including the contractual obligation to undertake and complete an order for a crematory, prior to September 22, 2004, then it is an existing crematory.

- 207 ELECTRIC INDUCTION FURNACE** – A furnace or oven that is used to melt metals by use of electricity as the source of power or an alternating current electric furnace in which primary conductor is coiled and generates by electromagnetic induction a secondary current that develops within the metal charge.
- 208 FLUE** – A duct or passage, such as a stack or chimney, for air contaminants.
- 209 HOSPITAL WASTE** – Discards generated at a hospital or clinic, except unused items returned to the manufacturer. The definition of hospital waste does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.
- 210 INCINERATION** – The process of combustion or pyrolysis involving the chemical reaction of combustible waste materials with air in which the primary purpose is the destruction and reduction in size and mass of the combustible material.
- 211 INCINERATOR** – Any equipment used for the purpose of reducing the volume and mass by removing combustible matter by direct combustion or the combustion of waste gases from pyrolysis or gasification. Incinerator designs include single chamber and two-chamber. A two-chamber incinerator consists of two or more refractory lined combustion chambers in series, physically separated by refractory walls, interconnected by gas passage ports or ducts designed for maximum combustion of the material to be burned. An “incinerator” does not include devices such as open or screened barrels, drums, or process boilers.
- 211.1 Primary Chamber** – The initial compartment of an incinerator wherein the majority of waste volume reduction or heat treatment occurs by combustion. Primary chambers are normally operated at lower temperatures than are secondary chambers or afterburners.
- 211.2 Secondary Chamber** – The compartment of an incinerator that operates at excess air conditions wherein destruction of gas-phase combustion products occurs. Passage ports, ducts, flues, chimneys, or stacks with burners shall not be considered controlled secondary chambers unless (1) the combustion zone exhibits design measures for the retention of the gas stream in the chamber, turbulence or mixing, and (2) there is an availability of excess air as determined by engineering analysis.
- 212 MEDICAL WASTE** – Any non-gaseous waste, including infectious wastes, which is generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in production or testing of biological agents and substances. Medical waste does not include any wastes identified under subtitle C of the Resource Conservation and Recovery Act (RCRA) as hazardous or as household waste, but includes those pharmaceuticals which are not identified as hazardous by subtitle C of RCRA. Medical waste does not include human or animal remains, caskets, containers, clothing or wrappings from crematories. An expanded definition of medical waste is found in 40 CFR 60, Subpart Ec. The definition of “medical waste” includes, but is not limited to:
- 212.1** Cultures and stocks of infectious agents and human pathological waste;
- 212.2** Human blood and blood products, ;
- 212.3** Sharps, needles and broken glass that were in contact with infectious wastes;

212.4 Animal wastes exposed to infectious wastes,;

212.5 Isolation wastes; and

212.6 Unused sharps, needles and syringes.

213 **METAL SALVAGE OPERATIONS** – Any source operation in which combustion or pyrolysis is carried on for the principal purpose, or with the principal result, of recovering metals which are introduced into the operation as essentially pure metals, or alloys thereof, by oxidation of physically intermingled combustible material. Operations, in which there is a complete fusion of all such metals such as in an electric induction furnace, are not considered “metal salvage operations” for the purpose of this rule.

214 **NIGHTTIME COMBUSTION** – Combustion that occurs after sundown and before the following sunrise.

215 **PARTS RECLAMATION UNIT** – A burn-off oven that combusts only paints, lacquers, and varnishes off of items (e.g., tools and equipment) so that these items can be reconditioned and reused. A burn-off oven used to remove plastic, insulation or rubber from items shall not be considered a parts reclamation unit for the purpose of this rule.

216 **PATHOLOGICAL WASTE** – Waste material that consists of only human or animal remains, anatomical parts and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

217 **PYROLYSIS/COMBUSTION UNIT** – A combustion unit that produces gases, liquids, or solids through the heating of waste, and the gases, liquids, or solids produced are combusted and emissions vented to the atmosphere.

218 **RESIDENCE TIME** – The average time that gases spend in a defined space, also known as “bulk gas average residence time”.

SECTION 300 – STANDARDS

301 **CONTROLS REQUIRED:** An owner or operator shall comply with the following:

301.1 **Incinerators:** Combustion of all types of combustible refuse in an incinerator shall be performed in a multiple-chamber incinerator that operates at least at a minimum temperature of 1600 °F in the secondary chamber or afterburner, with a residence time of at least one (1) second in the secondary chamber or afterburner during the period of combustion in order to destroy the combustion products.

301.2 **Burn-Off Ovens:** Metal salvage operations or removal of materials utilizing a burn-off oven shall employ an oven with at least two chambers. The secondary compartment or afterburner shall operate at a minimum temperature of at least 1400 °F with a residence time of at least one-half ($\frac{1}{2}$) second during the period of combustion in order to destruct the combustion products.

- 301.3 Crematories:** A crematory shall consist of an incinerator comprised of at least two chambers and that complies with the following conditions:
- a. For an existing crematory the burner in the primary chamber shall not be ignited until the secondary chamber combustion zone temperature is equal to or greater than 800 °F. The secondary compartment or afterburner shall operate at a minimum temperature of at least 1400 °F with a residence time of at least one (1) second during the period of combustion in order to destruct the combustion products.
 - b. For a new crematory, the burner in the primary chamber shall not be ignited until the secondary chamber combustion zone temperature is equal to or greater than 1000°F. The secondary compartment or afterburner shall operate at a minimum temperature of at least 1600 °F with a residence time of at least one (1) second during the period of combustion in order to destruct the combustion products.
 - c. **Alternate Operating Conditions:** If the manufacturer's optimum design specifications for the minimum temperature or residence time of a secondary chamber or afterburner at existing crematories are different from the temperatures or residence times set forth in Section 301.3 (a) of this rule, the manufacturer's specifications may be used instead, providing that the owner or operator demonstrates compliance with the test methods listed in Section 507 of this rule.
 - d. **Additional Operating Conditions for Cremating Large Bodies:** Alternate operating temperatures and special procedures may be required for cremation of large bodies (over 300 lbs.) that are different from the temperatures or residence times in the afterburner set forth in Section 301.3 of this rule. These alternate times and temperatures may be followed when cremating large bodies, provided that the owner or operator demonstrates compliance with the test methods listed in Section 507 of this rule.

302 EMISSIONS STANDARD – OPACITY: An owner or operator shall not cause, allow, or permit emissions into the atmosphere from any incinerator, burn-off oven, or crematory, for an aggregate of more than 30 seconds in any 60 minutes, for any air contaminant that exceeds 20 percent opacity (Section 507.3 of this rule).

303 EMISSIONS STANDARD – PARTICULATES: An owner or operator shall not cause, allow, or permit particulate matter emissions into the atmosphere from any incinerator, burn-off oven, or crematory, which exceed 0.080 grain per cubic foot of dry flue gas at standard conditions adjusted to 7% oxygen (O₂) in the exhaust gases and calculated as if no auxiliary fuel had been used.

304 NIGHTTIME COMBUSTION: An owner or operator who chooses to conduct combustion operations shall comply with the following conditions:

304.1 Incinerator, Crematory, or Burn-Off Oven Other than a Parts Reclamation Unit: A Continuous Opacity Monitoring System (COMS) shall be operated at all times during nighttime combustion operations and shall comply with the following conditions:

- a. The COMS shall be calibrated and maintained in accordance with EPA Performance Specification # 1, described in Section 507.2 of this rule and shall be calibrated at least once per day. The COMS shall be located downstream from all particulate control equipment, where condensed water is not present, free of interference from ambient light (applicable only if transmissometer is responsive to ambient light) and accessible in order to permit routine maintenance in accordance with the test method described in Section 507.2 of this rule.
- b. A properly trained COMS operator shall be present at all times during nighttime combustion operations. The operator shall be trained in the proper operation and maintenance of the COMS as well as the shutdown procedures of the incinerator, burn-off oven, or crematory. Therefore if the COMS registers opacity readings that are higher than the opacity limitations in Section 302 of this rule, then the operator has the authority and capability to shut down the operation.

304.2 Parts Reclamation Unit: An owner or operator of a parts reclamation unit who chooses to conduct nighttime combustion operations without the installation and operation of a COMS shall:

- a. Not cause, allow or permit any visible emissions during combustion during the nighttime; and
- b. Conduct visible emissions observations in compliance with the test method described in Section 507.4 of this rule at least once per hour during each nighttime combustion cycle; and
- c. Operate and maintain the parts reclamation unit in accordance with the manufacturer's operations and maintenance manual or other similar written materials supplied by the manufacturer or distributor of the unit to ensure the unit remains in proper operating condition.
- d. Operate exclusively with parts reclamation units with an inside stack diameter less than 10 inches.

305 OPERATION AND MAINTENANCE (O&M) PLAN REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND APPROVED EMISSION CONTROL SYSTEM (ECS): An owner or operator subject to this rule operating an ECS shall provide, properly install and maintain in calibration, in good working order and in operation the air pollution control equipment required by this rule. This includes the following:

- 305.1** Provide and maintain devices that indicate temperatures, pressures, rates of flow, or other operating conditions necessary to determine if the air pollution control equipment is functioning properly and is properly maintained.
- 305.2** Keep records according to Section 501 of this rule that demonstrate the air pollution control equipment meets the control standards required in Section 300 of this rule.
- 305.3** Submit an Operation and Maintenance (O&M) Plan if the air pollution control equipment consists of additional equipment other than an afterburner, such as a baghouse or

venturi scrubber according to the following O&M Plan requirements for an Emission Control System (ECS):

- a. An owner or operator subject to this rule shall provide and maintain readily available on-site at all times the O&M Plan(s) for any ECS and any ECS monitoring devices that are used under this rule or an air pollution control permit.
- b. An owner or operator subject to this rule shall submit to the Control Officer for review the O&M Plan(s) for any ECS including an ECS monitoring device that is required by this rule or required under an air pollution control permit.
- c. An owner or operator subject to this rule operating an ECS shall install, maintain and accurately calibrate monitoring devices listed in the O&M Plan(s) including, but not limited to, monitoring devices that measure pressure differentials and other operating conditions necessary to determine if control devices are functioning properly.
- d. An owner or operator who is required to have O&M Plan(s) for any ECS including any ECS monitoring devices must fully comply with all elements of the O&M Plan(s) including, but not limited to, every action, schedule, and condition identified in each O&M Plan.
- e. An O&M Plan for any ECS including any ECS monitoring devices shall include all of the following information:
 - (1) ECS equipment manufacturer;
 - (2) ECS equipment model;
 - (3) ECS equipment identification number or identifier that owner or operator subject to this rule assigns to such ECS equipment when the manufacturer's equipment identification number is unknown; and
 - (4) Any other information required by Section 501 of this rule.
- f. The owner or operator subject to this rule, who receives a written notice from the Control Officer that an O&M Plan for any ECS including any ECS monitoring devices is deficient or inadequate, must make written revisions to the O&M Plan. The revised O&M Plan must be submitted to the Control Officer within five working days of receipt of the Control Officer's written notice. Such time period can be extended by the Control Officer, upon written request and for good cause. During the time that such owner or operator subject to this rule is preparing revisions to the O&M Plan, such owner or operator shall still comply with all requirement of this rule.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS (NOT APPLICABLE)

SECTION 500 – MONITORING AND RECORDS

- 501 RECORDKEEPING:** An owner or operator subject to this rule shall maintain the records listed below and shall retain these records for five years. These records shall be kept on-site in written or electronic format, in a complete and consistent manner. Written or electronic copies shall be made available to the Control Officer upon request. An owner or operator shall keep the following daily records:
- 501.1** Times of operation;
 - 501.2 Chamber temperatures:** Chamber temperatures shall include operating temperatures for the secondary chamber as well as secondary chamber temperature at the time of the ignition of the primary chamber.
 - 501.3** Weight of the materials incinerated shall be determined as follows:
 - a. Incinerators:** Total weight charged.
 - b. Crematories:**
 - (1) Human Crematories:** Account for the numbers of bodies cremated; or
 - (2) Animal Crematories:** Account for either the number and type of remains charged or the weight of the animal(s) charged; or
 - (3) Large Bodies:** If a human or animal crematory combusts a large body (over 300 lbs.), the approximate weight of the body and any alternative operating conditions shall be recorded.
- 502 OPACITY OBSERVATIONS:** An owner or operator shall keep records of opacity observations used to measure visible emissions from activities regulated by this rule. The records shall be compiled, maintained, and retained for each day or night that any activity capable of generating emissions is conducted. These written records shall include the following information:
- 502.1** Date, time, and location of all opacity observations; and
 - 502.2** Results of all opacity observations; and
 - 502.3** Corrective action(s) taken, if any.
- 503 NIGHTTIME COMBUSTION:** An owner or operator conducting nighttime combustion operations shall comply with the following requirements:
- 503.1 Nighttime Combustion With a COMS:**
 - a.** Maintain a continuous record of opacity readings generated by the COMS. Records shall include all times that the meter is running properly. Records shall also indicate when the instrument is inoperative or has been adjusted or repaired.
 - b.** Record the date and time identifying each period during which the COMS was inoperative, except for zero and span checks, and the nature of system repair or

adjustment shall be reported. The Control Officer may request proof of COMS performance whenever system repairs or adjustments, other than routine maintenance, have been made.

- c. Maintain a file of all data collected by the COMS and as necessary to convert monitoring data to the units of the applicable standard as described for compliance with Section 507.3 of this rule.

503.2 Nighttime Combustion Without a COMS – Parts Reclamation Unit: Maintain records of the visible emissions observations taken at night during each combustion cycle for each parts reclamation unit as required by Section 507.4 of this rule. These records shall include the following:

- a. Date, time, and location of all visible emission observations; and
- b. Results of all visible emission observations; and
- c. Corrective action(s) taken, if any.

504 PREVENTATIVE MAINTENANCE LOG: Maintain a log of equipment preventive maintenance activities performed on all equipment or ECS subject to this rule.

505 ALTERNATE OPERATING CONDITIONS: An owner or operator shall keep records of any alternate operating conditions including temperatures and residence times, as required by Sections 301.3(c) and 301.3(d) of this rule.

506 PERFORMANCE TEST RESULTS: An owner or operator shall maintain records of all exhaust stack performance tests. Such written records shall include the following information:

506.1 Date, start and end times, and location of all performance tests;

506.2 Results of all tests; and

506.3 Corrective action(s) taken, if necessary.

507 COMPLIANCE DETERMINATION – TEST METHODS: When more than one test method is permitted for determining an exceedance of the limits established in this rule, then any exceedance determined using any one of the following applicable test methods shall constitute a violation of this rule.

507.1 Determination of total particulate matter, EPA Methods 1 through 5, or the EPA equivalent methods listed in Sections 507.3 and 507.4 of this rule approved by the Control Officer, shall be used. Both carbon dioxide and oxygen measurements shall be obtained simultaneously with each Method 5 run.

507.2 Determination of visible emissions compliance shall be made by a certified emissions observer or by a continuous emission monitor which is maintained and calibrated in accordance with EPA Performance Specification #1 (40 CFR, Part 60, Appendix B). The observer shall be qualified as an expert visible emissions evaluator and so certified

by the Arizona Department of Environmental Quality or by any other agency that is acceptable to the Control Officer.

507.3 Opacity shall be determined by observations of visible emissions conducted in accordance with EPA Reference Method 9 as modified by EPA Reference Method 203 B.

507.4 The presence or absence of visible emissions shall be detected using EPA Reference Method 22.

508 TEST METHODS INCORPORATED BY REFERENCE: The EPA test methods as they exist in the Code of Federal Regulations (CFR) are incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Rules and Regulations.

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

RULE 314

OUTDOOR FIRES AND COMMERCIAL/INSTITUTIONAL SOLID FUEL BURNING

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REQUIREMENTS FOR AIR CURTAIN DESTRUCTORS

Revised 07/13/1988; Revised 12/19/2001; Revised 04/20/2005; Revised 03/12/2008; Revised 07/25/2012; and **Revised 10/23/2019**

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

RULE 314

OUTDOOR FIRES AND COMMERCIAL/INSTITUTIONAL SOLID FUEL BURNING

SECTION 100 – GENERAL

- 101 PURPOSE:** To limit the emissions of air contaminants produced from open outdoor fires and commercial/institutional solid fuel burning.
- 102 APPLICABILITY:** The provisions of this rule apply to the owner or operator of:
- 102.1** Any open outdoor fire;
 - 102.2** Any indoor fire for firefighter training;
 - 102.3** Any appliance used for the cooking, smoking, or flavoring of food that burns solid fuel and is not located at a food establishment with a valid permit to operate from the Maricopa County Environmental Services Department; and
 - 102.4** Any fireplace, woodstove, or chiminea that is located at a commercial or institutional establishment and burns solid fuel.
- 103 EXEMPTIONS:** The provisions of this rule do not apply to:
- 103.1** Equipment and processes used for agricultural flame cultivation, if the fuel used is liquefied propane gas, the resulting flame desiccates the vegetative material without continued application of the flame, and the vegetative material is not burned or combusted.
 - 103.2** Appliances, including but not limited to, grills, ovens, and smokers, that are used exclusively for the cooking, smoking, or flavoring of food, and are located at a food establishment with a valid permit to operate from the Maricopa County Environmental Services Department.
 - 103.3** Any of the following fires or devices that are subject to Ordinance P-26 of these rules:
 - a.** Any residential woodburning device;
 - b.** Any chiminea, outdoor fireplace, and other outdoor device that is located at a residence and burns solid fuel; and
 - c.** Any fire pit or similar outdoor fire that is located at a residence, burns solid fuel, and is used exclusively for recreation or ambiance, or to provide warmth for human beings.
 - 103.4** Any fire or device where the only fuel combusted is natural gas, propane, or liquefied petroleum gas and the fire or device is not used to ignite another type of fuel.

103.5 The use of consumer fireworks or display fireworks, as defined in A.R.S. § 36-1601.

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County Air Pollution Control Regulations, the definitions in this rule take precedence.

201 AGRICULTURAL OPERATIONS: Producing or harvesting crops or raising animals for the purposes of marketing for profit or providing a livelihood.

202 AIR CURTAIN DESTRUCTOR: A device designed to form a curtain of air over a firebox in which burning occurs that aids in more complete combustion through increases in turbulence and combustion time.

203 AREA A: As defined in Arizona Revised Statutes (A.R.S.) § 49-541(1), the area in Maricopa County delineated as follows:

Township 8 North, Range 2 East and Range 3 East
Township 7 North, Range 2 West through Range 5 East
Township 6 North, Range 5 West through Range 6 East
Township 5 North, Range 5 West through Range 7 East
Township 4 North, Range 5 West through Range 8 East
Township 3 North, Range 5 West through Range 8 East
Township 2 North, Range 5 West through Range 8 East
Township 1 North, Range 5 West through Range 7 East
Township 1 South, Range 5 West through Range 7 East
Township 2 South, Range 5 West through Range 7 East
Township 3 South, Range 5 West through Range 1 East
Township 4 South, Range 5 West through Range 1 East

A map of Area A is available at <https://www.maricopa.gov/2686/Planning-Area-Maps>.

204 CHARCOAL: The carbon and hydrocarbon residue that remains after water and other volatile constituents of wood have been removed by pyrolysis.

205 CHIMINEA: A device made from clay, aluminum, steel, or another non-combustible material, that is designed to burn solid fuel, and that is used outside to provide warmth or for aesthetic purposes.

206 COOKING: The application of heat to plant foods and raw animal foods to raise all parts of the food to the safe internal temperature recommended by the United States Department of Agriculture, or a higher temperature based on the preferences of the person who will consume the food. For the purposes of this rule, cooking does not include the application of heat to ready to eat foods, as defined in Subpart 1-201.10 of the 2017 Food Code published by the U.S. Food & Drug Administration, including but not limited to, hot dogs and marshmallows.

207 DANGEROUS MATERIAL: Any substance or combination of substances that is capable of causing bodily harm or property loss unless neutralized, consumed, or otherwise disposed of in a controlled and safe manner.

- 208 DITCHBANK:** A lateral area not to exceed two and one half feet on either side of a ditch.
- 209 FENCE ROW:** A lateral area not to exceed two and one half feet on either side of the centerline of a fence.
- 210 FIREBOX:** The chamber or compartment inside of an air curtain destructor wherein materials are burned.
- 211 FLAME CULTIVATION:** The practice of using a flame to expose vegetative material to intense heat (approximately 2000°F) for a short duration (approximately 1/10th of a second) to vaporize the water in the vegetative cells in order to destroy the photosynthetic process. This practice does not burn or combust the vegetative material.
- 212 FLUE:** Any duct or passage for air or combustion gases, such as a stack or chimney.
- 213 FUEL:** Any material which is burned to produce energy (such as heat), to reduce the volume or mass of solid material, or for firefighter training.
- 214 HIGH TEMPERATURE MECHANICAL BURNER:** A portable device (such as a torch) that combusts propane or another hydrocarbon gas to create a flame that can be continuously maintained and applied until combustion is complete.
- 215 INDOOR FIRE FOR FIREFIGHTER TRAINING:** Any fire ignited inside of a structure for the purposes of training career and volunteer firefighters whose duties are primarily structural in nature.
- 216 MANUFACTURED FIRELOG:** A log that is made from recycled wood, such as sawdust, that is compressed to form a log or mixed with a binder and extruded into a log shape.
- 217 NFPA 1001:** The National Fire Protection Association (NFPA) standard for firefighter professional qualifications. The standard identifies the minimum job performance requirements for career and volunteer firefighters whose duties are primarily structural in nature.
- 218 NON-URBAN AREA OF LOW POPULATION:** Any geographic location where the nearest occupied place is more than 1,320 feet (one-fourth of a mile) away. For the purposes of this definition, an occupied place that is owned by the burn permit applicant will not be considered when determining if the burn location identified on the application is a non-urban area of low population.
- 219 OCCUPIED PLACE:** A location where people are either residing (a residence) or working (a workplace) or any place where people might have an activity (e.g. bus stop, basketball court, or patio). For the purpose of this rule, this definition does not include an occupied place that is owned and occupied by the owner or operator of the open outdoor fire.
- 220 OPEN OUTDOOR FIRE OR OPEN BURNING:** Any combustion of any type of material outdoors, where the products of combustion are not directed through a flue.

- 221 ORCHARD HEATERS:** A device which helps prevent frost damage to fruit trees by heating. An orchard heater consists of a pipeline heater system operated from a central control from which fuel is distributed by a piping system from a centrally located tank.
- 222 OUTDOOR FIRE:** Any open outdoor fire and any combustion of any solid fuel where the products of combustion are vented outdoors. For the purposes of this rule, outdoor fire includes, but is not limited to chimineas, smokers, cooking appliances, and forges where the products of combustion go through a flue or a stack and are discharged outdoors.
- 223 PELLET FUEL:** Refined and densified fuel shaped into small pellets or briquettes that are uniform in size, shape, moisture, density and energy content.
- 224 PROHIBITED MATERIALS:** Aerosol spray cans; animal carcasses; animal waste; antifreeze; asbestos; asphalt, asphalt shingles and other asphalt products; batteries; chemically treated or soaked wood; cleaners; coal; counter tops; electrical wire insulation; explosives or ammunition; fabrics; fiberboard; flammable liquids; flooring; furniture; garbage; grass clippings; hazardous material containers, including those that contain lead, cadmium, mercury, and arsenic compounds; hazardous waste; insulation; landscape waste; painted wood; paper and paper products, including books, magazines, and office records; leaves; liquid or gelatinous hydrocarbons; oleanders; packaging; paints; pesticides, pesticide bags, and pesticide containers; plastic, including plastic bags and other plastic products; polyester products; rags; refuse; rubbish; solvents; stains; tar and tar paper; tires; transformer oils; tree trimmings; varnishes; waste petroleum products, including waste crankcase oil, transmission oil, and oil filters; and any substance that emits dense smoke or obnoxious odors.
- 225 PUBLIC OFFICER:** Any elected or appointed officer of a public agency established by charter, ordinance, resolution, state constitution or statute, but excluding members of the legislature.
- 226 RESTRICTED-BURN PERIOD:** A condition declared by the Control Officer whenever meteorological conditions are conducive to an accumulation of carbon monoxide (CO), ozone, and/or particulate matter in exceedance of the standards or when air quality reaches other limits established by the Control Officer or when there is increased fire danger. The Control Officer will declare a restricted-burn period if any of the following standards are likely to be exceeded:
- a. The primary ambient air quality standard for carbon monoxide, eight-hour average, in Rule 510 of these rules;
 - b. The primary ambient air quality standard for ozone, eight-hour average, in Rule 510 of these rules; and
 - c. Either of the following 24-hour average concentrations for particulate matter:
 - (1) PM₁₀ – 120 micrograms per cubic meter; or
 - (2) PM_{2.5} – 30 micrograms per cubic meter.
- 227 SEASONED WOOD:** Wood with a moisture content less than or equal to 20 percent, as determined using a moisture meter that is operated in accordance with the manufacturer's

recommendations. For the purposes of this rule, seasoned wood includes charcoal, pellet fuel, and manufactured firelogs.

- 228 SOLID FUEL:** Any fuel that is in a solid state prior to combustion.
- 229 SUITABLE FOR IMMEDIATE HUMAN CONSUMPTION:** Foods that have been cooked to the safe minimum internal temperature recommended by the United States Department of Agriculture and to the preferences of the person who will consume the food.

SECTION 300 – STANDARDS

- 301 PROHIBITION-OPEN OUTDOOR FIRES:** No person may ignite, cause to be ignited, permit to be ignited, suffer, allow, or maintain any fire or device listed in Section 102 of this rule, within the limits of Maricopa County, except as provided in Sections 304 through 322 of this rule.
- 302 GENERAL REQUIREMENTS:** The owner or operator of any open outdoor fire listed in Sections 304 through 321 of this rule, or any indoor fire for firefighter training listed in Section 306 of this rule, shall comply with all of the following requirements from the time the fire is ignited until the fire has been completely extinguished:
- 302.1** Fire extinguishing equipment shall be readily available at all times;
 - 302.2** An attendant trained in the use of fire extinguishing equipment shall be present at the location of the fire;
 - 302.3** No items or materials that will cause the production of black smoke shall be present in or added to an open outdoor fire, however items or materials that will cause the production of black smoke may be added to an indoor fire for firefighter training;
 - 302.4** Prohibited materials shall not be burned, except as provided in Sections 319, 320, and 321 of this rule;
 - 302.5** The open outdoor fire shall not be used for disposal of dangerous materials unless the owner or operator complies with Section 319 of this rule; and
 - 302.6** If vegetative material that is more than six inches in diameter will be burned, a self-contained, above ground air curtain destructor shall be used and the owner or operator shall:
 - a.** Obtain a Title V Permit prior to igniting the open outdoor fire;
 - b.** Obtain an approved site-specific burn plan from the Control Officer, in accordance with Section 407 of this rule; and
 - c.** Comply with the Appendix to Rule 314
- 303 PERMIT REQUIREMENTS:** The owner or operator of any open outdoor fire listed in Sections 304 through 310 of this rule, or any indoor fire for firefighter training allowed in Section 306 of this rule, shall comply with all of the following requirements before the open outdoor fire is ignited. These requirements shall not apply to the owner or operator of any open outdoor fire listed in Sections 311 through 321 of this rule. These requirements shall

also not apply to any fireplace, woodstove, or chiminea that is subject to Section 322 of this rule.

303.1 Obtain a burn permit in accordance with the administrative requirements in Section 400 of this rule before the fire is ignited;

303.2 After the burn permit has been issued, call the local fire department and the Control Officer each day, before the fire is ignited, to obtain permission to ignite the fire. The Control Officer shall approve or deny permission to burn based on National Weather Service forecasts or other meteorological analyses that indicate expected concentrations of criteria pollutants, the likelihood of stagnation events that may prevent the dispersion of air pollutants, the size of the fire, and the distance between the fire and affected communities.

303.3 Before the fire is ignited, ensure that the size of the fire will not exceed the size provided on the burn permit application and that the method of burning and the location of the fire match the information provided on the burn permit application.

304 OPEN OUTDOOR FIRES FOR DISEASE AND/OR PEST PREVENTION: The owner or operator of an open outdoor fire declared necessary by the Arizona Department of Agriculture, when such fires have been determined essential for the purposes of disease or pest prevention and have been certified by actual investigations conducted by the Arizona Department of Agriculture, shall comply with all of the following requirements.

304.1 Comply with general requirements in Section 302 of this rule;

304.2 Comply with the permit requirements in Section 303 of this rule;

304.3 Comply with the recordkeeping requirements in Section 501.1 of this rule;

304.4 Not ignite or maintain the open outdoor fire during a restricted-burn period;

304.5 Between April 1 and September 30, ignite the open outdoor fire after 6:00 a.m. and completely extinguish the open outdoor fire by 6:00 p.m. on the same day; and

304.6 Between October 1 and March 31, ignite the open outdoor fire after 10:00 a.m. and completely extinguish the open outdoor fire by 5:00 p.m. on the same day.

305 OPEN OUTDOOR FIRES FOR PREVENTION OF FIRE HAZARDS: The owner or operator of an open outdoor fire declared necessary, by a public officer in the performance of their official duties, for the control of weeds or for the prevention of fire hazards shall comply with all of the following requirements.

305.1 Comply with general requirements in Section 302 of this rule;

305.2 Comply with the permit requirements in Section 303 of this rule;

305.3 Comply with the recordkeeping requirements in Section 501.1 of this rule;

305.4 Not ignite or maintain the open outdoor fire during a restricted-burn period;

305.5 Between April 1 and September 30, ignite the open outdoor fire after 6:00 a.m. and completely extinguish the open outdoor fire by 6:00 p.m. on the same day; and

305.6 Between October 1 and March 31, ignite the open outdoor fire after 10:00 a.m. and completely extinguish the open outdoor fire by 5:00 p.m. on the same day.

306 FIRES FOR FIREFIGHTER TRAINING: The owner or operator of an indoor or open outdoor fire for firefighter training, including but not limited to firefighter training areas and firefighter training structures, shall comply with all of the following requirements.

- 306.1** Comply with general requirements in Section 302 of this rule;
- 306.2** Comply with the permit requirements in Section 303 of this rule;
- 306.3** Comply with the recordkeeping requirements in Section 501.1 of this rule; and
- 306.4** Not ignite or maintain the indoor or open outdoor fire during a restricted-burn period, unless the fire is necessary for NFPA 1001 required training and all of the following requirements are met:
 - a.** The cumulative duration of the indoor or open outdoor fire shall not exceed 2 hours in any 24-hour period;
 - b.** Permission to burn shall be requested in writing and include the date and time of the training, the cumulative duration of the indoor or open outdoor fire; and the type and amount of materials to be burned; and
 - c.** The indoor or open outdoor fire shall not be ignited unless permission is granted in writing by the Control Officer for each day of NFPA 1001 required training. The Control Officer will base the decision to grant or deny permission to burn based on expected meteorological conditions and expected emissions from the indoor or open outdoor fire. The Control Officer may cancel permission to ignite the indoor or open outdoor fire if the Control Officer has reason to believe atmospheric conditions have changed.

307 OPEN OUTDOOR FIRES FOR BURNING OF AGRICULTURAL DITCHBANKS AND FENCE ROWS: The owner or operator of an open outdoor fire for burning ditchbanks and fence rows that are located adjacent to agricultural operations, shall comply with all of the following requirements.

- 307.1** Comply with general requirements in Section 302 of this rule;
- 307.2** Comply with the permit requirements in Section 303 of this rule;
- 307.3** Comply with the recordkeeping requirements in Section 501.1 of this rule;
- 307.4** Not ignite or maintain the open outdoor fire during a restricted-burn period;
- 307.5** Between April 1 and September 30, ignite the open outdoor fire after 6:00 a.m. and completely extinguish the open outdoor fire by 6:00 p.m. on the same day;
- 307.6** Between October 1 and March 31, ignite the open outdoor fire after 10:00 a.m. and completely extinguish the open outdoor fire by 5:00 p.m. on the same day;
- 307.7** Extinguish the open outdoor fire if emissions are limiting visibility on a roadway or if visible emissions extend to any occupied place that is not owned or operated by the owner or operator of the open outdoor fire;
- 307.8** Use a high temperature mechanical burner to ignite and maintain the open outdoor fire; and
- 307.9** Only burn vegetative materials.

- 308 OPEN OUTDOOR FIRES FOR WATERSHED REHABILITATION OR CONTROL:** The owner or operator of any open outdoor fire declared necessary by the federal government or any of its departments, agencies, or agents, or the State of Arizona or any of its agencies, departments, or subdivisions, for the purpose of watershed rehabilitation or control through vegetative manipulation shall comply with all of the following requirements.
- 308.1** Comply with general requirements in Section 302 of this rule;
 - 308.2** Comply with the permit requirements in Section 303 of this rule;
 - 308.3** Comply with the recordkeeping requirements in Section 501.1 of this rule;
 - 308.4** Not ignite or maintain the open outdoor fire during a restricted-burn period;
 - 308.5** Between April 1 and September 30, ignite the open outdoor fire after 6:00 a.m. and completely extinguish the open outdoor fire by 6:00 p.m. on the same day; and
 - 308.6** Between October 1 and March 31, ignite the open outdoor fire after 10:00 a.m. and completely extinguish the open outdoor fire by 5:00 p.m. on the same day.
- 309 OPEN OUTDOOR FIRES FOR DESTRUCTION OF TUMBLEWEEDS:** The owner or operator of an open outdoor fire for the destruction of tumbleweeds to prevent a fire hazard, shall comply with all of the following requirements, as applicable depending on the location of the open outdoor fire.
- 309.1** Within all portions of Maricopa County, the owner or operator shall:
 - a.** Comply with general requirements in Section 302 of this rule;
 - b.** Comply with the permit requirements in Section 303 of this rule;
 - c.** Comply with the recordkeeping requirements in Section 501.1 of this rule;
 - d.** Not ignite or maintain the open outdoor fire during a restricted-burn period;
 - e.** Not ignite the open outdoor fire on a Saturday, Sunday, or any holiday observed by Maricopa County;
 - f.** Cut and place the tumbleweeds in small piles (less than 15 feet in diameter) before igniting the open outdoor fire;
 - g.** Allow the tumbleweeds to dry before igniting the open outdoor fire. If it is not feasible to allow the tumbleweeds to dry, use a high temperature mechanical burner to ignite and maintain the open outdoor fire; and
 - h.** Extinguish the open outdoor fire if emissions are limiting visibility on a roadway, or if visible emissions extend to any occupied place that is not owned or operated by the owner or operator of the open outdoor fire, or if winds are blowing tumbleweeds out of piles.
 - 309.2** Within Area A, the owner or operator shall:
 - a.** Not ignite the open outdoor fire between May 1 and September 30;
 - b.** Between October 1 and March 31, ignite the open outdoor fire after 10:00 a.m. and completely extinguish the open outdoor fire by 5:00 p.m. on the same day; and

- c. Between April 1 and April 30, ignite the open outdoor fire after 6:00 a.m. and completely extinguish the open outdoor fire by 6:00 p.m. on the same day.

309.3 Outside Area A, the owner or operator shall:

- a. Between October 1 and March 31, ignite the open outdoor fire after 10:00 a.m. and completely extinguish the open outdoor fire by 5:00 p.m. on the same day; and
- b. Between April 1 and September 30, ignite the open outdoor fire after 6:00 a.m. and completely extinguish the open outdoor fire by 6:00 p.m. on the same day.

310 **OPEN OUTDOOR FIRES FOR AGRICULTURAL LAND CLEARING:** The owner or operator of an open outdoor fire for burning of indigenous scrub for the purpose of agricultural operations in non-urban areas of low population, shall comply with all of the following requirements, as applicable depending on the location of the open outdoor fire.

310.1 Within all portions of Maricopa County, the owner or operator shall:

- a. Comply with general requirements in Section 302 of this rule;
- b. Comply with the permit requirements in Section 303 of this rule;
- c. Comply with the recordkeeping requirements in Section 501.1 of this rule;
- d. Not ignite or maintain the open outdoor fire during a restricted-burn period; and
- e. Remove all materials other than indigenous scrub, including but not limited to, wood, rubber, tires, dirt, and metal, before igniting the open outdoor fire.

310.2 Within Area A, the owner or operator shall:

- a. Not ignite the open outdoor fire between May 1 and September 30;
- b. Between October 1 and March 31, ignite the open outdoor fire after 10:00 a.m. and completely extinguish the open outdoor fire by 5:00 p.m. on the same day; and
- c. Between April 1 and April 30, ignite the open outdoor fire after 6:00 a.m. and completely extinguish the open outdoor fire by 6:00 p.m. on the same day.

310.3 Outside Area A, the owner or operator shall:

- a. Between October 1 and March 31, ignite the open outdoor fire after 10:00 a.m. and completely extinguish the open outdoor fire by 5:00 p.m. on the same day; and
- b. Between April 1 and September 30, ignite the open outdoor fire after 6:00 a.m. and completely extinguish the open outdoor fire by 6:00 p.m. on the same day.

311 **OPEN OUTDOOR FIRES FOR WARMTH FOR HUMAN BEINGS:** The owner or operator of an open outdoor fire, that is ignited to provide warmth for human beings, shall comply with all of the following requirements, as applicable depending on the location of the open outdoor fire.

311.1 Within all portions of Maricopa County, the owner or operator shall:

- a. Comply with general requirements in Section 302 of this rule;

- b. Check the burn restrictions advisory webpage or call the air quality hotline each day, prior to igniting the open outdoor fire, to determine whether a restricted burn period has been declared;
- c. Not ignite or maintain the open outdoor fire during a restricted-burn period; and
- d. Only ignite seasoned wood.

311.2 Within Area A, the owner or operator shall not ignite the open outdoor fire between May 1 and September 30.

312 OPEN OUTDOOR FIRES FOR RECREATIONAL PURPOSES: The owner or operator of an open outdoor fire, that is ignited for recreational purposes, including but not limited to, bonfires, campfires, and fire pits, shall comply with all of the following requirements, as applicable depending on the location of the open outdoor fire.

312.1 Within all portions of Maricopa County, the owner or operator shall:

- a. Comply with general requirements in Section 302 of this rule;
- b. Check the burn restrictions advisory webpage or call the air quality hotline each day, prior to igniting the open outdoor fire, to determine whether a restricted burn period has been declared;
- c. Not ignite or maintain the open outdoor fire during a restricted-burn period; and
- d. Only ignite seasoned wood.

312.2 Within Area A, the owner or operator shall not ignite the open outdoor fire between May 1 and September 30.

313 OPEN OUTDOOR FIRES FOR BRANDING OF ANIMALS: The owner or operator of an open outdoor fire that is ignited to heat tools used for the branding of animals shall comply with all of the following requirements, as applicable depending on the location of the open outdoor fire.

313.1 Within all portions of Maricopa County, the owner or operator shall:

- a. Comply with general requirements in Section 302 of this rule;
- b. Check the burn restrictions advisory webpage or call the air quality hotline each day, prior to igniting the open outdoor fire, to determine whether a restricted burn period has been declared;
- c. Not ignite or maintain the open outdoor fire during a restricted-burn period; and
- d. Only ignite seasoned wood.

313.2 Within Area A, the owner or operator shall not ignite the open outdoor fire between May 1 and September 30.

314 FIRES FOR COOKING: The owner or operator of an open outdoor fire that is used for cooking, and the owner or operator of an appliance that burns solid fuel and is used for the cooking, smoking, or flavoring of food, shall comply with all of the following requirements:

314.1 Comply with general requirements in Section 302 of this rule;

- 314.2** Only ignite seasoned wood;
- 314.3** During a restricted burn period:
- a.** A fire shall only be established to cook, smoke, or flavor food for immediate human consumption;
 - b.** Cooking, smoking, or flavoring of food must begin without delay once the fire has been established;
 - c.** The fire must be extinguished without delay once all parts of the food are suitable for immediate human consumption; and
 - d.** The dimensions of the fire shall not exceed 2 square feet, unless a larger fire is necessary to ensure that all parts of the food will reach the minimum safe internal temperature recommended by the United States Department of Agriculture.
- 315** **OPEN OUTDOOR FIRES FOR ORCHARD HEATERS:** The owner or operator of an open outdoor fire that is ignited for purposes of frost protection in agricultural operations, including but not limited to farms, orchards, and nurseries, shall comply with the general requirements in Section 302 of this rule.
- 316** **OPEN OUTDOOR FIRES FOR PROPER DISPOSAL OF FLAGS:** The owner or operator of an open outdoor fire that is ignited for proper disposal of the flag of the United States in accordance with 4 U.S.C. § 8 shall comply with all of the following requirements:
- 316.1** Comply with general requirements in Section 302 of this rule;
 - 316.2** Only ignite seasoned wood;
 - 316.3** Disposal must begin without delay once the open outdoor fire has been established; and
 - 316.4** The open outdoor fire shall be extinguished without delay once the flag has been reduced to ash.
- 317** **OPEN OUTDOOR FIRES FOR DISPLAY OF PYROTECHNICS:** The owner or operator of an open outdoor fire that is ignited as part of a pyrotechnic display for a musical, cinematic, or theatrical function shall comply with the general requirements for open outdoor fires in Section 302 of this rule.
- 318** **OPEN OUTDOOR FIRES FOR FIRE EXTINGUISHER TRAINING:** The owner or operator of an open outdoor fire that is used for fire extinguisher training shall:
- 318.1** Comply with general requirements in Section 302 of this rule;
 - 318.2** Comply with the recordkeeping requirements in Section 501.1 of this rule;
 - 318.3** Only burn a small amount of flammable liquid in a non-combustible container or on a non-combustible pan;
 - 318.4** Not combust more than 2 gallons of flammable liquid per day;
 - 318.5** Between October 1 and March 31, ignite the open outdoor fire after 10:00 a.m. and completely extinguish the open outdoor fire by 5:00 p.m. on the same day;

- 318.6 Between April 1 and September 30, ignite the open outdoor fire after 6:00 a.m. and completely extinguish the open outdoor fire by 6:00 p.m. on the same day;
- 318.7 Check the burn restrictions advisory webpage or call the air quality hotline each day, prior to igniting the open outdoor fire, to determine whether a restricted burn period has been declared; and
- 318.8 Not ignite or maintain the open outdoor fire during a restricted-burn period, unless the fire is necessary for NFPA 1001 required training and all of the following requirements are met:
 - a. The cumulative duration of the open outdoor fire shall not exceed 2 hours in any 24-hour period;
 - b. Permission to burn shall be requested in writing and include the date and time of the training, the cumulative duration of the open outdoor fire; and the type and amount of materials to be burned; and
 - c. The open outdoor fire shall not be ignited unless permission is granted in writing by the Control Officer for each day of NFPA 1001 required training. The Control Officer will base the decision to grant or deny permission to burn based on expected meteorological conditions and expected emissions from the open outdoor fire. The Control Officer may cancel permission to ignite the open outdoor fire if the Control Officer has reason to believe atmospheric conditions have changed.

319 OPEN OUTDOOR FIRES FOR DISPOSAL OF DANGEROUS MATERIAL: The owner or operator of an open outdoor fire for disposal of dangerous material shall:

- 319.1 Obtain a permit for an open outdoor fire for the disposal of dangerous materials from the Arizona Department of Environmental Quality;
- 319.2 Comply with general requirements in Section 302 of this rule, except that prohibited materials can be burned;
- 319.3 Burn or dispose of the dangerous material in accordance with A.A.C. R18-2-602;
- 319.4 Check the burn restrictions advisory webpage or call the air quality hotline each day, prior to igniting the open outdoor fire, to determine whether a restricted burn period has been declared;
- 319.5 Not ignite or maintain the open outdoor fire during a restricted-burn period;
- 319.6 Between October 1 and March 31, ignite the open outdoor fire after 10:00 a.m. and completely extinguish the open outdoor fire by 5:00 p.m. on the same day; and
- 319.7 Between April 1 and September 30, ignite the open outdoor fire after 6:00 a.m. and completely extinguish the open outdoor fire by 6:00 p.m. on the same day.

320 OPEN OUTDOOR FIRES FOR TESTING POTENTIALLY EXPLOSIVE-CONTAINING PRODUCTS IN ACCORDANCE WITH DEPARTMENT OF TRANSPORTATION (DOT) OR DEPARTMENT OF DEFENSE (DOD)

GUIDELINES: The owner or operator of an open outdoor fire for testing potentially explosive containing, flammable, or combustible products (e.g. automotive airbags, rocket

motors, gas generators, and vehicular assemblies) in accordance with DOT or DOD guidelines, shall:

- 320.1 Comply with general requirements in Section 302 of this rule, except that prohibited materials can be burned;
- 320.2 Comply with the permitting requirements in Section 303 of this rule, unless:
 - a. The testing is for purposes of hazard classification, packaging performance, propagation, and/or mass fire;
 - b. The testing area is controlled; and
 - c. Total emissions from all fires ignited for purposes of hazard classification, packaging performance, propagation, and/or mass fire do not exceed any of the permitting thresholds in Rule 200, Section 303.1.
- 320.3 Comply with the recordkeeping requirements in Section 501.2 of this rule;
- 320.4 Calculate emissions from the open outdoor fire using emission factors referenced in AP-42 or using other means of quantification that have been approved by the Control Officer and the Administrator;
- 320.5 Between October 1 and March 31, ignite the open outdoor fire after 10:00 a.m. and completely extinguish the open outdoor fire by 5:00 p.m. on the same day;
- 320.6 Between April 1 and September 30, ignite the open outdoor fire after 6:00 a.m. and completely extinguish the open outdoor fire by 6:00 p.m. on the same day;
- 320.7 Check the burn restrictions advisory webpage or call the air quality hotline each day, prior to igniting the open outdoor fire, to determine whether a restricted burn period has been declared; and
- 320.8 Not ignite or maintain the open outdoor fire during a restricted-burn period, unless the Control Officer has granted permission to burn during the restricted-burn period. Permission to burn during the restricted-burn period shall be obtained prior to igniting the open outdoor fire. The Control Officer will grant permission to burn during a restricted-burn period if emissions from the open outdoor fire will not exceed two pounds of particulate matter per day.

321 OPEN OUTDOOR FIRES FOR TESTING POTENTIALLY EXPLOSIVE-CONTAINING PRODUCTS FOR COMMERCIAL, MILITARY, OR LAW ENFORCEMENT USE: The owner or operator of an open outdoor fire for testing potentially explosive products for commercial, military, or law enforcement use shall:

- 321.1 Comply with general requirements in Section 302 of this rule, except the prohibited materials can be burned;
- 321.2 Comply with the permitting requirements in Section 303 of this rule, unless:
 - a. The testing is for purposes of testing potentially explosive products for commercial, military, or law enforcement use;
 - b. The testing area is controlled; and

- c. Total emissions from all fires ignited for purposes of testing potentially explosive products for commercial, military, and law enforcement use do not exceed any of the permitting thresholds in Rule 200, Section 303.1.

- 321.3** Comply with the recordkeeping requirements in Section 501.2 of this rule;
- 321.4** Calculate emissions from the open outdoor fire using emission factors referenced in AP-42 or using other means of quantification that have been approved by the Control Officer and the Administrator.
- 321.5** Between October 1 and March 31, ignite the open outdoor fire after 10:00 a.m. and completely extinguish the open outdoor fire by 5:00 p.m. on the same day;
- 321.6** Between April 1 and September 30, ignite the open outdoor fire after 6:00 a.m. and completely extinguish the open outdoor fire by 6:00 p.m. on the same day;
- 321.7** Check the burn restrictions advisory webpage or call the air quality hotline each day, prior to igniting the open outdoor fire, to determine whether a restricted burn period has been declared; and
- 321.8** Not ignite or maintain the open outdoor fire during a restricted-burn period, unless the Control Officer has granted permission to burn during the restricted-burn period. Permission to burn during the restricted-burn period shall be obtained prior to igniting the open outdoor fire. The Control Officer will grant permission to burn during a restricted-burn period if emissions from the open outdoor fire will not exceed two pounds of particulate matter per day.

322 FIREPLACES, WOODSTOVES, AND CHIMINEAS AT COMMERCIAL AND INSTITUTIONAL ESTABLISHMENTS: The owner or operator of any fireplace, woodstove, or chiminea that combusts non-gaseous fuels and is located at a commercial or institutional establishment shall:

- 322.1** Not ignite or combust any prohibited materials;
- 322.2** Only ignite seasoned wood;
- 322.3** Check the burn restrictions advisory webpage or call the air quality hotline each day, prior to burning in the fireplace, woodstove, or chiminea, to determine whether a restricted burn period has been declared; and
- 322.4** Not ignite or burn any non-gaseous fuel in the fireplace, woodstove, or chiminea during a restricted-burn period.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS FOR BURN PERMITS AND BURN PLANS

- 401 FEES REQUIRED:** A fee shall be charged for a Burn Permit or the approval of each site specific Air Curtain Destructor Burn Plan as set forth in Rule 280 (Fees) of these rules.
- 402 BURN PERMIT APPLICATION:** A person shall file with the Control Officer, on a form prescribed by the Control Officer, a burn permit application and the complete application fee as described in Rule 280 (Fees) of these rules. The Control Officer shall act on a burn permit application and shall notify the applicant within 14 calendar days of the filing of a complete burn permit application.

- 402.1** A separate burn permit application is required for each burn site location. A burn site location is one of the following:
- a. Contiguous areas under the same ownership; or
 - b. A geographic area not exceeding one mile in length or width where all areas on which burning will occur are under the same ownership.
- 402.2** The issuance of a burn permit does not relieve the permittee from any of the requirements of a fire department having jurisdiction, including but not limited to having the burn permit validated by such fire department.
- 402.3** Permission given by a Public Officer for setting any fire given by a public officer in the performance of official duty under Sections 304, 305, or 308 of this rule shall be given in writing and a copy of the written permission shall be transmitted immediately to the Control Officer. The setting of any such fire shall be conducted in a manner and at such times as approved by the Control Officer, unless doing so would defeat the purpose of this exemption. The written permission from the Public Officer shall include one of the following statements:
- a. The open outdoor fire has been determined essential for the purposes of disease or pest prevention and has been certified by actual investigations conducted by the Arizona Department of Agriculture;
 - b. The open outdoor fire is necessary for the control of weeds or for the prevention of fire hazards; or
 - c. The open outdoor fire is necessary for the purposes of watershed rehabilitation or control through vegetative manipulation.
- 402.4** If a person has obtained a Title V Permit, a Non-Title V Permit, or authority to operate under a General Permit under Regulation II (Permits and Fees) of these rules that includes condition(s) regarding open outdoor fires, then such person shall not be required to obtain a separate burn permit from the Control Officer. An owner or operator of an air curtain destructor that has obtained a Title V permit from the ADEQ shall submit a burn plan for each burn site location to the Control Officer as described in Section 407 of this rule.
- 402.5** Each burn permit application shall include all of the following information:
- a. The name, address, and contact information for the burn permit applicant;
 - b. A description of the burn location (including address(es), parcel number(s), or GIS coordinates);
 - c. The date and time when burning will occur;
 - d. The type of material that will be combusted; and
 - e. The name and contact information of the person(s) authorized to ignite and extinguish the open outdoor fire if an order to extinguish open burning is issued.

403 BURN PERMIT CONDITIONS: Each burn permit issued under this rule shall include enforceable permit conditions that are relevant for the types of fires that require a burn

permit. The Control Officer may impose any additional permit conditions that are necessary to ensure compliance with Federal laws, State laws, or these rules.

404 BURN PERMIT AND BURN PLAN INSPECTIONS: The Control Officer shall conduct an on-site inspection before issuing a burn permit or approving a burn plan. The purpose of the inspection is to ensure that the information provided in the burn permit application or burn plan application is accurate and complete and that no prohibited materials will be burned, except as provided in Sections 319, 320, and 321 of this rule. After an initial on-site inspection by the Control Officer has been completed, a burn permit may be issued for the same location(s) without having to conduct additional initial on-site inspections. However, periodic unscheduled, on-site inspections may be conducted by the Control Officer.

405 BURN PERMIT DENIAL: The Control Officer shall deny a burn permit application if the material or operations do not meet the criteria described in this rule. If the purpose of burning is removal of indigenous scrub vegetation, the Control Officer shall deny a burn permit application if the Control Officer has previously issued a burn permit for the same geographical location.

406 BURN PERMIT TERMS: A burn permit shall be issued for the following terms:

406.1 Disease/Pest Prevention: 30 days from date of issuance

406.2 Fire Hazard: 30 days from date of issuance

406.3 Tumbleweeds: 30 days from date of issuance

406.4 Ditchbank/Fence Row: 1 year from date of issuance

406.5 Fire Fighting Instruction: 1 year from date of issuance

406.6 Indigenous Scrub Vegetation/Agricultural Land Clearance: 30 days from date of issuance

406.7 Watershed Rehabilitation: 30 days from date of issuance

407 BURN PLAN APPLICATION AND CONDITIONS: An owner or operator of an air curtain destructor that has obtained a Title V permit from the ADEQ shall obtain an approved site-specific burn plan for each burn site location. To obtain an approved site-specific burn plan, a person shall file with the Control Officer, on a form prescribed by the Control Officer, a burn plan application and the complete application fee as described in Rule 280 (Fees) of these rules. The Control Officer shall act on a burn plan application and shall notify the applicant within 14 calendar days of the filing of a complete burn plan application.

407.1 A separate, site-specific burn plan application is required for each burn site location. A burn site location is one of the following:

a. Contiguous areas under the same ownership; or

b. A geographic area not exceeding one mile in length or width where all areas on which burning will occur are under the same ownership.

- 407.2** A burn plan application shall be site-specific and shall list the following, at a minimum:
- a.** Notification of intent to burn;
 - b.** The anticipated dates and hours of the burn;
 - c.** The type and quantity of fuel that will be used;
 - d.** The type of material burned;
 - e.** The legal location, to the nearest township, range and section or latitude and longitude, to the nearest degree minute, street address, or parcel number;
 - f.** The burn plan posting; and
 - g.** The listing of the air curtain destructor's requirements as outlined in Section A of the Appendix to this rule.
- 407.3** The Control Officer shall conduct an on-site inspection before approving the burn plan application. The purpose of the inspection is to ensure that the information provided in the burn plan application is accurate and complete, and that no prohibited materials will be burned.
- 407.4** The approval of a burn plan does not relieve the permittee from any of the requirements of a fire department having jurisdiction, including but not limited to having the burn plan validated by such fire department.
- 407.5** The Control Officer may impose any conditions that are necessary to ensure compliance with Federal laws, State laws, or these rules.
- 407.6** The Control Officer shall deny a burn plan application if the material or operations do not meet the criteria described in this rule.

SECTION 500 – MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING:

- 501.1** The owner or operator of an open outdoor fire that is subject to Section 304, 305, 306, 307, 308, 309, 310, 318, or 319 of this rule, shall submit the following information to the Control Officer each time that open burning occurs. This information shall be provided on a daily basis either by writing, fax, or electronically and shall include:
- a.** The date of the burn; and
 - b.** The type and quantity of fuel burned for each date open outdoor burning occurs; and
 - c.** The fire type such as a pile or windrow for each date that open outdoor burning occurs; and
 - d.** The legal location, to the nearest township, range and section, or latitude and longitude, to the nearest degree minute, street address, or parcel number.
- 501.2** The owner or operator of an open outdoor fire that is subject to Section 320 or Section 321 of this rule, shall submit the following information to the Control

Officer for each day that such testing is conducted. This information shall be provided on a daily basis either by writing, fax, or electronically and shall include:

- a.** The date of the testing;
- b.** The time of day of testing;
- c.** The legal location of such testing, to the nearest township, range and section, or latitude and longitude, to the nearest degree minute, street address, or parcel number;
- d.** The unit designation (if applicable) (e.g. part number and test item description);
- e.** The quantity of units tested;
- f.** The type and quantity of material burned;
- g.** The total charge weight per unit tested;
- h.** The total weight of airborne particulate matter and gaseous pollutant effluents produced per test unit;
- i.** The test procedure used;
- j.** The duration of burn of each test unit; and
- k.** The estimated emissions resulting from the testing.

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 314
OUTDOOR FIRES AND COMMERCIAL/INSTITUTIONAL SOLID FUEL BURNING**

**APPENDIX
REQUIREMENTS FOR AIR CURTAIN DESTRUCTORS**

A. Air Curtain Destructor Requirements:

1. The length of the firebox must not exceed the length of the air curtain.
2. The firebox shall be lined with refractory materials.
3. The depth of the firebox shall be of such a distance to allow all burning material to be below the curtain of air created by the air curtain destructor.
4. The width of the firebox shall not exceed the width of the air curtain.
5. The firebox must have 4 stable, vertical sides.
6. Each time an air curtain destructor is moved, an inspection of the air curtain destructor must be made by the Control Officer prior to burning.

B. Equipment Set-Up:

1. An owner or operator of an air curtain destructor shall use a firebox and not a pit or trench to conduct open outdoor burning.
2. The equipment must be positioned so as to allow the blower's airflow to strike at a downward angle no less than 24 inches below the opposite rim of the firebox.
3. There shall be at least 1,000 feet between any two air curtain destructors.
4. An air curtain destructor shall be located at least 500 feet from any residence or building structure.
5. An air curtain destructor shall be located at least 500 feet from any fuel pipeline or fuel storage area.
6. An air curtain destructor shall be located at least 250 feet from any power lines.
7. Material that is not being worked or is being stockpiled to be burned at a later date by using an air curtain destructor shall be kept at least 75 feet from the air curtain destructor while the burn is taking place.

C. Operation of Blower:

1. All equipment must be operated and maintained according to manufacturer's specifications and the equipment manual.
2. The blower must be operating when and as long as any material in the firebox is burning.

D. Loading of the Firebox:

1. When loading (feeding) the firebox, the material must not extend above the air curtain (blower airflow).
2. The loading of materials into the firebox must be discontinued at a minimum of 2 hours prior to the end of the designated burning hours. The blower must continue to operate until the end of the burning hours or until combustion is completed.
3. Adequate measures must be taken to assure that no emissions emanate from materials left in the firebox (i.e., when combustion is completed). All materials left in the firebox must be extinguished with water or covered over with a minimum of 1 foot of mineral soil.

E. Firebox Clean-Out: All materials removed from the firebox must be completely extinguished and all reasonable precautions taken to control emissions.

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 316
NONMETALLIC MINERAL PROCESSING**

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 316
NONMETALLIC MINERAL PROCESSING**

SECTION 100 – GENERAL

101 PURPOSE: To limit the emission of particulate matter into the ambient air from any nonmetallic mineral processing plant and any related operations.

102 APPLICABILITY: The provisions of this rule shall apply to any commercial and/or industrial nonmetallic mineral processing plant and any related operations. Compliance with the provisions of this rule shall not relieve any person subject to the requirements of this rule from complying with any other applicable rules, including New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants. Whenever more than one rule, regulation, or emission limit applies to nonmetallic mineral processing and any related operations subject to this rule, the more stringent standard applies.

103 EXEMPTIONS: The provisions of this rule do not apply to:

103.1 Dry material transfer facilities.

103.2 Water treatment facilities.

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

201 AFFECTED OPERATION: An operation that processes nonmetallic minerals or that is related to such processing and process sources including, but not limited to: excavating, crushers, grinding mills, screening equipment, conveying systems, elevators, transfer points, bagging operations, storage bins, enclosed truck and railcar loading stations, and truck dumping.

202 AGGREGATE TRUCK: Any truck with an open top used to transport the products of nonmetallic mineral processing plants.

203 APPROVED EMISSION CONTROL SYSTEM (ECS): A system for reducing particulate emissions, consisting of collection and/or control devices which are approved in writing by the Control Officer and are designed and operated in accordance with good engineering practice.

204 AREA ACCESSIBLE TO THE PUBLIC: Any paved parking lot or paved roadway that can be entered or used for public travel primarily for purposes unrelated to the dust-generating operations.

- 205 ASPHALTIC CEMENT:** The dark brown to black cementitious material (solid, semisolid, or liquid in consistency), of which the main constituents are naturally occurring bitumens or bitumens resulting from petroleum refining.
- 206 ASPHALTIC CONCRETE PLANT/ASPHALT PLANT:** Any facility used to manufacture asphaltic concrete by mixing graded aggregate and asphaltic cements.
- 207 BAGGING OPERATION:** The mechanical process by which bags or other containers are filled with nonmetallic minerals or dry materials.
- 208 BATCH TRUCK:** Any truck that loads and transports products produced by batch.
- 209 BELT CONVEYOR:** A conveying device that transports material from one location to another by means of an endless belt that is carried on a series of idlers and routed around a pulley at each end.
- 210 BERMS:** Piles or mounds of material along an elevated roadway capable of moderating or limiting the force of a vehicle in order to impede the vehicle's passage over the bank of the roadway.
- 211 BLASTING OPERATIONS:** Operations that break or displace soil and/or rock by means of explosives.
- 212 BLUE SMOKE:** A combination of hydrocarbons and particulate matter that is produced when asphaltic cement is heated.
- 213 BULK MATERIAL:** Any material including, but not limited to: earth, rock, silt, sediment, sand, gravel, soil, fill, aggregate less than two inches in length or diameter (i.e., aggregate base course (ABC)), dirt, mud, demolition debris, cotton, trash, cinders, pumice, saw dust, feeds, grains, fertilizers, fluff (from shredders), and dry concrete, that is capable of producing fugitive dust.
- 214 CEMENT:** A powder consisting of, but not limited to, alumina, silica, lime, iron oxide, and/or magnesium oxide burned together in a kiln and finely pulverized and used as an ingredient of mortar, concrete, and/or other similar product including, but not limited to, any hydraulic cement such as Portland cement.
- 215 COHESIVE HARD SURFACE:** One of the following materials applied and maintained as a roadway surface:
- 215.1** Pavement, including but not limited to, asphalt, concrete, asphaltic concrete, concrete pavement, chip seal, or rubberized asphalt.
 - 215.2** Recycled asphalt mixed with a binder.
 - 215.3** Continuous gravel cover which is at least six inches deep to which water is applied during the workday.
 - 215.4** A dust suppressant other than water, which is applied in accordance with the methods and frequencies specified in the approved Dust Control Plan, which produces or creates a mass in which the soil particles are tightly and uniformly stuck

together such that visible emissions are not produced by wind blowing across the surface or by motor vehicles or equipment driving on the surface.

- 215.5** Another material, which is applied and maintained in accordance with the approved Dust Control Plan, which creates a roadway surface such that visible emissions are not produced by wind blowing across the surface or by motor vehicles or equipment driving on the surface.
- 216 CONCRETE PLANT:** Any facility used to manufacture concrete by mixing water, aggregate, and cement.
- 217 CONVEYING SYSTEM:** A device for transporting materials from one piece of equipment or location to another location within a facility. Conveying systems include, but are not limited to: feeders, belt conveyers, bucket elevators and pressure control systems.
- 218 CRUSHER:** A machine used to crush ~~any~~ nonmetallic minerals or products made with nonmetallic minerals including, but not limited to, the following types: jaw, gyratory, cone, roll, rod mill, hammermill, and impactor.
- 219 DELIVERY TRUCK:** Any truck (including any non-motorized attachment to a truck, such as a trailer or other conveyance connected to or propelled by the actual motorized portion of the truck) that holds, stores, or delivers products or materials to or from nonmetallic mineral processing or any related operations.
- 220 DISTURBED SURFACE AREA:** A portion of the earth's surface (or material placed thereupon) which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed native condition if the potential for the emission of fugitive dust is increased by the movement, destabilization, or modification.
- 221 DRY MATERIAL:** Cement, fly ash, lime, and other pozzolan materials to which water or other liquids have not been added.
- 222 DRY MIX CONCRETE PLANT:** Any facility used to manufacture a mixture of aggregate and cements without the addition of water.
- 223 DUST-GENERATING OPERATION:** Any activity capable of generating fugitive dust including, but not limited to: land clearing, earthmoving, weed abatement by discing or blading, excavating, construction, demolition, bulk material handling, storage and/or transporting operations, vehicle use and movement, the operation of any outdoor equipment, or unpaved parking lots. For the purpose of this rule, landscape maintenance and playing on or maintaining a field used for non-motorized sports shall not be considered a dust-generating operation. However, landscape maintenance shall not include grading, trenching, or any other mechanized surface disturbing activities performed to establish initial landscapes or to redesign existing landscapes.
- 224 DUST SUPPRESSANT:** Water, hygroscopic material, solution of water and chemical surfactant, foam, non-toxic chemical stabilizer, or any other dust palliative, which is not prohibited for ground surface application by the EPA or the Arizona Department of

Environmental Quality (ADEQ), or any applicable law, rule, or regulation, as a treatment material for reducing fugitive dust emissions.

- 225 ENCLOSED TRUCK OR RAILCAR LOADING STATION:** That portion of a nonmetallic mineral processing plant where nonmetallic mineral are loaded by an enclosed conveying system into enclosed trucks or railcars.
- 226 END OF WORK DAY:** The end of a working period that may include one or more work shifts. If working 24 hours a day, the end of a working period is considered no later than 8 pm.
- 227 FABRIC FILTER BAGHOUSE:** A device in which particulates are removed from the stream of exhaust gases using permeable fabric bags.
- 228 FACILITY:** All the pollutant-emitting equipment and activities that are located on one or more contiguous or adjacent properties, and that are under the control of the same person or persons under common control.
- 229 FLY ASH:** Any product of coal combustion that is recovered for use as a cement or lime additive, absorbent, gas scrubber, plastics filler or any other beneficial use and that is exempt from regulation as a hazardous waste under 40 CFR 261.4.
- 230 FREEBOARD:** The vertical distance between the top edge of a cargo container area and the highest point at which the bulk material contacts the sides, front, and back of a cargo container area.
- 231 FUGITIVE DUST CONTROL MEASURE:** A technique, practice, or procedure used to prevent or minimize the generation, emission, entrainment, suspension, and/or airborne transport of fugitive dust.
- 232 FUGITIVE DUST CONTROL TECHNICIAN:** A person with the authority to expeditiously employ sufficient fugitive dust control measures to ensure compliance with this rule at a facility where nonmetallic mineral processing or any related operations occur.
- 233 FUGITIVE DUST EMISSION:** Particulate matter not collected by a capture system that is entrained in the ambient air and is caused from human and/or natural activities.
- 234 GRAVEL PAD:** A layer of washed gravel, rock, or crushed rock, which is at least one inch or larger in diameter and at least six inches deep. A Gravel pad shall be at least 30 feet wide, and 50 feet long or the length of the longest haul truck, whichever is greater, with a stabilizing mechanism/device (i.e., curbs or structural devices along the perimeter of the gravel pad), and shall dislodge mud, dirt, and/or debris from the tires of motor vehicles and/or haul trucks, prior to leaving a facility. If an unpaved surface exit does not have adequate width to install a 30-foot wide gravel pad, then the width of the gravel pad shall cover the full width of the unpaved surface exit and such shorter width shall be adequate to prevent trackout.
- 235 GRINDING MILL:** A machine used for the wet or dry fine crushing of any nonmetallic mineral. Grinding mills include, but are not limited to, the following types: hammer, roller,

rod, pebble and ball, and fluid energy. The grinding mill includes the air conveying system, air separator, or air classifier, where such systems are used.

- 236 HAUL/ACCESS ROAD:** Any unpaved road that is used by haul trucks to carry materials from the quarry or pit to different locations within the facility. For the purpose of this rule, haul/access roads are not in permanent areas of a facility.
- 237 HAUL TRUCK:** Any fully or partially open-bodied self-propelled vehicle including any non-motorized attachments, such as but not limited to: trailers or other conveyances that are connected to or propelled by the actual motorized portion of the vehicle used for transporting bulk materials.
- 238 INFREQUENT OPERATIONS:** Operations that have state mine identification, approved reclamation plans and bonding as required by State Mining and Reclamation Act of 1975, and only operate on an average of 52 days per year over the past three years.
- 239 LIME:** Any calcinated limestone including, but not limited to, hydraulic lime.
- 240 MATERIAL STORAGE AND SILO LOADING OPERATIONS:** Any combination of processes or equipment used for storing dry materials and/or loading dry materials into silos.
- 241 MIXER TRUCK:** Any truck that mixes cement and other ingredients in a drum to produce concrete.
- 242 MOTOR VEHICLE:** A self-propelled vehicle for use on the public roads and highways of the State of Arizona and required to be registered under the Arizona State Uniform Motor Vehicle Act, including any non-motorized attachments, such as but not limited to: trailers or other conveyances which are connected to or propelled by the actual motorized portion of the vehicle.
- 243 NEW FACILITY:** A facility that commenced nonmetallic mineral processing or any related operations on or after June 8, 2005. A facility that commenced nonmetallic mineral processing or any related operations before June 8, 2005 does not become a new facility due to the addition of new equipment, processes, or operations.
- 244 NONMETALLIC MINERAL:** Any of the following minerals or any mixture of which the majority is any of the following minerals:
- 244.1** Crushed and broken stone, including limestone, dolomite, granite, rhyolite, traprock, sandstone, quartz, quartzite, marl, marble, slate, shale, oil shale, and shell.
 - 244.2** Sand, gravel and quarried rocks.
 - 244.3** Clay including kaolin, fireclay, bentonite, fuller's earth, ball clay, and common clay.
 - 244.4** Rock salt.
 - 244.5** Gypsum.
 - 244.6** Sodium compounds including sodium carbonate, sodium chloride, and sodium sulfate.

- 244.7 Pumice.
- 244.8 Gilsonite.
- 244.9 Talc and pyrophyllite.
- 244.10 Boron including borax, kernite, and colemanite.
- 244.11 Barite.
- 244.12 Fluorspar.
- 244.13 Feldspar.
- 244.14 Diatomite.
- 244.15 Perlite.
- 244.16 Vermiculite.
- 244.17 Mica.
- 244.18 Kyanite including andalusite, sillimanite, topaz, and dumortierite.
- 244.19 Coal.
- 245 **NONMETALLIC MINERAL PROCESSING PLANT:** Any facility utilizing any combination of equipment or machinery to mine, excavate, separate, combine, crush, or grind any nonmetallic mineral including, but not limited to: lime plants, steel mills, asphalt plants, concrete plants, raw material storage and distribution, and sand and gravel plants.
- 246 **OPEN STORAGE PILE:** Any accumulation of bulk material with a 5% or greater silt content that has a total surface area of 150 square feet or more and that at any one point attains a height of three feet. Silt content is assumed to be 5% or greater unless a person can show, by testing in accordance with ASTM Method C136-06 or other equivalent method approved in writing by the Control Officer and the Administrator, that the silt content is less than 5%. For the purpose of this rule, the definition of open storage pile does not include berms that are installed to comply with 30 Code of Federal Regulations (CFR) 56.93000.
- 247 **OVERBURDEN REMOVAL OPERATION:** An operation that removes and/or strips soil, rock, or other materials that lie above a natural nonmetallic mineral deposit and/or in-between a natural nonmetallic mineral deposit.
- 248 **OVERFLOW WARNING SYSTEM/DEVICE:** A properly functioning system or device that sends a signal indicating that the level of material in a silo is approaching or at maximum capacity. The system/device shall be designed to automatically stop silo filling operations, or alert the operator(s) to stop the loading operation, when the level of material in a silo is approaching or at maximum capacity.
- 249 **PARTICULATE MATTER EMISSIONS:** Any and all finely divided solid or liquid materials other than uncombined water released to the ambient air as measured by the applicable state and federal test methods.

- 250 PAVE:** To apply and maintain asphalt, concrete, or other similar material, including, but not limited to, asphaltic concrete, concrete pavement, chip seal, rubberized asphalt, or recycled asphalt mixed with a binder, to the surface of a roadway or parking lot.
- 251 PERMANENT AREAS OF A FACILITY:** Areas that remain in-place for 180 days or more in 12 consecutive months. Permanent areas of a facility include the following areas: entrances, exits, parking areas, office areas, warehouse areas, maintenance areas (not including maintenance areas that are in the quarry or pit), concrete plant areas, asphaltic plant areas, and roads leading to and from such areas.
- 252 PERMANENT FACILITY:** Any facility that remains in-place for 180 days or more in 12 consecutive months.
- 253 POZZOLAN:** Any of finely divided siliceous or siliceous and aluminous materials that react chemically with slaked lime at ordinary temperature and in the presence of moisture to form a strong, slow-hardening cement.
- 254 PRESSURE CONTROL SYSTEM:** System in which loads are moved in the proper sequence, at the correct time, and at the desired speed through the use of valves that control the direction of air flow, regulate actuator speed, or respond to changes in air pressure.
- 255 PROCESS:** One or more operations including those using equipment and technology in the production of goods or services or the control of by-products or waste.
- 256 PROCESS SOURCE:** The last operation of a process or a distinctly separate process which produces an air contaminant and which is not a pollution abatement operation.
- 257 PRODUCTION WORK SHIFT:** An eight-hour operating period based on the 24-hour operating schedule.
- 258 RELATED OPERATIONS:** The use, handling, or storage of dry materials or nonmetallic minerals at a facility that produces other products or materials, or the preparation and maintenance of a facility subject to this rule. Related operations may include, but are not limited to:
- 258.1** Asphaltic concrete plants, asphalt plants, concrete plants, and dry mix concrete plants.
 - 258.2** Material storage and silo loading operations that occur at asphaltic concrete plants, asphalt plants, concrete plants, and dry mix concrete plants.
 - 258.3** Bagging operations.
 - 258.4** Handling, processing, or disposal of returned products.
 - 258.5** Processing of materials made with nonmetallic minerals or dry materials, including, but not limited to, concrete crushing.
 - 258.6** Installing, constructing, or maintaining unpaved roads, parking lots, or pads for processing equipment at a facility subject to this rule.
 - 258.7** Dust-generating operations that occur at a facility subject to this rule.

- 258.8 Blasting operations.
- 259 **RETURNED PRODUCTS:** Left-over concrete or asphalt products that were not used at a job site and were returned to the facility.
- 260 **RUMBLE GRATE:** A system that produces a vibration such that mud, dirt, and/or debris are shaken off the tires and the exterior surfaces of a motor vehicle as a motor vehicle passes over the system. The minimum length of a rumble grate shall be 20 feet in the direction of vehicle travel or the circumference of the largest tire of a motor vehicle as a motor vehicle passes over such rumble grate, whichever is greater. The width of a rumble grate shall cover the full width of the exit. A rumble grate shall consist of raised dividers (e.g., rails, pipes, or grates), which shall meet all of the following specifications:
- 260.1 The height of each divider shall measure no less than three inches;
- 260.2 The width of each divider shall measure no more than four inches; and
- 260.3 The distance between each divider (i.e., from the outer edge of a divider to the outer edge of a divider next to such divider) shall measure no less than six inches.
- 261 **SATURATED MATERIAL:** Mineral material with sufficient surface moisture such that particulate matter emissions are not generated from processing of the material through screening operations, bucket elevators, and belt conveyors. Material that is wetted solely by wet suppression systems is not considered to be “saturated” for the purpose of this rule.
- 262 **SCREENING OPERATION:** A device (such as a shaker screen) that mechanically separates material according to its size by passing undersize material through one or more mesh surfaces (screens) in series and retaining oversize material on the mesh surfaces (screens).
- 263 **SILO:** An elevated storage container with or without a top that releases material thru the bottom.
- 264 **SILT:** Any aggregate material with a particle size less than 75 micrometers in diameter, which passes through a No. 200 sieve.
- 265 **SPILLAGE:** Material caused or allowed, intentionally or unintentionally, to flow, run, or fall out, over or off of vehicles or equipment, where such spilled materials have the potential to generate or cause fugitive dust emissions.
- 266 **STACK EMISSIONS:** Emissions that are released to the atmosphere from a capture system through a building vent, stack or other point source discharge, including particulate matter or other emissions which have the potential to become particulate matter when released into the atmosphere and combined with other emissions from the same source.
- 267 **STAGING AREA:** A place where aggregate trucks and mixer trucks temporarily queue for their loading or unloading.

- 268 **STORAGE BIN:** A facility enclosure, hopper, silo, or surge bin for the storage of nonmetallic minerals or products made with nonmetallic minerals prior to further processing or loading.
- 269 **TRACKOUT:** Any materials that have the potential to produce fugitive dust and to adhere to and agglomerate on the surfaces of motor vehicles, haul trucks, and/or equipment (including tires) and that have fallen or been deposited onto an area accessible to the public.
- 270 **TRACKOUT CONTROL DEVICE:** A gravel pad, grizzly, wheel washer, rumble grate, paved area, truck washer, or other equivalent trackout control device located at the point of intersection of an unpaved area and an area accessible to the public that controls and prevents trackout and/or removes particulate matter from tires and the exterior surfaces of aggregate trucks, haul trucks, and/or motor vehicles that traverse a facility.
- 271 **TRANSFER FACILITY:** A facility that exclusively receives, stores, and distributes dry materials that remain within enclosed systems (such as hoses and silos) at all times.
- 272 **TRANSFER POINT:** A point in a conveying system where materials are transferred from or to a belt conveyor, except for transfer to a stockpile.
- 273 **TRUCK DUMPING:** The unloading of nonmetallic minerals or products made with nonmetallic minerals from movable vehicles designed to transport nonmetallic minerals or products made with nonmetallic minerals from one location to another. Movable vehicles include, but are not limited to: trucks, front end loaders, skip hoists, and railcars.
- 274 **TRUCK WASHER:** A system that is used to wash the entire surface and the tires of a truck.
- 275 **UNPAVED PARKING LOT:** Any area that is not paved and that is designated for parking or storing motor vehicles and equipment in the Dust Control Plan or that is used for parking or storing motor vehicles and equipment.
- 276 **UNPAVED ROAD:** Any road or equipment path that is not paved. For the purpose of this rule, an unpaved road is not a horse trail, hiking path, bicycle path, or other similar path used exclusively for purposes other than travel by motor vehicles.
- 277 **VENT:** An opening through which there is mechanically or naturally induced air flow for the purpose of exhausting air carrying particulate matter.
- 278 **WET MATERIAL PROCESSING OPERATION:** Either of the following:
- 278.1 Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors in the production line that process saturated materials up to the next crusher, grinding mill, or storage bin in the production line; or
 - 278.2 Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations that process saturated materials up to the first crusher, grinding mill, or storage bin in the production line.

- 279 **WET MINING OPERATION:** A mining or dredging operation designed and operated to extract any nonmetallic mineral from deposits existing at or below the water table, where the nonmetallic mineral is saturated with water.
- 280 **WET SCREENING OPERATION:** A screening operation which removes unwanted material or which separates marketable fines from the product by a washing process which is designed and operated at all times such that the product is saturated with water.
- 281 **WHEEL WASHER:** A system that is capable of washing the entire circumference of each wheel of the vehicle.
- 282 **WIND-BLOWN DUST:** Visible emissions, from any disturbed surface area, process source, or operation, which are generated by wind action alone.

SECTION 300 – STANDARDS

301 CRUSHING AND SCREENING – PROCESS EMISSION LIMITATIONS AND CONTROLS:

301.1 Process Emission Limitations: An owner, operator, or person subject to this rule shall not discharge, cause, or allow to be discharged into the ambient air:

- a. Stack emissions:
 - (1) Exceeding 7% opacity; or
 - (2) Containing more than 0.014 grains/dry standard cubic foot (gr/dscf) of particulate matter.
- b. Fugitive dust emissions exceeding the applicable opacity limits in Table 316-1.

**TABLE 316-1
FUGITIVE DUST EMISSION LIMITS FOR CRUSHING AND SCREENING**

EMISSION SOURCE	OPACITY LIMITS	
	At a facility that commenced construction, modification, or reconstruction	
	Before April 22, 2008	On or after April 22, 2008
(1) Any transfer point on a conveying system	7%	7%
(2) Any crusher	15%	12%
(3) Truck dumping directly into any screening operation, feed hopper, or crusher	20%	20%
(4) Any other affected operation or process source	10%	7%

301.2 Controls: An owner, operator, or person subject to this rule shall implement process controls described in Section 301.2(a), Section 301.2(b), Section 301.2(c), and Section 301.2(d) of this rule or shall implement process controls described in Section 301.2(a) and Section 301.2(e) of this rule:

- a. Enclose sides of all shaker screens.

- b. Permanently mount watering systems (including, but not limited to, spray bars, a fogging system, or a misting system) on all of the points listed below, excluding wet material processing operations:
 - (1) At every location of fugitive dust emissions from all crushers including, but not limited to, the inlet and outlet of all crushers;
 - (2) At the outlet of all shaker screens;
 - (3) At all material transfer points, excluding transfer points located within a surge tunnel; and
 - (4) At the exit of each surge tunnel, unless a watering system is permanently mounted at all transfer points within the surge tunnel.
- c. Operate watering systems, as necessary, on the points listed in Section 301.2(b) of this rule to continuously maintain the applicable minimum moisture content listed below. Compliance shall be demonstrated by conducting moisture testing as specified in Section 312 of this rule.
 - (1) 2% minimum moisture content at all points in a process line where washed feed products are directly feeding a hot mix asphalt plant;
 - (2) 2.5% minimum moisture content at all points in a process line where unwashed feed products are directly feeding a hot mix asphalt plant; and
 - (3) 4% minimum moisture content at all other points in a process line, unless an alternative minimum moisture content has been approved by the Control Officer and the Administrator.
 - (4) An alternative minimum moisture content requested in a permit application and approved by the Control Officer and the Administrator prior to implementation. When requesting an alternative minimum moisture content, the owner, operator, or person subject to this rule shall submit to the Control Officer documentation that justifies the alternative minimum moisture content. Documentation may include, but is not limited to: economic analyses, emissions rates, water availability, and technical feasibility.
- d. Maintain watering systems in good operating condition, as verified by daily inspections on days when process equipment is operating, and investigate and correct any problems before continuing and/or resuming operation of process equipment.
- e. Enclose and exhaust the regulated process to a properly sized fabric filter baghouse.

302 ASPHALTIC CONCRETE PLANTS - PROCESS EMISSION LIMITATIONS AND CONTROLS:

302.1 Process Emission Limitations: An owner, operator, or person subject to this rule shall not discharge, or cause, or allow to be discharged into the ambient air:

- a. When producing non-rubberized asphaltic concrete, stack emissions:
 - (1) Exceeding 5% opacity; or

- (2) Containing more than 0.04 gr/dscf (90 mg mg/dscm) of particulate matter.
- b. When producing rubberized asphaltic concrete, stack emissions:
 - (1) Exceeding 20% opacity; or
 - (2) Containing more than 0.04 gr/dscf (90 mg/dscm) of particulate matter;
- c. When producing rubberized asphaltic concrete, fugitive emissions of blue smoke from the drum dryer exceeding 20% opacity.
- d. Fugitive dust emissions exceeding 10% opacity from any affected operation, or process source, excluding truck dumping.
- e. Fugitive dust emissions exceeding 20% opacity from truck dumping directly into any asphalt plant feed hopper.

302.2 Controls: An owner, operator, or person subject to this rule shall control and vent exhaust from all drum dryers to a properly sized fabric filter baghouse.

303 MATERIAL STORAGE AND SILO LOADING OPERATIONS, CONCRETE PLANTS, AND-BAGGING OPERATIONS - PROCESS EMISSION LIMITATIONS AND CONTROLS:

303.1 Process Emission Limitations: An owner, operator, or person subject to this rule shall not discharge or cause or allow to be discharged into the ambient air:

- a. Stack emissions exceeding 5% opacity; or
- b. Fugitive dust emissions exceeding 10% opacity from any affected operation, or process source, excluding truck dumping.

303.2 Controls: An owner, operator, or person subject to this rule shall implement the following process controls:

- a. On all dry material storage silo(s), install and operate an overflow warning system/device.
- b. On all dry material storage silos installed after June 8, 2005, install a properly sized fabric filter baghouse or equivalent device designed to meet a maximum outlet grain loading of 0.01 gr/dscf.
- c. On dry mix concrete plant loading stations, when loading truck mixed product, implement one of the following process controls:
 - (1) Install and use a rubber fill tube;
 - (2) Install and operate a water spray;
 - (3) Install and operate a properly sized fabric filter baghouse or delivery system;
 - (4) Enclose mixer loading stations such that no visible emissions occur; or
 - (5) Conduct mixer loading stations in an enclosed process building such that no visible emissions from the building occur during the mixing activities.
- d. On each cement storage silo filling process/loading operation, install a pressure control system designed to shut-off the cement silo filling process/loading

operation if pressure from the delivery truck is excessive, as defined in the approved Operation and Maintenance (O&M) Plan.

- e. On each dry material storage silo filling process/loading operation installed after November 7, 2018, install a pressure control system designed to shut-off the silo filling process/loading operation if pressure from the delivery truck is excessive, as defined in the approved O&M Plan.

304 OTHER OPERATIONS:

- 304.1** For all dust-generating operations not specifically listed in Sections 301, 302, or 303 of this rule, the owner, operator, or person subject to this rule shall implement fugitive dust control measures to comply with Section 306 and Section 307 of this rule.
- 304.2** Dust-generating operations at a facility subject to the requirements of this rule shall not commence until the owner, operator, or person subject to this rule has obtained an air pollution control permit in accordance with Rule 200 of these rules.
- 304.3** Dust-generating operations that occur before or while portable equipment subject to the requirements of this rule is located at a facility shall not commence until the owner, operator, or person subject to this rule has obtained an air pollution control permit and submitted a move notice in accordance with Rule 200 of these rules.
 - a. With each portable source move notice, the owner, operator, or person subject to this rule shall submit, to the Control Officer, a Dust Control Plan that meets the requirements of Section 311 of this rule.
 - b. With each portable source move notice, the owner, operator, or person subject to this rule shall submit, to the Control Officer, an O&M Plan that meets the requirements of Section 305 of this rule.

305 AIR POLLUTION CONTROL EQUIPMENT AND APPROVED EMISSION CONTROL SYSTEM (ECS):

An owner, operator, or person subject to this rule shall provide, properly install and maintain in calibration, in good working order, and in operation air pollution control equipment required by this rule. When selecting air pollution control equipment required by this rule, the owner, operator, or person subject to this rule may consider the site-specific and/or material-specific conditions and logistics of a facility. When doing so, some air pollution control equipment may be more reasonable to implement than others. Regardless, any air pollution control equipment that is installed must achieve the applicable standard(s) required by this rule, as determined by the corresponding test method(s), as applicable, and must achieve other applicable standard(s) set forth in this rule. The owner, operator, or person subject to this rule may submit a request to the Control Officer and the Administrator for the use of alternative air pollution control equipment. The request shall include the proposed alternative air pollution control equipment, the air pollution control equipment that the alternative would replace, and a detailed statement or report demonstrating that the air pollution control equipment would result in equivalent or better emission control than the equipment prescribed in this rule. Nothing in this rule shall be construed to prevent an owner, operator, or person subject to this rule from making such demonstration. Following a decision by the Control Officer and the Administrator to grant the petition, the owner, operator, or person subject to this rule shall incorporate the

alternative air pollution control equipment in any required Operation and Maintenance (O&M) Plan.

305.1 Operation and Maintenance (O&M) Plan Requirements for an ECS: For each ECS that is used to comply with this rule or an air pollution control permit, the owner, operator, or person subject to this rule shall:

- a. Submit to the Control Officer for approval an O&M Plan for each ECS and for each ECS monitoring device that is used pursuant to this rule or an air pollution control permit. The O&M Plan(s) shall include all of the following information:
 - (1) ECS equipment manufacturer name and model designation;
 - (2) ECS equipment serial number, or a unique identifier assigned by the owner; and
 - (3) Key system operating parameters, such as temperatures, pressures and/or flow rates, necessary to determine the ECS is functioning properly and operating within design parameters, as well as the acceptable operating range, monitoring frequency, and recording method for each operating parameter.
 - (4) Descriptions of maintenance procedures that will be performed on each ECS and ECS monitoring device and the frequency of each maintenance procedure.
- b. Provide and maintain, readily available on-site at all times, the approved O&M Plan(s) for each ECS and each ECS monitoring device that is used pursuant to this rule or to an air pollution control permit.
- c. Install, maintain, and accurately calibrate monitoring devices described in the approved O&M Plan(s). The monitoring devices shall measure pressures, rates of flow, and/or other operating conditions necessary to determine if the control devices are functioning properly.
- d. Fully comply with all the identified actions and schedules provided in each O&M Plan.
- e. Upon receipt of written notice from the Control Officer that an O&M Plan is deficient or inadequate, submit a revised O&M Plan to the Control Officer within 5 working days of receipt of the Control Officer's written notice, unless such time period is extended by the Control Officer, upon written request, for good cause. During the time that the owner, operator, or person subject to this rule is preparing revisions to the O&M Plan, the owner, operator, or person subject to this rule shall comply with all requirements of this rule.

306 FUGITIVE DUST EMISSION LIMITATIONS: An owner, operator, or person subject to this rule shall comply with the following limitations at all times and in all areas of a site, unless otherwise specified.

306.1 20% Opacity Limitation: For emissions that are not already regulated by an opacity limit, an owner, operator, or person subject to this rule shall not discharge, cause, or allow to be discharged into the ambient air fugitive dust emissions exceeding 20% opacity, in accordance with the test methods described in Section 503 of this rule and in Appendix C-Fugitive Dust Test Methods of these rules.

306.2 Visible Emission Limitation Beyond Property Line: An owner, operator, or person subject to this rule shall not discharge, cause, or allow to be discharged visible emissions of particulate matter, including fugitive dust beyond the property line within which the emissions are generated.

306.3 Wind-Blown Dust: The fugitive dust emission limitations described in Section 306.1 and Section 306.2 of this rule shall not apply to wind-blown dust, if the owner, operator, or person subject to this rule meets the following conditions:

- a. Has implemented the fugitive dust control measures described in Section 307 of this rule, as applicable, and the fugitive dust emissions cannot be prevented by better application, operation, or maintenance of these fugitive dust control measures;
- b. Has compiled and retained records, in accordance with Section 501.4 of this rule; and
- c. Has implemented the following control measures, as applicable:
 - (1) For an active operation, implement one of the following fugitive dust control measures:
 - (a) Cease operation of any equipment or activity that may contribute to an exceedance of the fugitive dust emission limitations described in Section 306.1 of this rule; or
 - (b) Apply water or other suitable dust suppressant to keep the soil visibly moist.
 - (2) For an inactive open storage pile, implement one of the following fugitive dust control measures:
 - (a) Maintain a soil crust by applying water or other suitable dust suppressant or by implementing another fugitive dust control measure, in sufficient quantities to meet the stabilization standards described in Section 505 of this rule.
 - (b) Cover open storage pile with tarps, plastic, or other material such that wind will not remove the covering, if open storage pile is less than eight feet high.
 - (3) For an inactive-disturbed surface area, implement one of the following fugitive dust control measures:
 - (a) Uniformly apply and maintain surface gravel or a dust suppressant other than water; or
 - (b) Maintain a soil crust by applying water or other suitable dust suppressant or by implementing another fugitive dust control measure, in sufficient quantities to meet the stabilization standards described in Section 505 of this rule.

306.4 Stabilization Standards for Unpaved Roads and Unpaved Parking Lots and Unpaved Staging Areas: An owner, operator, or person subject to this rule shall not allow silt loading equal to or greater than 0.33 oz/ft² for unpaved roads, unpaved

parking lots, and unpaved staging areas. However, if silt loading is equal to or greater than 0.33 oz/ft², the owner, operator, or person subject to this rule shall not allow:

- a. Silt content to exceed 6% for unpaved roads; or
- b. Silt content to exceed 8% for unpaved parking lots and staging areas.

306.5 Stabilization Standards for all other areas: An owner, operator, or person subject to this rule shall stabilize all areas of the facility, excluding unpaved roads, unpaved parking lots, and unpaved staging areas, in order to meet at least one of the standards listed below, as applicable:

- a. Maintain visible soil moisture;
- b. Maintain a soil crust;
- c. Maintain a threshold friction velocity (TFV) for disturbed surface areas corrected for non-erodible elements of 100 cm/second or higher;
- d. Maintain a flat vegetative cover (i.e., attached (rooted) vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind) that is equal to at least 50%;
- e. Maintain a standing vegetative cover (i.e., vegetation that is attached (rooted) with a predominant vertical orientation) that is equal to or greater than 30%;
- f. Maintain a standing vegetative cover (i.e., vegetation that is attached (rooted) with a predominant vertical orientation) that is equal to or greater than 10% and where the threshold friction velocity is equal to or greater than 43 cm/second when corrected for non-erodible elements;
- g. Maintain a percent cover that is equal to or greater than 10% for non-erodible elements; or
- h. Comply with a standard of an alternative test method, upon obtaining the written approval from the Control Officer and the Administrator.
- i. If a facility contains more than one type of visibly distinguishable stabilization characteristics, soil textures, vegetation, or other characteristics, each representative surface area will be evaluated separately for stability, in accordance with the appropriate test methods described in Section 505 of this rule and in Appendix C-Fugitive Dust Test Methods of these rules.

307 FUGITIVE DUST CONTROL MEASURES: An owner, operator, or person subject to this rule shall implement the fugitive dust control measures described in Sections 307.1 through 307.12 of this rule, as applicable. When selecting a fugitive dust control measure(s), an owner, operator, or person subject to this rule may consider the site-specific and/or material-specific conditions and logistics of a facility. When doing so, some fugitive dust control measures may be more reasonable to implement than others. Regardless, any fugitive dust control measure that is implemented must achieve the applicable standard(s) described in Section 306 of this rule, as determined by the corresponding test method(s), as applicable, and must achieve other applicable standard(s) set forth in this rule. An owner, operator, or person subject to this rule may submit a request to the Control Officer and the Administrator for the use of alternative control measure(s). The request shall include the

proposed alternative control measure, the control measure that the alternative would replace, and a detailed statement or report demonstrating that the measure would result in equivalent or better emission control than the measures prescribed in this rule. Nothing in this rule shall be construed to prevent an owner, operator, or person subject to this rule from making such demonstration. Following a decision by the Control Officer and the Administrator to grant the petition, the facility shall incorporate the alternative control measure in any required Dust Control Plan.

307.1 Open Storage Piles and Material Handling: An owner, operator, or person subject to this rule shall implement all of the following fugitive dust control measures, as applicable. For the purpose of this rule, open storage pile(s) and material handling does not include berms that are installed to comply with 30 CFR 56.93000. However, such berms shall be installed and maintained in compliance with Section 306.1, Section 306.2, and Section 306.5 of this rule.

- a. Prior to, and/or while conducting loading, unloading, and excavating operations, implement one of the following fugitive dust control measures:
 - (1) Spray material with water, as necessary; or
 - (2) Spray material with a dust suppressant other than water, as necessary.
- b. When not conducting loading, unloading, and excavating operations, implement one of the following fugitive dust control measures:
 - (1) Spray material with water, as necessary;
 - (2) Maintain a 1.5% or more soil moisture content of the open storage pile(s);
 - (3) Locate open storage pile(s) in a pit/in the bottom of a pit;
 - (4) Arrange open storage pile(s) such that storage pile(s) of larger diameter products are on the perimeter and act as barriers to/for open storage pile(s) that could create fugitive dust emissions;
 - (5) Construct and maintain wind barriers, storage silos, or a three-sided enclosure with walls, whose length is no less than equal to the length of the pile, whose distance from the pile is no more than twice the height of the pile, whose height is equal to the pile height, and whose porosity is no more than 50%;
 - (6) Cover open storage piles with tarps, plastic, or other material to prevent wind from removing the coverings; or
 - (7) Maintain a visible crust.
- c. When installing new open storage pile(s), an owner, operator, or person subject to this rule shall implement all of the following fugitive dust control measures:
 - (1) Install the open storage pile(s) 25 feet or more from the property line. An owner, operator, or person subject to this rule may be allowed to install the open storage pile(s) less than 25 feet from the property line, if the owner, operator, or person subject to this rule can demonstrate to the Control Officer that there is not adequate space to install the open storage pile(s) 25

feet or more from the property line. Such demonstration shall be made in writing and approved by the Control Officer; and

(2) Limit the height of the open storage pile(s) to less than 45 feet.

- d. For any open storage pile(s) that are more than eight feet high and that are not covered, the owner, operator, or person subject to this rule shall install, use, and maintain a water truck or other method that is capable of completely wetting the surfaces of the open storage pile(s).

307.2 Unpaved Parking Lots, Staging Areas, and Areas Where Support Equipment and Vehicles Operate: An owner, operator or person subject to this rule shall implement one of the following fugitive dust control measures on areas other than the areas identified in Section 307.3 and Section 307.4 of this rule where loaders, support equipment, and vehicles operate.

- a. Apply and maintain water;
- b. Apply and maintain a dust suppressant, other than water; or
- c. Apply and maintain a layer of washed gravel that is at least six inches deep.

307.3 Haul/Access Roads that Are Not in Permanent Areas of a Facility:

- a. An owner, operator or person subject to this rule shall implement one of the following fugitive dust control measures, as applicable, before engaging in the use of haul/access roads. Compliance with the provisions of this section of this rule shall not relieve any person subject to the requirements of this section of this rule from complying with any other federally enforceable requirements (i.e., a permit issued under Section 404 of the Clean Water Act).

(1) Install and maintain bumps, humps, or dips for speed control and apply water, as necessary;

(2) Limit vehicle speeds and apply water, as necessary;

(3) Install and maintain a paved surface;

(4) Apply and maintain a layer of washed gravel that is six inches deep;

(5) Apply a dust suppressant, other than water; or

(6) Install and maintain a cohesive hard surface.

- b. For a new facility, if it is determined that none of the fugitive dust control measures described in Section 307.3(a) of this rule can be technically and feasibly implemented, then the owner, operator, or person subject to this rule shall maintain a distance of 25 feet or more between the property line and haul/access roads associated with the new facility. Such determination shall be made and approved in writing by the Control Officer and the Administrator and shall be approved in the Dust Control Plan.

307.4 On-Site Traffic:

- a. An owner, operator, or person subject to this rule shall require all batch trucks and delivery trucks to remain on roads with paved surfaces or cohesive hard surfaces.

- b. An owner, operator, or person subject to this rule shall require all aggregate trucks to remain on paved surfaces or cohesive hard surfaces, except when driving on roads leading to and from aggregate loading areas/loading operations, as approved in the Dust Control Plan.
- c. An owner, operator, or person subject to this rule shall require all batch trucks and delivery trucks to exit the facility/operation only through exits that comply with the trackout control device requirements in Section 307.6 of this rule.
- d. An owner, operator, or person subject to this rule shall pave or install a cohesive hard surface on permanent areas of a facility on which vehicles drive, as approved in the Dust Control Plan.

307.5 Hauling and/or Transporting Bulk Material:

- a. When hauling and/or transporting bulk material off-site, an owner, operator, or person subject to this rule shall implement all of the following control measures:
 - (1) Load all haul trucks such that the freeboard is not less than three inches;
 - (2) Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate(s); and
 - (3) Cover haul trucks with a tarp or other suitable closure.
- b. When hauling and/or transporting bulk material within the boundaries of the facility, an owner, operator, or person subject to this rule shall implement one of the following control measures:
 - (1) Limit vehicle speed to 15 miles per hour or less while traveling within the facility;
 - (2) Apply water to the top of the load; or
 - (3) Cover haul trucks with a tarp or other suitable closure.
- c. When hauling and/or transporting bulk material within the boundaries of a facility and crossing or accessing an area accessible to the public, an owner, operator, or person subject to this rule shall implement all of the following control measures:
 - (1) Load all haul trucks such that the freeboard is not less than three inches;
 - (2) Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate(s); and
 - (3) Cover haul trucks with a tarp or other suitable closure.

307.6 Trackout Control Devices, Trackout, and Spillage:

- a. **Trackout Control Devices for Facilities with 60 or More Trucks Exiting on Any Day:** An owner, operator, or person subject to this rule shall install, maintain, and use a rumble grate and wheel washer, in accordance with all of the following conditions, as applicable at a permanent facility with 60 or more aggregate trucks, mixer trucks, delivery trucks and/or batch trucks exiting the facility on any day onto paved areas accessible to the public.

- (1) An owner, operator, or person subject to this rule shall locate a rumble grate within 10 feet from a wheel washer.
 - (a) The rumble grate and wheel washer shall be located no less than 30 feet prior to each exit that leads to a paved area accessible to the public and that is used by aggregate trucks, mixer trucks, delivery trucks, and/or batch trucks.
 - (b) An owner, operator, or person subject to this rule may be allowed to install a rumble grate and wheel washer less than 30 feet prior to each exit if the owner, operator, or person subject to this rule can demonstrate to the Control Officer that there is not adequate space to install a rumble grate and wheel washer no less than 30 feet prior to each exit and that a rumble grate and wheel washer at a shorter distance will be adequate to prevent trackout.
 - (c) A vehicle wash and/or a cosmetic wash may be substituted for a wheel washer, provided such vehicle wash and/or cosmetic wash has at least 40 pounds per square inch (psi) water spray from the nozzle, meets the definition of wheel washer (i.e., is capable of washing the entire circumference of each wheel of the vehicle), is operated in such a way that visible deposits are removed from the entire circumference of each wheel of the vehicle exiting the wash, is installed, maintained, and used in accordance with criteria in Section 307.6(a)(1)-(6) of this rule, and is approved in the Dust Control Plan for the facility.
 - (2) An owner, operator, or person subject to this rule shall ensure that all aggregate trucks, mixer trucks, delivery trucks, and/or batch trucks exit the facility via the rumble grate first and then the wheel washer.
 - (3) An owner, operator, or person subject to this rule shall post a sign by the rumble grate and wheel washer to designate the speed limit as 5 miles per hour.
 - (4) An owner, operator, or person subject to this rule shall pave the roads from the rumble grate and wheel washer to the facility exits leading to paved areas accessible to the public.
 - (5) An owner, operator, or person subject to this rule shall ensure that all aggregate trucks, mixer trucks, delivery trucks, and/or batch trucks remain on the paved roads between the rumble grate and wheel washer and the facility exits leading to paved areas accessible to the public.
 - (6) An owner, operator, or person subject to this rule shall have a water pressure gauge available on-site to measure nozzle pressure if a vehicle wash and/or cosmetic wash is substituted for a wheel washer.
- b. Trackout Control Devices for Facilities with Less than 60 Trucks Exiting on Any Day:** An owner, operator, or person not subject to Section 307.6(a) of this rule shall install, maintain, and use a rumble grate, wheel washer, or truck washer in accordance with all of the following:

- (1) A rumble grate, wheel washer, or truck washer shall be located no less than 30 feet prior to each exit that leads to a paved area accessible to the public and that is used by aggregate trucks, mixer trucks, delivery trucks, and/or batch trucks.
 - (a) An owner, operator, or person subject to this rule may be allowed to install a rumble grate, wheel washer, or truck washer less than 30 feet prior to each exit if the owner and/or operator of a facility can demonstrate to the Control Officer that there is not adequate space to install a rumble grate, wheel washer, or truck washer no less than 30 feet prior to each exit and that a rumble grate, wheel washer, or truck washer at a shorter distance will be adequate to prevent trackout.
- (2) An owner, operator, or person subject to this rule shall ensure that all aggregate trucks, mixer trucks, delivery trucks, and/or batch trucks exit the facility via a rumble grate, wheel washer, or truck washer.
- (3) An owner, operator, or person subject to this rule shall post a sign by the rumble grate, wheel washer, or truck washer to designate the speed limit as 5 miles per hour.
- (4) If haul/access roads are unpaved between the rumble grate, wheel washer, or truck washer and the facility exits leading to paved areas accessible to the public, a gravel pad shall be installed, maintained, and used from the rumble grate, wheel washer, or truck washer to such paved areas accessible to the public. The gravel pad shall be flushed with water or completely replaced as necessary to comply with the trackout threshold described in Section 307.6(d) of this rule.

c. Exemptions from Trackout Control Device Requirements:

- (1) An owner, operator, or person subject to his rule shall not be required to install, maintain, and use a wheel washer at a facility that has all paved roads and meters aggregate or related materials directly to a ready-mix or hot mix asphalt truck, with the exception of returned products. The owner, operator, or person subject to this rule shall install, maintain, and use a rumble grate.
- (2) An owner, operator, or person subject to his rule shall not be required to install, maintain, and use a wheel washer at a facility that is less than 5 acres in land size and handles recycled asphalt and recycled concrete exclusively. An owner, operator, or person subject to this rule shall install, maintain, and use a rumble grate and a gravel pad on all unpaved roads leading to the facility exits leading to paved areas accessible to the public.
- (3) An owner, operator, or person subject to his rule shall not be required to install, maintain, and use a wheel washer at a facility that has a minimum of $\frac{1}{4}$ mile paved roads leading from a rumble grate to the facility exits leading to paved areas accessible to the public.
- (4) An owner, operator, or person subject to his rule shall not be required to install, maintain, and use a wheel washer at a facility that meets the definition of infrequent operations, as defined in Section 238 of this rule. An owner, operator, or person subject to this rule shall install, maintain, and use a

rumble grate and a gravel pad. The gravel pad shall be installed for a distance of no less than 100 feet from the rumble grate to the facility exits leading to paved areas accessible to the public. An owner, operator, or person subject to this rule shall keep records in accordance with Section 500 of this rule, as applicable. An owner, operator, or person subject to this rule shall notify the Control Officer in the event that the facility will operate more than 52 days per year based on the average rolling 3-year period after June 8, 2005 and the owner, operator, or person subject to this rule shall comply with Section 307.6 of this rule, as applicable.

- (5) An owner, operator, or person subject to this rule shall not be required to install, maintain, or use a wheel washer, rumble grate, or other trackout control device specified in Section 307.6(a)-(b) of this rule, where the only possible fugitive dust release from the facility may be generated from a process that is otherwise vented or controlled through an approved emission control system and provided the following controls are in place:
 - (a) A paved surface is installed and maintained on all internal travel, parking, and vehicle maneuvering areas;
 - (b) All emissions from processes that create dust are captured by an approved emission control system operated in accordance with Section 305.1 of this rule;
 - (c) All dry material storage silos are equipped with an overflow warning system/device and a pressure control system which prevents spillage during silo loading;
 - (d) All material from rail car bottom dumping, for rail car unloading, is contained in areas where no vehicle use or maneuvering is permitted; and
 - (e) All material transfer operations are conducted in a manner that prevents spillage of material to the ground.

d. Trackout Distance:

- (1) An owner, operator, or person subject to this rule shall not allow trackout to extend a cumulative distance of 25 linear feet or more from all facility exits onto paved areas accessible to the public.
- (2) An owner, operator, or person subject to this rule shall clean up all trackout at the end of the work day.

e. Cleaning Paved Roads Identified in the Dust Control Plan: An owner, operator, or person subject to this rule shall clean all paved roads identified in the Dust Control Plan for a facility in accordance with all of the following as applicable:

- (1) An owner, operator, or person subject to this rule at a facility with 60 or more aggregate trucks, mixer trucks, delivery trucks, and/or batch trucks exiting the facility on any day shall sweep the paved roads with a street sweeper by the end of each production work shift, if there is evidence of dirt and/or other bulk material extending a cumulative distance of 12 linear feet or more on any paved road.

- (2) An owner, operator, or person subject to this rule at a facility with less than 60 aggregate trucks, mixer trucks, delivery trucks, and/or batch trucks exiting the facility on any day shall sweep the paved roads with a street sweeper by the end of every other work day, if there is evidence of dirt and/or other bulk material extending a cumulative distance of 12 linear feet or more on any paved road. On the days that paved roads are not swept, if there is evidence of dirt and/or other bulk material extending a cumulative distance of 12 linear feet or more on any paved road, an owner, operator, or person subject to this rule shall remove the dirt and/or other bulk material from the paved internal road by the end of the work day.
 - (3) An owner, operator or person subject to this rule who purchases street sweepers after June 8, 2005, shall purchase street sweepers that meet the criteria of PM₁₀-efficient South Coast Air Quality Management Rule 1186 certified street sweepers.
 - (4) An owner, operator, or person subject to this rule shall use South Coast Air Quality Management Rule 1186 certified street sweepers to sweep paved roads at a new facility.
- f. **Spillage:** An owner, operator, or person subject to this rule shall comply with the following requirements:
- (1) Maintain all spillage in a stabilized condition with dust suppressants until removal.
 - (2) Clean-up all spillage at the end of the work day.
- 307.7 Weed Abatement by Discing or Blading:** An owner, operator, or person subject to this rule shall implement all of the following fugitive dust control measures before, during, and after weed abatement by discing or blading:
- a. Before weed abatement by discing or blading occurs, apply water;
 - b. While weed abatement by discing or blading is occurring, apply water; and
 - c. After weed abatement by discing or blading occurs, pave, apply gravel, apply water, apply a suitable dust suppressant other than water, or establish vegetative ground cover.
- 307.8 Demolition:** An owner, operator, or person subject to this rule shall implement all of the following fugitive dust control measures for demolition activities:
- a. Apply water to demolition debris immediately following demolition activity; and
 - b. After demolition, apply water to all soil surfaces to establish a visible crust and to prevent wind erosion.
- 307.9 Blasting Operations:** An owner, operator, or person subject to this rule shall pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate when conducting blasting operations.
- 307.10 Other Dust-Generating Operations:** An owner, operator, or person subject to this rule shall implement the following control measures, as applicable, when conducting dust-generating operations not specifically listed in Section 307.1 through Section

307.9 of this rule, or when a dust-generating operation is finished for a period of 30 days or longer:

- a. Before disturbed surface areas are created, implement one of the following control measures:
 - (1) Pre-water site to depth of cuts, allowing time for penetration; or
 - (2) Phase work to reduce the amount of disturbed surface areas at any one time.
- b. While disturbed surface areas are being created, implement one of the following control measures:
 - (1) Apply water or other suitable dust suppressant other than water to keep the soil visibly moist;
 - (2) Apply water to maintain a soil moisture content at a minimum of 12%, as determined by ASTM Method D2216-05 or other equivalent method as approved by the Control Officer and the Administrator. For areas that have optimum moisture content for compaction of less than 12%, as determined by ASTM Method D1557-02e1 or other equivalent method approved by the Control Officer and the Administrator, maintain at least 70% of the optimum soil moisture content; or
 - (3) Implement control measures described in Section 307.10(b)(1) or Section 307.10(b)(2) of this rule and construct fences or three-foot to five-foot high wind barriers with 50% or less porosity adjacent to roadways or urban areas to reduce the amount of wind-blown material leaving a site.
- c. When a dust-generating operation is finished for a period of 30 days or longer, the owner, operator, or person subject to this rule shall implement one of the following control measures on the disturbed surface area within ten days after cessation nonmetallic mineral processing, related operations, or any other dust-generating operations.
 - (1) Pave, apply gravel, or apply a suitable dust suppressant other than water;
 - (2) Establish vegetative ground cover;
 - (3) Implement control measures described in Section 307.10(c)(1) or Section 307.10(c)(2) of this rule and restrict vehicle access to the area;
 - (4) Apply water and prevent access by fences, ditches, vegetation, berms, or other suitable barrier or means sufficient to prevent vehicle access as approved by the Control Officer;
 - (5) Restore area such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby undisturbed native conditions.

307.11 Nighttime Operations: An owner, operator or person subject to this rule shall implement, maintain, and use fugitive dust control measures between sunset and sunrise so as to meet all of the applicable requirements in this rule, and shall identify in the Dust Control Plan such fugitive dust control measures.

307.12 Soil Moisture: If water is the chosen control measure in an approved Dust Control Plan, the owner, operator, or person subject to this rule shall operate a water

application system (e.g. a water truck) at the facility while conducting any operations that have the potential to generate fugitive dust emissions, unless a visible crust is maintained or the soil is sufficiently damp to prevent loose grains of soil from becoming dislodged.

308 FACILITY INFORMATION SIGN: An owner, operator, or person subject to this rule shall erect and maintain a facility information sign at the main entrance such that members of the public can easily view and read the sign at all times. Such sign shall have a white background, have black block lettering that is at least four inches high, and shall contain at least all of the following information:

308.1 Facility name and permittee's name;

308.2 Current number of the air quality permit or of authority to operate under a general permit;

308.3 Name and local phone number of person(s) responsible for dust control matters; and

308.4 Text stating: "Dust complaints? Call Maricopa County Air Quality Department - (Insert the accurate Maricopa County Air Quality Department complaint line telephone number)."

309 FUGITIVE DUST CONTROL TECHNICIAN: An owner, operator, or person subject to this rule with a rated or permitted capacity of 25 tons or more of material per hour or with five acres or more of disturbed surface area subject to a permit, whichever is greater, shall have in place a Fugitive Dust Control Technician, who shall meet all of the following qualifications:

309.1 Be authorized by the owner, operator, or person subject to this rule to have full authority to ensure that fugitive dust control measures are implemented on-site and to conduct routine inspections, recordkeeping, and reporting to ensure that all fugitive dust control measures are installed, maintained, and used in compliance with this rule.

309.2 Be trained in accordance with the Comprehensive Dust Control Training Class conducted or approved by the Control Officer, successfully complete, at least once every three years, such Comprehensive Dust Control Training Class, and have a valid dust training certification identification card readily accessible on-site while acting as a Fugitive Dust Control Technician.

309.3 Be authorized by the owner, operator, or person subject to this rule to install, maintain, and use fugitive dust control measures, deploy resources, and shutdown or modify equipment or operations as needed.

309.4 Be on-site at all times during primary dust-generating operations related to the purposes for which the permit was obtained.

309.5 Be certified to determine opacity as visible emissions in accordance with the provisions of the EPA Method 9 as specified in 40 CFR, Part 60, Appendix A.

309.6 Be authorized by the owner, operator, or person subject to this rule to ensure that the site superintendent or other designated on-site representative of the owner,

operator, or person subject to this rule and water truck and water pull drivers for each site be trained in accordance with the Basic Dust Control Training Class conducted or approved by the Control Officer with jurisdiction over the site and successfully complete, at least once every three years, such Basic Dust Control Training Class.

310 BASIC DUST CONTROL TRAINING CLASS:

- 310.1** At least once every three years, the plant manager, foreman, or other designated on-site representative of the permit holder, if present at a site that has more than one acre of disturbed surface area that is subject to a permit issued by the Control Officer requiring control of PM₁₀ emissions from dust-generating operations shall successfully complete a Basic Dust Control Training Class conducted or approved by the Control Officer.
- 310.2** At least once every three years, water truck and water-pull drivers shall successfully complete a Basic Dust Control Training Class conducted or approved by the Control Officer.
- 310.3** Completion of the Comprehensive Dust Control Training Class, as required in Section 309.2 of this rule, shall satisfy the requirement of this section of this rule.
- 310.4** For water truck drivers hired on or after November 7, 2018, basic training is required within 60 days from the date of hire unless such time period is extended by the Control Officer, upon written request, for good cause.

311 DUST CONTROL PLAN:

- 311.1** An owner, operator, or person subject to this rule shall submit, to the Control Officer, a Dust Control Plan that includes, at a minimum, the following information:
 - a.** Name(s), address(es), and phone numbers of person(s) responsible for the submittal and implementation of the Dust Control Plan and responsible for the dust-generating operation.
 - b.** Equipment associated with any process fugitive emissions to be implemented, in order to comply with Sections 301, 302, and 303 of this rule.
 - c.** Fugitive dust control measures to be implemented, in order to comply with Sections 305, 306, and 307 of this rule.
 - d.** Appropriate control measures, or a combination thereof, for every actual and potential source of fugitive dust; and
 - e.** Fugitive dust control measures to be implemented for other affected operations not identified in this rule, as applicable.
 - f.** Installation date of trackout control device, if applicable;
 - g.** Dust suppressants to be applied, including all of the following product specifications or label instructions for approved usage:
 - (1)** Method, frequency, and intensity of application;
 - (2)** Type, number, and capacity of application equipment; and

- (3) Information on environmental impacts and approvals or certifications related to appropriate and safe use for ground application.
 - h. Operation and maintenance procedures for process controls and fugitive dust control measures, including but not limited to, gravel pads, wheel washers, truck washers, rumble grates, watering systems, and street sweepers, that are used to comply with this rule or an air pollution control permit.
 - i. A drawing, on 8½” x 11” paper, that shows all of the following information:
 - (1) Property boundaries and project site boundaries with linear dimensions;
 - (2) Location, linear dimensions, and specific surfaces treatment(s) and/or control measures utilized (i.e., install and maintain a paved surface or a cohesive hard surface) for staging areas, open storage piles, haul/access roads, parking areas, and permanent areas of the facility;
 - (3) Location and type of trackout control device, if applicable;
 - (4) Nearest public roads;
 - (5) North arrow;
 - (6) Planned exit locations onto areas accessible to the public; and
 - (7) Unpaved parking lot(s).
 - j. The method that will be used for soil moisture testing: ASTM C566-97 (2004) “Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying” or Speedy Moisture Meter.
 - k. A process diagram that identifies the progression of material containing aggregate material less than 0.25 inch in diameter through the process and that includes all of the following information:
 - (1) Identification of all screen outlets of aggregate material less than 0.25 inch in diameter;
 - (2) Identification of all crusher outlets of aggregate material less than 0.25 inch in diameter;
 - (3) Identification of all stacker points of aggregate material less than 0.25 inch in diameter;
 - (4) Identification of sample points for soil moisture tests required by Section 312 of this rule; and
 - (5) Identification of the applicable minimum soil moisture content required by Section 301.2(c) of this rule for each sample point for soil moisture tests.
- 311.2** An owner, operator, or person subject to this rule shall submit to the Control Officer a revised Dust Control Plan at each of the following times:
- a. At the time such owner, operator, or person subject to this rule submits an application for an air pollution control permit to the Control Officer;

- b. Prior to commencing dust generating operations, nonmetallic mineral processing, or any related operations in areas of a facility that were not previously identified in the approved Dust Control Plan;
- c. Prior to installing, maintaining, or using new roads (excluding new roads within a pit), new parking areas, or new staging areas that were not previously identified in the approved Dust Control Plan;
- d. Prior to modifying any dust control measures specified in the approved Dust Control Plan;
- e. Prior to implementing changes to the soil moisture testing protocol in the approved Dust Control Plan, except as allowed in Section 312 of this rule; and
- f. Prior to commencing construction or demolition projects that were not previously described in the approved Dust Control Plan.

311.3 The Control Officer shall approve, disapprove, or conditionally approve the Dust Control Plan, in accordance with the criteria used to approve, disapprove or conditionally approve a permit. Failure to comply with the provisions of an approved Dust Control Plan shall be deemed a violation of this rule.

311.4 The Control Officer shall provide written notification to the owner, operator, or person subject to this rule, if the Control Officer determines any of the following:

- a. That a Dust Control Plan is incomplete;
- b. That the Dust Control Plan is conditionally approved; or
- c. That an approved Dust Control Plan has been followed, yet fugitive dust emissions still exceed the standards of this rule and, therefore, a revised Dust Control Plan is required.

311.5 The owner, operator, or person subject to this rule, who receives a notice as described in Section 311.4 of this rule, shall make written revisions to the Dust Control Plan and shall submit such revised Dust Control Plan to the Control Officer within three working days of receipt of the Control Officer's written notice, unless such time period is extended by the Control Officer, upon written request, for good cause. During the time that such owner, operator, or person subject to this rule is preparing revisions to the Dust Control Plan, such owner, operator, or person shall still comply with all requirements of this rule.

311.6 The owner, operator, or person subject to this rule shall keep a complete copy of the approved Dust Control Plan on-site at all times.

311.7 An owner, operator, or person subject to this rule shall make available the approved Dust Control Plan to all contractors and subcontractors at a facility who are engaged in nonmetallic mineral processing or related operations that are subject to this rule.

312 CRUSHING AND SCREENING - MOISTURE TESTING REQUIREMENTS:

312.1 Moisture Testing Procedures: An owner, operator, or person subject to this rule shall conduct moisture tests as follows:

- a. Moisture testing shall be conducted on aggregate material less than 0.25 inch in diameter at the sampling points specified in Section 312.1(a)(1)-(3) of this rule.
- (1) At the beginning of the process line from the feed entering the line;
 - (2) At a point between the initial shaker screen and the final stack point; and
 - (3) From each stacker point or material placed on the stacker conveyor containing aggregate material less than 0.25 inch in diameter.
 - (4) An owner, operator, or person subject to this rule may request in writing that moisture testing be conducted at sampling points other than those specified in Section 312.1(a)(1)-(3). In the request, the owner, operator, or person subject to this rule shall submit to the Control Officer documentation regarding the requested sampling points. The request shall include the following explanation(s): (1) safety issues (i.e., worker exposure to moving equipment) and/or feasibility issues (i.e., guards on transfer points) affecting the sampling location(s), (2) proposed alternative sampling location(s) with explanation that such alternative sampling location(s) will ensure compliance with all other moisture testing procedures in this rule, and (3) identification of such alternative sampling location(s) in the approved Dust Control Plan or in a revision approved to the Dust Control Plan.
 - (5) An owner, operator, or person subject to this rule may request in an application for an air pollution control permit, with explanation, an alternative plan that justifies conducting fewer soil moisture tests. In the request, the owner, operator, or person subject to this rule shall submit to the Control Officer documentation regarding conducting fewer soil moisture tests than are required, including, but not limited to, economics, emissions rates, water availability, and technical feasibility. In addition, the owner, operator, or person subject to this rule shall demonstrate that the proposed alternative compliance demonstration plan will be equivalent in determining compliance with the soil moisture content requirements. Prior approval from the Control Officer and the Administrator shall be received before implementing the plan.
- b. Moisture testing shall be conducted in accordance with the following requirements:
- (1) Moisture testing shall be conducted in accordance with the requirements of ASTM C566-97 (2004) "Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying" with the exception that smaller sample portions may be used.
 - (2) As an alternative to Section 312.1(b)(1) of this rule, an owner, operator, or person subject to this rule may use the Speedy Moisture Meter after receiving written approval from the Control Officer and after submitting to the Control Officer a written request that includes the following information:
 - (a) A description of the alternative testing equipment, including the display range, maintenance requirements, and any limitations;

- (b) A correlation analysis conducted using 20 samples from the Speedy Moisture Meter and the results using ASTM C566-97 (2004). A separate correlation analysis shall be done for each unit (serial number shall be specified);
- (c) A description of the calibration procedures that includes the following information:
 - (i) Calibration of each Speedy Moisture Meter (serial number shall be specified) on at least a biweekly basis against ASTM C566-97 (2004) as a standard;
 - (ii) Identification of at least three sampling points per process line to be used for calibration in the Dust Control Plan required by Section 311 of this Rule. The three sampling points shall be at the beginning of the process line, at a point between the primary shaker and the final stack point, and at the end of the process.
- (d) An agreement to revert to ASTM C566-97 (2004) if the Speedy Moisture Meter results do not correlate with ASTM C566-97 (2004); and
- (e) Modification of the site-specific O&M Plan or Dust Control Plan to include the information described in Sections 312.1(b)(2)(c) and (d) of this rule.

312.2 Moisture Testing Frequency:

- a. If the owner, operator, or person subject to this rule is required to have in place a Fugitive Dust Control Technician according to Section 309 of this rule, then soil moisture tests shall be conducted twice daily.
- b. If the owner, operator, or person subject to this rule is not required to have in place a Fugitive Dust Control Technician according to Section 309 of this rule, then soil moisture tests shall be conducted once daily.
- c. On days when moisture testing is required, an owner, operator, or person subject to this rule shall collect a sample from each location identified in the approved Dust Control Plan within one hour after startup of the crushing and screening operation.
- d. On days when twice daily moisture testing is required, an owner, operator, or person subject to this rule shall collect a sample from each location identified in the approved Dust Control Plan at 3 pm or within one hour before shutdown of the crushing and screening operation.
- e. When crushing and screening operations continue for more than 16 hours on a day when twice daily moisture testing is required, an additional soil moisture sample shall be collected from each sampling location identified in the approved Dust Control Plan such that soil moisture samples are collected no less frequently than once in every 8-hour period.

312.3 Reduction in Moisture Testing Frequency:

- a. If the owner, operator, or person subject to this rule demonstrates that the applicable moisture contents listed in Section 301.2(c) of this rule are maintained

for a minimum of 20 consecutive soil moisture samples collected from each of the sampling locations identified in the approved Dust Control Plan, then soil moisture tests may be conducted weekly in accordance with the test methods described in Section 312.1 of this rule, without prior approval from the Control Officer.

- b. If the owner, operator, or person subject to this rule fails to comply with the opacity limitations described in Sections 301.1, 306.1, or 306.2 of this rule and/or if two consecutive soil moisture tests result in a moisture level below the applicable moisture contents listed in Section 301.2(c) of this rule, then the owner, operator, or person subject to this rule shall resume the sampling frequency specified in Section 312.2 of this rule, as applicable.
- c. Each time a portable crushing operation or a portable screening operation is moved, the owner, operator, or person subject to this rule shall resume the sampling frequency specified in Section 312.2 of this rule, as applicable. The owner, operator or person subject to this rule shall repeat the procedures in Section 312.3(a) of this rule each time the portable crushing or screening operation is moved before reducing the frequency of moisture testing.

312.4 Moisture Testing Exemption: Moisture testing is not required on a crusher and/or screen plant that is enclosed and exhausted to a properly sized fabric filter baghouse.

313 STANDARDS OF PERFORMANCE FOR NONMETALLIC MINERAL PROCESSING: An owner, operator, or person subject to this rule shall comply with all applicable requirements of 40 CFR Part 60 Subpart OOO—Standards of Performance for Nonmetallic Mineral Processing Plants.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE FOR NEWLY AMENDED PROVISIONS OF THIS RULE: The newly amended provisions of this rule shall become effective upon adoption of this rule except as follows:

401.1 Process Controls: Process controls required by Sections 301.2, 302.2, and 303.2 of this rule shall be implemented by February 7, 2019.

401.2 O&M Plan:

- a. If modifications to an O&M Plan are required to achieve compliance with the requirements of this rule, an owner, operator, or person subject to this rule shall revise/update all O&M Plans by February 7, 2019.
- b. The Control Officer shall take final action on an O&M Plan revision/update to address the newly amended provisions of this rule within 30 calendar days of the filing of the complete O&M Plan revision/update. The Control Officer shall notify the applicant in writing of his approval or denial.

401.3 Dust Control Plan:

- a. An owner, operator, or person subject to this rule shall revise/update all Dust Control Plans required by this rule by February 7, 2019.

- b. The owner and/or operator of a new facility shall submit to the Control Officer a Dust Control Plan at the time such owner and/or operator submits a permit application to the Control Officer.
- c. The Control Officer shall take final action on a Dust Control Plan revision/update to address the newly amended provisions of this rule within 30 calendar days of the filing of the complete Dust Control Plan revision/update. The Control Officer shall notify the applicant in writing of his approval or denial.

401.4 Rumble Grates: Rumble grates that are installed or moved on or after November 7, 2018 shall meet the requirements described in Section 260 of this rule. If a rumble grate installed prior to November 7, 2018, as identified by an installation date in the Dust Control Plan, is modified (e.g., rumble grate dividers are raised), such rumble grate is not subject to the requirements in Section 260 of this rule. However, should a source receive two or more violations for trackout during any consecutive 24-month period, then the owner, operator, or person subject to this rule shall meet the requirements described in Section 260 of this rule.

SECTION 500 – MONITORING AND RECORDS

501 MONITORING, RECORDKEEPING AND REPORTING: An owner, operator, or person subject to this rule shall comply with the following requirements. Records shall be retained for five years.

501.1 Operational information required by this rule shall be kept on-site, in written or electronic format, and in a complete and consistent manner and shall be made available without delay to the Control Officer upon request. Paper or electronic copies of records required by this rule shall be made available to the Control Officer upon request.

501.2 Records of the following process and operational information, as applicable, are required:

- a. **General Data:** Daily records shall be kept for all days that process equipment is operating. Records shall include all of the following:
 - (1) Hours of operation;
 - (2) Type of batch operation (wet, dry, central);
 - (3) Throughput per day of materials including sand, aggregate, and cement (tons/day);
 - (4) Volume of concrete produced per day (cubic yards/day) and amount of asphaltic concrete produced per day (tons/day);
 - (5) Amount of aggregate mined per day (tons/day);
 - (6) Amount of each nonmetallic mineral and amount of each dry material delivered per day (tons/day or cubic yards/day);
 - (7) For facilities that assert to be below the thresholds in Section 307.6(a) and Section 307.6(e)(1) of this rule, the number of aggregate trucks, mixer trucks, delivery trucks, and/or batch trucks exiting the facility; and

(8) Description of operating condition of process controls as required in Section 301.2(d) of this rule.

b. Soil Moisture Testing:

- (1) The date, time, and location for each soil moisture sample collected;
- (2) Results of each soil moisture test; and
- (3) Corrective actions taken when soil moisture test results are below the applicable minimum moisture content in Section 301.2(c) of this rule.

501.3 O&M Plan Records: An owner, operator, or person subject to this rule shall maintain all of the following records in accordance with the approved O&M Plan:

a. For Any ECS and Any ECS Monitoring Devices that are Used Under this Rule or Under an Air Pollution Control Permit:

- (1) Periods of time that an approved ECS is operating to comply with this rule;
- (2) Periods of time that an approved ECS is not operating;
- (3) Flow rates;
- (4) Pressure drops;
- (5) Other conditions and operating parameters necessary to determine if the approved ECS is functioning properly;
- (6) Results of visual inspections;
- (7) Correction action taken, if necessary; and
- (8) Dates of all service or maintenance related activities for each approved ECS.

501.4 Dust Control Plan Records: An owner, operator, or person subject to this rule shall compile, maintain, and retain a written record of self-inspection of all fugitive dust control measures implemented, in order to comply with the Dust Control Plan, on each day that any activity capable of generating fugitive dust is conducted at the facility. Self-inspection records shall include daily inspections for crusted or damp soil, trackout conditions and clean-up measures, daily water usage for dust control measures, and dust suppressant application. Such written records shall also include the following information:

- a. Method, frequency, and intensity of application or implementation of the control measures;
- b. Method, frequency, and amount of water application to the site;
- c. Street sweeping frequency;
- d. Types of surface treatments applied to and maintenance of trackout control devices, gravel pads, fences, wind barriers, and tarps;
- e. Types and results of test methods conducted;
- f. If contingency control measures are implemented, actual application or implementation of contingency control measures and why contingency control measures were implemented;

- g. List of subcontractors' names and registration numbers, if applicable, updated when changes are made; and
- h. Names of employee(s) who successfully completed dust control training class(es) required by Sections 309 and 310 of this rule, and the date of the class(es) that such employee(s) successfully completed.

501.5 Basic Dust Control Training Class Records: An owner, operator, or person subject to this rule shall compile, maintain, and retain a written record for each employee subject to Section 310 of this rule. Such written records shall include the name of the employee, the date of the Basic Dust Control Training Class that such employee successfully completed, and the name of the agency/representative who conducted such class.

502 COMPLIANCE DETERMINATION FOR PROCESS EMISSIONS AND

CONTROLS: Compliance determinations for activities regulated by Sections 301 (excluding Section 301.1(b)(3)), 302, and/or 303 of this rule shall be made according to the test methods for those subparts of 40 CFR Part 60, Appendix A, as listed below. Such subparts of 40 CFR Part 60, Appendix A and 40 CFR Part 51, Appendix M are incorporated by reference as indicated. The EPA test methods as they exist in the CFR, as listed below, are incorporated by reference in Appendix G of these rules. This incorporation by reference includes no future editions or amendments. Copies of test methods referenced in Section 502 of this rule are available at the Maricopa County Air Quality Department. When more than one test method is permitted for a compliance determination, then an exceedance of the limits established in this rule, determined by any of the applicable test methods, constitutes a violation of this rule.

502.1 Grain Loading: Particulate matter concentration shall be determined using the applicable EPA Reference Method 5, 40 CFR Part 60, Appendix A.

502.2 Opacity Observations:

- a. Opacity observations to measure visible emissions from activities regulated by Sections 301 (excluding truck dumping directly into any screening operation, feed hopper, or crusher), 302 (excluding truck dumping directly into any screening operation, feed hopper, or crusher), and/or 303 of this rule shall be conducted in accordance with the techniques specified in EPA Reference Method 203B (Visual Determination of Opacity of Emissions from Stationary Sources for Time-Exception Regulations), 40 CFR Part 51, Appendix M. The EPA test methods as they exist in the CFR are incorporated by reference in Appendix G of these rules. Emissions shall not exceed the applicable opacity standards described in Section 301, Section 302, and Section 303 of this rule for a period aggregating more than three minutes in any 60-minute period.

503 COMPLIANCE DETERMINATION FOR EMISSIONS AND CONTROLS THAT ARE REGULATED BY SECTION 301.1(B)(3), SECTION 302.1(E)

AND/OR SECTION 306 OF THIS RULE: To determine compliance with the fugitive dust emission limitations described in Section 301.1(b)(3), Section 302.1(e), and/or Section 306 of this rule, opacity observations shall be conducted in accordance with the techniques specified in Appendix C-Fugitive Dust Test Methods of these rules.

504 COMPLIANCE DETERMINATION FOR SOIL MOISTURE CONTENT AND SOIL COMPACTION CHARACTERISTICS TEST METHODS INCORPORATED BY REFERENCE:

- 504.1** ASTM Method D2216-05 ("Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass"), 2005 edition.
- 504.2** ASTM Method D1557-02e1 ("Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³))), 2002 edition.
- 504.3** ASTM C566-97 (2004) "Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying".

505 COMPLIANCE DETERMINATION FOR STABILIZATION STANDARDS TEST METHODS INCORPORATED BY REFERENCE: The stabilization standards described in Section 306 of this rule shall be determined by using the following test methods in accordance with Appendix C-Fugitive Dust Test Methods of these rules:

- 505.1** Appendix C, Section 2.1.2 (Silt Content Test Method) of these rules to estimate the silt content of the trafficked parts of unpaved roads (not to exceed 6%) and unpaved parking lots (not to exceed 8%).
- 505.2** Appendix C, Section 2.3 (Test Methods for Stabilization-Soil Crust Determination (The Drop Ball Test)) of these rules for a soil crust.
- 505.3** Appendix C, Section 2.4 (Test Methods for Stabilization-Determination of Threshold Friction Velocity (TFV) (Sieving Field Procedure)) of these rules for threshold friction velocity (TFV) corrected for non-erodible elements of 100 cm/second or higher.
- 505.4** Appendix C, Section 2.5 (Test Methods for Stabilization-Determination of Flat Vegetative Cover) of these rules for flat vegetation cover (i.e., attached (rooted) vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind) that is equal to at least 50%.
- 505.5** Appendix C, Section 2.6 (Test Methods for Stabilization-Determination of Standing Vegetative Cover) of these rules for standing vegetation cover (i.e., vegetation that is attached (rooted) with a predominant vertical orientation) that is equal to or greater than 30%.
- 505.6** Appendix C, Section 2.6 (Test Methods for Stabilization-Determination of Standing Vegetative Cover) of these rules for standing vegetation cover (i.e., vegetation that is attached (rooted) with a predominant vertical orientation) that is equal to or greater than 10% and where the threshold friction velocity is equal to or greater than 43 cm/second when corrected for non-erodible elements.
- 505.7** Appendix C, Section 2.7 (Test Methods for Stabilization-Rock Test Method) of these rules for a percent cover that is equal to or greater than 10%, for non-erodible elements.
- 505.8** An alternative test method approved in writing by the Control Officer and the Administrator.

506 CERTIFIED STREET SWEEPING EQUIPMENT LIST INCORPORATED BY REFERENCE: The list of street sweeping equipment (as of July 9, 2004) that has met the South Coast Air Quality Management Rule 1186 certification standards is found in support documents for the South Coast Air Quality Management District Regulation XI-Source Specific Standards, Rule 1186-PM₁₀ Emissions from Paved and Unpaved Roads and Livestock Operations and is incorporated by reference. A copy of the list of certified street sweeping equipment can also be obtained at the Maricopa County Air Quality Department.

REGULATION III - CONTROL OF AIR CONTAMINANTS
RULE 318
APPROVAL OF RESIDENTIAL WOODBURNING DEVICES

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 318
APPROVAL OF RESIDENTIAL WOODBURNING DEVICES**

SECTION 100 - GENERAL

- 101 PURPOSE:** Rule 318 describes the standards for approval of residential woodburning devices.
- 102 APPLICABILITY:** Rule 318 applies to the approval of residential woodburning devices that may be exempted from the restrictions established by the Residential Woodburning Restriction Ordinance.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply:

- 201 APPROVED WOODBURNING DEVICE** - The following residential devices shall be approved woodburning devices, even though such devices may burn a solid fuel other than wood:
- 201.1** A device that has been certified by the Environmental Protection Agency (EPA) as conforming to Phase II EPA Standards for Wood Heaters in 40 Code of Federal Regulations (CFR) 60, Subpart AAA as amended through July 1, 1998.
 - 201.2** Any pellet stove.
 - 201.3** Any gas burning hearth appliances, including a dedicated gas logset permanently installed in any kind of woodburning fireplace.
 - 201.4** Any masonry heater or any other solid fuel burning device that meets performance standards that are equivalent to the standards in 40 CFR 60, Subpart AAA as amended through July 1, 1998, and that is approved by the Control Officer and the Administrator of EPA.
- 202 FIREPLACE** - A chimney-connected, solid fuel or gas burning appliance, with or without glass doors, that is intended primarily for occasional recreational and aesthetic use and only secondarily for incidental or supplemental heating and that ordinarily is permanently installed into the structure of a building.

- 203 MANUFACTURER** - Any person who constructs or imports a residential woodburning device or parts for a residential woodburning device.
- 204 MASONRY HEATER** - A vented, woodburning radiant heating system that is designed to burn rapidly and to capture and store the resultant heat energy in the mass of the appliance through internal heat exchange flue channels. A masonry heater is constructed primarily of masonry materials (brick, stone, tile, concrete, mortar, or refractory), weighs at least 1,754 lbs (800 kgs.), and is either site built or assembled from factory made components.
- 205 PELLET STOVE** - A safety listed appliance, such as an appliance that has been tested in an accredited laboratory (i.e., UL, Warnock Hersey), designed to burn only wood pellets or any naturally pelleted fuel, such as but not limited to, cherry pits, corn, or olive pits. A pellet stove is incapable of burning wood and may or may not be certified under 40 CFR 60.530.
- 206 RESIDENCE** - A residence shall be deemed to include single and multiple dwellings, hotels, motels, dormitories, and mobile homes, and the use of a room or group of rooms for the living, sleeping, and housekeeping activities of persons on a permanent or semi-permanent basis.
- 207 SOLID FUEL** - Includes, but is not limited to, wood, nongaseous fuel, nonliquid fuel, oil, natural gas, electricity, liquid petroleum (LP) gas, and propane.
- 208 WOODSTOVE, WOODHEATER, OR CONVENTIONAL WOODSTOVE** - A wood heating appliance, either free-standing or inserted into a fireplace, belonging to a model line that is not an EPA-certified model line. A woodstove, woodheater, or conventional woodstove does not include a barbecue device, a cookstove, a boiler, nor a furnace, as defined in 40 CFR 60.530(c).

SECTION 300 - STANDARDS

- 301 DESCRIPTION OF RESIDENTIAL DEVICES APPROVED FOR BURNING WOOD:** Effective September 30, 1994, the following residential devices shall be approved for burning wood, even though such devices may burn a solid fuel other than wood:
- 301.1** A device that has been certified by EPA as conforming to Phase II EPA Standards for Wood Heaters in 40 CFR 60, Subpart AAA as amended through July 1, 1998.
- 301.2** Any pellet stove.
- 301.3** Any gas burning hearth appliances, including a dedicated gas logset permanently installed in any kind of woodburning fireplace.
- 301.4** Any masonry heater or any other solid fuel burning device that meets performance standards that are equivalent to the standards in 40 CFR 60,

Subpart AAA as amended through July 1, 1998, and that is approved by the Control Officer and the Administrator of EPA.

302 REQUIRED INFORMATION FOR MASONRY HEATERS AND ANY OTHER RESIDENTIAL SOLID FUEL BURNING DEVICES: The manufacturer, operator, and/or installer of any device described in subsection 301.4 of this rule shall provide to the Control Officer:

- 302.1** An affidavit that attests that the device has been certified by another air pollution control agency, provided the certification procedures and testing protocols used by that agency are determined by the Control Officer and the Administrator of EPA to be substantially equivalent to the certification procedures and testing protocols used by the Northern Sonoma County Air Pollution Control District; and
- 302.2** All other information determined by the Control Officer and the Administrator of EPA to be needed for an adequate evaluation of the device.

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS**

**RULE 322
POWER PLANT OPERATIONS**

SECTION 100 – GENERAL

- 101 PURPOSE:** To limit the discharge of nitrogen oxides, sulfur oxides, particulate matter and carbon monoxide emissions into the atmosphere from stationary fossil-fuel-fired electric utility stationary gas turbines, stationary fossil-fuel-fired electric utility steam generating units, and stationary fossil-fuel-fired cogeneration steam generating units and to limit particulate matter emissions from cooling towers associated with this equipment.
- 102 APPLICABILITY:** This rule applies to the following types of equipment that burn fossil fuel:
- 102.1** Each electric utility steam generating unit or cogeneration steam generating unit used to generate electric power that has a rated heat input capacity greater than or equal to 100 million (MM) British thermal units per hour (Btu/hour) based upon the lower heating value of the fuel.
- 102.2** Each electric utility stationary gas turbine with a rated heat input capacity at peak load greater than or equal to 10 MMBtu/hour based upon the lower heating value of the fuel.
- 102.3** Each cooling tower associated with the type of equipment listed in Sections 102.1 and 102.2 of this rule.
- 102.4 NSPS & NESHAP:** In addition to this rule, facilities may be subject to New Source Performance Standards (NSPS) in Rule 360 and/or National Emission Standards for Hazardous Air Pollutants (NESHAP) in Rule 370 of these rules.
- 103 EXEMPTIONS:** This rule shall not apply to the following types of equipment:
- 103.1** Combustion equipment associated with nuclear power plant operations; or
- 103.2** Reciprocating internal combustion engines.
- 104 PARTIAL EXEMPTIONS:**
- 104.1** Stationary gas turbines that meet any of the criteria listed below are exempt from Sections 301, 306, 307, 501.4, 503.3, 503.4, 503.5, and 503.6 of this rule:
- a. Used for fire-fighting
 - b. Used for flood control
 - c. Engaged by manufacturers in research and development of equipment for either gas turbine emission control techniques or gas turbine efficiency improvements

- 104.2** While firing emergency fuel during a natural gas curtailment or natural gas emergency, any equipment listed in Section 102 of this rule that is normally fired with natural gas is exempt from Sections 301, 306, 307, 501.4, 503.3, 503.4, 503.5, and 503.6 of this rule. This exemption shall not exceed 168 hours per calendar year per combustion unit, excluding hours of operation for testing, reliability, training, and maintenance.
- 104.3** While firing emergency fuel for purposes of testing, reliability, training and maintenance, any equipment listed in Section 102 of this rule that is normally fired with natural gas is exempt from Sections 301, 306, 307, 501.4, 503.3, 503.4, 503.5, and 503.6 of this rule. This exemption shall not exceed 36 hours per calendar year per combustion unit, excluding hours of operation during natural gas curtailments and natural gas emergencies.
- 104.4** Any equipment listed in Section 102 of this rule that operates at or below 10 percent calendar year annual capacity factor, and meets the requirements in 104.4 a, b, and c is exempt from Sections 306 and 307 of this rule.
- a.** An owner or operator must submit a RACT analysis to the Control Officer and the Administrator demonstrating conventional commercially-available control technology is not technically and/or economically feasible and obtain approval from the Control Officer and Administrator to operate under the exemption.
 - (1)** For equipment for which a RACT analysis was submitted prior to June 23, 2021, upon Control Officer approval, equipment may begin to operate under the exemption until the Administrator approves or denies operation under the exemption. If the Administrator denies approval to operate under the exemption, the equipment will become subject to the emission limits in Sections 306 and 307.
 - (2)** For equipment for which a RACT analysis is submitted on or after June 23, 2021, equipment may begin to operate under the exemption upon approval from the Control Officer and the Administrator.
 - b.** All equipment operated under this exemption shall have an annual heat input limit associated with that equipment that corresponds to the 10 percent calendar year annual capacity factor. The annual heat input limit shall be calculated by multiplying the equipment's maximum heat input rate (MMBtu per hour) by 876 hours. An owner or operator with equipment approved to operate under the exemption shall submit an application to modify the permit associated with the equipment to include an annual heat input limit within 60 days of the Control Officer's approval.
 - c.** To demonstrate compliance with the heat input limit an owner or operator shall multiply the higher heating value (MMBtu/mass or MMBtu/volume of gas) by the fuel use (mass or volume of gas).

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

- 201 ANNUAL CAPACITY FACTOR:** The ratio between the actual heat input to a stationary gas turbine or steam generating unit from the fuels burned during a calendar year and the potential heat input to the stationary gas turbine or steam generating unit had it been operated for 8,760 hours at the maximum rated heat input capacity.
- 202 COGENERATION STEAM GENERATING UNIT:** A steam or hot water generating unit that simultaneously produces both electrical and useful thermal energy (such as heat or steam) from the same primary energy source and supplies more than one-third of its potential electric output to any utility power distribution system for sale.
- 203 COMBINED CYCLE TURBINE SYSTEM:** A type of stationary gas turbine wherein heat from the turbine exhaust is recovered by a steam generating unit, with or without supplemental heat (i.e. duct burner), to make steam for use in a steam-electric turbine.
- 204 COMBUSTION CONTROL SYSTEM:** Equipment or technology that suppress NO_x formation during combustion of fossil fuels, including but not limited to, water injection or low-NO_x burners.
- 205 CONTINUOUS EMISSION MONITORING SYSTEM (CEMS):** The total equipment required to sample, analyze, measure, and provide a permanent record of emissions by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)).
- 206 COOLING TOWERS:** Open water recirculating devices that use fans or natural draft to draw or force air through the device to cool water by evaporation and direct contact.
- 207 DRIFT:** Water droplets, bubbles, and particulate matter that escape from cooling tower stacks.
- 208 DRIFT ELIMINATOR:** Device used to remove drift from cooling tower exhaust air, thus reducing water loss by relying on rapid changes in velocity and direction of air-droplet mixtures by impaction on eliminator passage surfaces. A drift eliminator is not categorized as an emission control system but is an inherent part of the cooling tower's design requirements.
- 209 DRIFT RATE:** Percentage (%) of circulating water flow rate that passes through a drift eliminator on a cooling tower.
- 210 ELECTRIC UTILITY STATIONARY GAS TURBINE:** Any stationary gas turbine that is constructed for the purpose of supplying more than 1/3 of its potential electric output capacity to any utility power distribution system for sale.
- 211 ELECTRIC UTILITY STEAM GENERATING UNIT:** Any equipment that combusts fossil fuel to generate steam that is used to drive an electrical generator and is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electric output to any utility power distribution system for sale.
- 212 EMERGENCY FUEL:** Fuel fired only during circumstances such as natural gas emergency, natural gas curtailment, or breakdown of delivery system such as an unavoidable

interruption of supply that makes it impossible to fire natural gas in the unit. Fuel is not considered emergency fuel if it is used to avoid either peak demand charges or high gas prices during on-peak price periods or due to a voluntary reduction in natural gas usage by the power company. For the purposes of this definition, emergency fuel also includes fuel used for purposes of testing, reliability, training, and maintenance.

- 213 EMISSION CONTROL SYSTEM (ECS):** Post-combustion systems that are designed and operated in accordance with good engineering practice to reduce emissions from combustion equipment. A combustion control system is not an emission control system.
- 214 FOSSIL FUEL:** Naturally occurring carbonaceous substances from the ground such as natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such material for the purpose of creating energy.
- 215 FUEL SWITCHING STARTUP PROCESS:** The act of changing from one type of fuel to a different type of fuel.
- 216 HEAT INPUT:** Heat derived from the combustion of fuel, not including the heat input from preheated combustion air, recirculated flue gases, or exhaust gases from other sources, such as gas turbines, internal combustion engines, and kilns.
- 217 HIGHER HEATING VALUE (HHV) OR GROSS HEATING VALUE:** The amount of heat produced by the complete combustion of a unit quantity of fuel determined by a calorimeter wherein the combustion products are cooled to the temperature existing before combustion and all of the water vapor is condensed to liquid.
- 218 LOW SULFUR OIL:** Fuel oil containing less than or equal to 0.05% by weight of sulfur.
- 219 LOWER HEATING VALUE (LHV) OR NET HEATING VALUE:** The amount of heat produced by the complete combustion of a unit quantity of fuel determined by a calorimeter wherein the combustion products are cooled to the temperature existing before combustion and all of the water vapor remains as vapor and is not condensed to a liquid. The value is computed from the higher heating value by subtracting the water originally present as moisture and the water formed by combustion of the fuel.
- 220 NATURAL GAS:** A naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions and contains 20 grains or less of total sulfur per 100 standard cubic feet.
- 221 NATURAL GAS CURTAILMENT:** An interruption in natural gas service, such that the daily fuel needs of a combustion unit cannot be met with natural gas available due to one of the following reasons, beyond the control of the owner or operator:
- 221.1** An unforeseeable failure or malfunction, not resulting from an intentional act or omission that the governing state, federal or local agency finds to be due to an act of gross negligence on the part of the owner or operator; or
 - 221.2** A natural disaster; or

- 221.3 The natural gas is curtailed pursuant to governing state, federal or local agency rules or orders; or
- 221.4 The serving natural gas supplier provides notice to the owner or operator that, with forecasted natural gas supplies and demands, natural gas service is expected to be curtailed pursuant to governing state, federal or local agency rules or orders.
- 222 **OPACITY:** A condition of the ambient air, or any part thereof, in which an air contaminant partially or wholly obscures the view of an observer.
- 223 **OPERATING DAY:** A 24-hour period between 0000 and 2359 during which any fuel is combusted at any time in the unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.
- 224 **OPERATING HOUR:** A clock hour during which a unit combusts any fuel, either for part of the hour or for the entire hour.
- 225 **PARTICULATE MATTER EMISSIONS:** Any and all particulate matter emitted to the ambient air as measured by applicable state and federal test methods.
- 226 **PARTS PER MILLION BY VOLUME DRY (PPMVD):** A unit of proportion used to express concentration that is corrected to a dry basis.
- 227 **PEAK LOAD:** 100% of the manufacturer's design capacity of a gas turbine at 288° Kelvin, 60% relative humidity, and 101.3 kilopascals pressure (ISO standard day conditions).
- 228 **POWER PLANT OPERATION:** An operation whose purpose is to supply more than one-third of its potential electric output capacity to any utility power distribution system for sale.
- 229 **RATED HEAT INPUT CAPACITY:** The heat input capacity in million Btu/hr. as specified on the nameplate of the combustion unit. If the combustion unit has been altered or modified such that its maximum heat input is different than the heat input capacity on the name plate, the maximum heat input shall be considered the rated heat input capacity.
- 230 **REGENERATIVE CYCLE GAS TURBINE:** Any stationary gas turbine that recovers thermal energy from the exhaust gases and utilizes the thermal energy to preheat air prior to entering the combustion unit.
- 231 **SIMPLE CYCLE GAS TURBINE:** Any stationary gas turbine that does not recover heat from the gas turbine exhaust gases to preheat the inlet combustion air to the gas turbine and does not recover heat from the gas turbine exhaust gases to heat water or generate steam.
- 232 **STATIONARY GAS TURBINE:** Any simple cycle gas turbine, regenerative gas turbine, or any gas turbine portion of a combined cycle turbine system that is not self-propelled or that is attached to a foundation.
- 233 **SULFUR OXIDES (SO_x):** The sum of the oxides of sulfur emitted from the flue gas from a combustion unit that are directly dependent upon the amount of sulfur in the fuel used.

- 234 **THIRTY (30) OPERATING DAY ROLLING AVERAGE:** An arithmetic mean or average of all hourly emission concentrations for 30 successive operating days and calculated by a CEMS at the conclusion of each operating day for the previous 30 operating days.
- 235 **TOTAL DISSOLVED SOLIDS (TDS):** The amount of filterable matter reported in milligrams/liter (mg/l) or parts per million (ppm), as determined by an applicable method in the Standard Methods for the Examination of Water and Wastewater, a conductivity/TDS meter, or ASTM D5907.
- 236 **TWENTY-FOUR (24) HOUR ROLLING AVERAGE:** The arithmetic mean of all hourly emission concentrations measured during the previous 24 operating hours.
- 237 **ULTRA LOW SULFUR OIL:** Fuel oil containing less than or equal to 0.0015 % sulfur by weight.
- 238 **UNCOMBINED WATER:** Condensed water vapor or steam.

SECTION 300 – STANDARDS

- 301 **LIMITATIONS – PARTICULATE MATTER:** An owner or operator of any equipment listed in Section 102.1 or 102.2 of this rule shall burn only natural gas except when firing emergency fuel per Sections 104.2 and 104.3 of this rule. An owner or operator may burn a fuel other than natural gas for non-emergency purposes providing that the fuel shall not cause to be discharged more than 0.007 lbs. of particulate matter per MMBtu. The use of a fuel other than natural gas for non-emergency purposes shall be approved by the Control Officer in an air pollution control permit prior to usage.
- 302 **GOOD COMBUSTION PRACTICES FOR TURBINES:** An owner or operator of any stationary gas turbine listed in Section 102.2 of this rule shall, regardless of fuel type, use operational practices recommended by the manufacturer to ensure good combustion control.
- 302.1 Good combustion practices shall be demonstrated by maintaining the manufacturer's recommended maintenance practices onsite and available to the Control Officer upon request, by maintaining records of all maintenance activities conducted on the turbines, and by conducting performance tests as described in Section 503 (unless exempt from Sections 306 and 307 under the exemption in Section 104.4).
- 302.2 For stationary gas turbines with a CEMS able to demonstrate compliance with the applicable emission limits in Sections 306 and 307, good combustion practices may be demonstrated through continuous compliance with the applicable emission limits in Sections 306 and 307.
- 303 **COOLING TOWERS:** An owner or operator of a cooling tower listed in Section 102.3 of this rule shall:
- 303.1 Equip the cooling tower with a drift eliminator. The drift eliminator shall not be manufactured out of wood.
- 303.2 Limit the value obtained by multiplying the concentration of Total Dissolved Solids (TDS) in the cooling tower water by the percentage of drift rate for the cooling

tower drift eliminator such that the product does not exceed the maximum numerical limit of 20 ppm.

303.3 Visually inspect the drift eliminator according to the following schedule, as applicable depending on the configuration of the drift eliminator:

- a. Monthly, if the drift eliminator can be viewed safely and if the inspection does not require a person to walk into the cooling tower; or
- b. No less than once per year during a regularly scheduled outage when the cooling tower is not operating, if the drift eliminator cannot be safely inspected while the cooling tower is operating.

304 LIMITATIONS – OPACITY:

304.1 An owner or operator shall not discharge into the ambient air from any single source of emissions any air contaminant, other than uncombined water, in excess of 20% opacity, for any six (6) minute averaging period, except as provided in Section 304.2 of this rule.

304.2 Opacity may exceed the applicable limits established in Section 304.1 of this rule during the one hour fuel switching startup process, provided that the Control Officer finds that the owner or operator has, to the extent practicable, maintained and operated the source of emissions in a manner consistent with good air pollution control practices for minimizing emissions. During the one-hour fuel switching startup process, an owner or operator shall not discharge into the ambient air from any single source of emissions any air contaminant, other than uncombined water, in excess of 40% opacity, for any six (6) minute averaging period. The one-hour period shall begin when the fuel switching startup process begins.

304.3 Determination of whether good air pollution control practices are being used shall be based on information provided to the Control Officer upon request, which may include, but is not limited to, the following:

- a. Monitoring results.
- b. Opacity observations.
- c. Review of operating and maintenance procedures.
- d. Inspection of the source.

305 LIMITATIONS – SULFUR IN FUEL: An owner or operator of any equipment listed in Section 102.1 or 102.2 of this rule that burns fuel oil alone or in combination with any other fuel as either emergency fuel or non-emergency fuel shall use either ultra low sulfur oil or low sulfur oil.

306 LIMITATIONS – NITROGEN OXIDES (NO_x):

306.1 RACT Emission Limits:

- a. Existing Steam Generating Units: An owner or operator of any equipment listed in Section 102.1 of this rule that commenced operation prior to June 23, 2021 shall not cause to be discharged into the atmosphere nitrogen oxides in excess of 0.1 lb/MMBtu, calculated as nitrogen dioxide, unless the equipment is operated in

compliance with the case-by-case RACT requirements established in accordance with Section 306.2 of this rule.

- b. New Steam Generating Units: An owner or operator of any equipment listed in Section 102.1 of this rule that commenced operation on or after June 23, 2021 shall not cause to be discharged into the atmosphere nitrogen oxides in excess of the following limits, unless the equipment is operated in compliance with the case-by-case RACT requirements established in accordance with Section 306.2 of this rule.
 - (1) 30 ppmvd corrected to 3% oxygen calculated as nitrogen dioxide when burning gaseous fossil fuel.
 - (2) 40 ppmvd corrected to 3% oxygen calculated as nitrogen dioxide when burning liquid fossil fuel.
- c. Stationary Gas Turbines and Combined Cycle Turbine Systems: An owner or operator of any equipment listed in Section 102.2 of this rule shall not cause to be discharged into the atmosphere nitrogen oxides in excess of the following limits, unless the equipment is operated in compliance with the case-by-case RACT requirements established in accordance with Section 306.2 of this rule.
 - (1) 42 ppmvd corrected to 15% oxygen calculated as nitrogen dioxide when burning gaseous fossil fuel.
 - (2) 65 ppmvd corrected to 15% oxygen calculated as nitrogen dioxide when burning liquid fossil fuel.

306.2 Case-by-Case RACT Requirements: Nothing in this rule shall prevent the owner or operator of any equipment listed in Section 102 of this rule from requesting alternative RACT requirements on a case-by-case basis. An owner or operator shall be exempt from Section 306.1 if the owner or operator fully complies with alternative RACT requirements that are approved by the Control Officer and the Administrator, incorporated into an Air Pollution Control Permit, and approved into the Arizona State Implementation Plan.

307 LIMITATIONS – CARBON MONOXIDE: An owner or operator of any equipment listed in Section 102.1 or 102.2 of this rule shall not cause to be discharged into the atmosphere carbon monoxide (CO) measured in excess of 400 ppmvd corrected to 15% oxygen for stationary gas turbines, and corrected to 3% oxygen for steam generating units.

308 REQUIREMENTS FOR ECS AND ECS MONITORING EQUIPMENT: An owner or operator of an emission control system (ECS) shall:

308.1 Properly install, operate, and maintain in calibration and in good working order devices for indicating temperatures, pressures, transfer rates, rates of flow, or other operating conditions necessary to determine if an ECS is functioning properly and is properly maintained.

308.2 Submit to the Control Officer for approval an Operation and Maintenance (O&M) Plan for any ECS, and any ECS monitoring devices that are used pursuant to this rule or to an air pollution permit. The O&M Plan shall include:

- a. The manufacturer name, model designation, and serial number for each ECS and each ECS monitoring device; and
 - b. Operating parameters that will be monitored to demonstrate continued operation of the ECS in the manner the ECS was operated during the most recent performance test; and
 - c. The manufacturer's recommended maintenance procedures and frequencies or, if the manufacturer's recommended maintenance procedures are not available, a maintenance plan based on good engineering practices to reduce emissions.
- 308.3** Fully comply with all elements of the most recent O&M Plans submitted to the Control Officer, unless notified by the Control Officer in writing.
- 308.4** Submit a revised O&M Plan within 30 business days following receipt of the Control Officer's written notice that an O&M Plan for any ECS or any ECS monitoring device is deficient or inadequate.
- 308.5** Maintain on-site, in a readily accessible location, the most recent O&M Plans for each ECS and each ECS monitoring device.

309 **EMERGENCY FUEL USE NOTIFICATION:** An owner or operator of an electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power that is fired with emergency fuel but is normally fired with natural gas shall notify the Control Officer verbally no later than 24 hours after declaration of the emergency that necessitates its use in compliance with Section 104.2 of this rule. This verbal report shall be followed by a written report within 48 hours of initial emergency fuel usage. The written report shall also include identification of the nature of the emergency, initial dates of usage, and the expected dates of usage. Within 1 business day following the end of an emergency that necessitates the use of emergency fuel, the owner or operator shall submit a written report that includes the total number of hours the combustion equipment was operated with emergency fuel.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

- 401** **IN EXISTENCE AND IN COMPLIANCE:** The owner or operator of any electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power in existence on June 23, 2021 shall submit a Notification of Compliance within 6 months of becoming subject to Section 306 of this rule. This Notification shall include one of the following demonstrations:
- 401.1** **Demonstration of Compliance with RACT Emission Limits:** For each unit that is in compliance with the RACT emission limits in Section 306.1 of this rule, the Notification of Compliance shall include results from a performance test conducted in accordance with Section 503.4 of this rule, or that a CEMS has been installed (to demonstrate continuous compliance with the RACT emission limits), after June 23, 2020.
 - 401.2** **Demonstration of Compliance with the exemption in Section 104.4:** For each unit that operates at or below 10 percent calendar year annual capacity factor, the Notification of Compliance shall include records of the annual capacity factor for the calendar year previous to the year of rule adoption.

402 IN EXISTENCE AND NON-COMPLIANT:

402.1 Increments of Progress – Installation of Air Pollution Control Equipment:

When an emission control system or a combustion control system will be installed to achieve compliance with the emission limits in Section 306.1 of this rule, the owner or operator shall comply with the following increments of progress and be in compliance with the emission limits by the date specified:

- a. Within 18 months of becoming subject to the emission limits in Section 306.1 of this rule, submit a compliance schedule and permit application to the Control Officer.
- b. Within 36 months of final permit issuance, be fully compliant with the emission limits in Section 306.1 of this rule and submit to the Control Officer a complete source test report indicating compliance.

402.2 Increments of Progress – Removal from Service: The owner or operator of any combustion unit in existence on June 23, 2021 that is expected to be removed from service within 24 months of becoming subject to Section 306.1 of this rule shall be exempt from the emission limits in Section 306.1 of this rule if it complies with the following:

- a. Within 6 months of becoming subject to the limits in Section 306.1 of this rule, submit to the Control Officer a notification of proposed removal from service.
- b. Within 14 months of submitting notification under Section 402.2(a) of this rule, submit to the Control Officer a decommissioning plan and a permit revision providing that the units will be decommissioned by a certain date.
- c. Within 4 months of decommissioning plan and permit revision approval, or within 24 months after becoming subject to the emission limits in Section 306.1 of this rule, whichever comes first, discontinue operation of the electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power, disconnect the fuel supply line(s), and notify the Control Officer in writing of the removal from service.

SECTION 500 – MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING: Any owner or operator subject to this rule shall comply with the requirements set forth in this section. Any records and data required by this section shall be kept on site at all times in a consistent and complete manner and be made available without delay to the Control Officer upon request. Records shall consist of the following information:

501.1 Equipment Listed in Section 102 of this Rule: Days and hours of operation, type(s) of fuel used, amount of fuel(s) used each month, and documentation of the sulfur content of any fuel oil combusted (e.g. fuel receipts, contract specifications, pipeline meter tickets, fuel supplier information, purchase records, or analytical results). Records of sulfur content shall provide accurate values for the sulfur content of the fuel based on enforceable test methods approved by the Administrator.

501.2 Cooling Towers: Monthly gravimetric testing reports for TDS in cooling water in the cooling tower shall be recorded for six months in succession and thereafter quarterly

reports shall be recorded. Results of the monthly or yearly visual inspection of the drift eliminator shall also be recorded. If the drift eliminator cannot be visually inspected monthly, then documentation of the physical configuration of the drift eliminator shall be submitted to the Control Officer to demonstrate that the drift eliminator cannot be inspected monthly.

501.3 Emergency Fuel Usage: Type and amount of emergency fuel used, dates and hours of operation using emergency fuel, nature of the emergency or reason for the use of emergency fuel as stated in Sections 104.2 and 104.3 of this rule. At the end of each month, calculate the total hours of operation using emergency fuel during natural gas curtailments and natural gas emergencies, and total hours of operation using emergency fuel for purposes of testing, reliability, training, and maintenance.

501.4 Non-Emergency Fuel Switching: Dates and times, including start and stop times, when any fuel other than natural gas is combusted for non-emergency purposes, as allowed by Section 301 of this rule.

501.5 Continuous Emission Monitoring Systems: All CEMS measurements, results of CEMS performance evaluations, CEMS calibration checks, and adjustments and maintenance performed on these systems.

501.6 Good Combustion Practices:

- a. Good combustion practices shall be demonstrated by maintaining the manufacturer's recommended maintenance practices onsite and available to the Control Officer upon request, by maintaining records of all maintenance activities conducted on the turbines, and by maintaining records of the test results of performance tests conducted under Section 503 (unless exempt from Sections 306 and 307 under the exemption in Section 104.4).
- b. If using CEMS to demonstrate good combustion practices, results of evaluation and of corrective action shall be recorded each time the CEMS indicates an exceedance of the applicable emission limits in Section 306 or 307 of this rule.
- c. For units equipped with water or steam injection, the owner or operator shall maintain continuous records of the water to fuel ratio or the steam to fuel ratio, unless the owner or operator uses CEMS to demonstrate compliance with the emission limits in Sections 306 and 307, as applicable.

502 RECORDS RETENTION: Copies of reports, logs, and supporting documentation required by the Control Officer shall be retained for at least 5 years. Records and information required by this rule shall also be retained for at least 5 years.

503 COMPLIANCE DEMONSTRATION:

503.1 Sulfur Content of the Oil Verification: If the Control Officer requests documentation of the sulfur content of the oil, the owner or operator shall submit one of the following documents which provides the accurate sulfur content of the fuel based on enforceable test methods as approved by the Administrator to determine sulfur content:

- a. Fuel receipts, or

- b. Contract specifications, or
- c. Pipeline meter tickets, or
- d. Fuel supplier information, or
- e. Purchase records, or
- f. Test results of the fuel for sulfur content.

503.2 Drift Rate Verification: An owner or operator shall submit design drift rate verification from the manufacturer of the drift eliminator used in the cooling towers to the Control Officer if proof of the design drift rate is requested by the Control Officer.

503.3 Performance Test-Particulate Matter: An owner or operator of any combustion equipment listed in Section 102 of this rule that burns a fuel other than natural gas for non-emergency purposes shall demonstrate compliance with the emission limit in Section 301 of this rule by conducting an annual performance test. The performance test shall measure particulate matter emissions, including condensable particulate matter emissions, using EPA Reference Method 5 and EPA Reference Method 202, as incorporated by reference in Section 504 of this rule. The result of the performance test shall be the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour.

503.4 Performance Test-Nitrogen Oxides: An owner or operator of any equipment listed in Section 102.1 or 102.2 of this rule that is subject to a numeric emission limit in Section 306 of this rule shall demonstrate compliance with the applicable numeric emission limits by conducting an annual performance test. The performance tests shall measure nitrogen oxide emissions using EPA Reference Method 7 or 7E as incorporated by reference in Section 504 of this rule. The result of the performance test shall be the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour. The concentration of nitrogen oxides shall be measured dry and corrected to 3% oxygen for electric utility steam generating units and cogeneration steam generating units. The concentration of nitrogen oxides shall be measured dry and corrected to 15% oxygen for stationary gas turbines and for combined cycle turbine systems. For units that are equipped with water or steam injection, the ratio of water or steam to fuel shall be measured during the performance test.

- a. For any equipment for which a CEMS is used to demonstrate compliance with Section 306, an annual performance test is not required.
- b. If the NO_x emission result from the performance test is less than or equal to 75 percent of the NO_x emission limit, the owner or operator may reduce the frequency of subsequent performance tests to once every 2 years (no more than 26 calendar months following the previous performance test). If the results of any subsequent performance test exceed 75 percent of the NO_x emission limit, the owner or operator must resume annual performance tests.

503.5 Performance Test-Carbon Monoxide: An owner or operator of any equipment listed in Section 102.1 or 102.2 of this rule that is subject to Section 307 of this rule shall demonstrate compliance with the emission limit in Section 307 of this rule by

conducting an annual performance test. The performance test shall measure carbon monoxide emissions using EPA Reference Method 10 as incorporated by reference in Section 504 of this rule. The result of the performance test shall be the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour. The carbon monoxide concentration shall be measured dry and corrected to 3% oxygen for electric utility steam generating units and cogeneration steam generating units. The carbon monoxide concentration shall be measured dry and corrected to 15% oxygen for stationary gas turbines and for combined cycle turbine systems.

- a. For any equipment for which a CEMS is used to demonstrate compliance with Section 307, an annual performance test is not required.
- b. If the CO emission result from the performance test is less than or equal to 75 percent of the CO emission limit, the owner or operator may reduce the frequency of subsequent performance tests to once every 2 years (no more than 26 calendar months following the previous performance test). If the results of any subsequent performance test exceed 75 percent of the emission limit, the owner or operator must resume annual performance tests.

503.6 CEMS: An owner or operator using a CEMS to demonstrate compliance with Section 302, 306, or 307 shall install, operate, calibrate, maintain, and test the CEMS in accordance with 40 CFR Part 60 or 40 CFR Part 75.

- a. Excess emissions for Section 306 are defined as any period during which the 24-hour rolling average emission concentration exceeds the applicable numeric emission limits.
- b. Excess emissions for Section 307 are defined as any period during which the 30-operating day rolling average emission concentration exceeds the applicable numeric emission limits.

504 COMPLIANCE DETERMINATION – TEST METHODS INCORPORATED BY REFERENCE: The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods are incorporated by reference in Rule 360 and Appendix G of the Maricopa County Air Pollution Control Regulations. Alternative test methods as approved by the Administrator or other EPA-approved test methods may be used upon prior written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method will constitute a violation. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department.

504.1 EPA Reference Methods 1 (“Sample and Velocity Traverses for Stationary Sources”), and 1A (“Sample and Velocity Traverses for Stationary Sources with Small Stacks and Ducts”) (40 CFR 60, Appendix A-1).

504.2 EPA Reference Methods 2 (“Determination of Stack Gas Velocity and Volumetric Flow Rate”), 2A (“Direct Measurement of Gas Volume through Pipes and Small Ducts”), 2C (“Determination of Stack Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts”), and 2D (“Measurement of Gas Volume Flow Rates in Small Pipes and Ducts”) (40 CFR 60, Appendix A-1).

- 504.3** EPA Reference Methods 3 (“Gas Analysis for the Determination of Dry Molecular Weight”), 3A (“Determination of Oxygen and Carbon Dioxide Concentrations in Emissions From Stationary Sources (Instrumental Analyzer Procedure)”), 3B (“Gas Analysis for the Determination of Emission Rate Correction Factor or Excess Air”), and 3C (“Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources”) (40 CFR 60, Appendix A-2).
- 504.4** EPA Reference Method 4 (“Determination of Moisture Content in Stack Gases”) (40 CFR 60, Appendix A-3).
- 504.5** EPA Reference Method 5 (“Determination of Particulate Emissions from Stationary Sources”) (40 CFR 60, Appendix A-3).
- 504.6** EPA Reference Method 202 (“Dry Impinger Method for Determining Condensable Particulate Emissions from Stationary Sources”) (40 CFR 51, Appendix M).
- 504.7** EPA Reference Methods 7 (“Determination of Nitrogen Oxide Emissions from Stationary Sources”), 7A (“Determination of Nitrogen Oxide Emissions from Stationary Sources – Ion Chromatographic Method”), 7B (“Determination of Nitrogen Oxide Emissions from Stationary Sources - Ultraviolet Spectrophotometry”), 7C (“Determination of Nitrogen Oxide Emissions from Stationary Sources - Alkaline-Permanganate Ion Colorimetric Method”), 7D (“Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline-Permanganate Chromatographic Method”), and 7E (“Determination of Nitrogen Oxide Emissions from Stationary Sources – Instrumental Analyzer Procedure”) (40 CFR 60, Appendix A-4).
- 504.8** EPA Reference Method 9 (“Visual Determination of the Opacity of Emissions from Stationary Sources”) (40 CFR 60, Appendix A-4).
- 504.9** EPA Reference Method 10 (“Determination of Carbon Monoxide Emissions from Stationary Sources”) (40 CFR 60, Appendix A-4).
- 504.10** EPA Reference Method 20 (“Determination of Nitrogen Oxides, Sulfur Dioxide and Diluent Emissions from Stationary Gas Turbines”) (40 CFR 60, Appendix A-7).
- 504.11** ASTM D2622- 05, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry.
- 504.12** ASTM D4294- 03, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry.
- 504.13** Standard Methods for the Examination of Water and Wastewater, Method #2540C (“Total Dissolved Solids Dried at 180°C”), American Public Health Association, 19th edition, 1995.
- 504.14** ASTM D5907-13, Standard Methods for Filterable Matter (Total Dissolved Solids) and Nonfilterable Matter (Total Suspended Solids) in Water.
- 504.15** South Coast Air Quality Management District Method 307-91 (“Determination of Sulfur in a Gaseous Matrix”), revised 1994.

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 323
FUEL BURNING EQUIPMENT FROM
INDUSTRIAL/COMMERCIAL/INSTITUTIONAL (ICI) SOURCES**

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III-CONTROL OF AIR CONTAMINANTS**

RULE 323

**FUEL BURNING EQUIPMENT FROM INDUSTRIAL/COMMERCIAL/INSTITUTIONAL (ICI)
SOURCES**

SECTION 100 – GENERAL

- 101 PURPOSE:** To limit the discharge of nitrogen oxides, sulfur oxides, carbon monoxide, and particulate matter emissions into the atmosphere from fuel burning combustion units at industrial and/or commercial and/or institutional (ICI) sources.
- 102 APPLICABILITY:** This rule applies to the following types of combustion units that burn either fossil fuels or alternative fuels:
- 102.1** Each boiler or steam generating unit that has a maximum design rated heat input capacity greater than 10 million (MM) British thermal units per hour (Btu/hr).
 - 102.2** Each stationary gas turbine with a heat input at peak load equal to or greater than 10 MMBtu/hr.
 - 102.3** Each cogeneration steam generating unit with a heat input of greater than 10 MMBtu/hr.
 - 102.4** Each indirect-fired process heater with a heat input greater than 10 MMBtu/hr.
 - 102.5** NSPS & NESHAP: In addition to this rule, facilities may be subject to New Source Performance Standards (NSPS) in Rule 360 and/or National Emission Standards for Hazardous Air Pollutants (NESHAP) in Rule 370 of these rules.
- 103 EXEMPTIONS:** This rule shall not apply to the following types of equipment:
- 103.1** Incinerators, crematories, or burn-off ovens; or
 - 103.2** Dryers, cement, and lime kilns; or
 - 103.3** Direct-fired process heaters; or
 - 103.4** Medical waste incinerators; or
 - 103.5** Reciprocating internal combustion engines; or
 - 103.6** Combustion equipment used in power plant operations for the purpose of supplying greater than one third of the electricity to any utility power distribution system for sale; or
 - 103.7** Combustion equipment associated with nuclear power plant operations; or
 - 103.8** Water heaters used for the sole purpose of heating water for comfort or for radiant heat; or
 - 103.9** Municipal solid waste landfill enclosed combustors and non-enclosed flares.

104 PARTIAL EXEMPTIONS:

- 104.1** Stationary gas turbines listed in Section 102.2 of this rule that are used for any of the following reasons shall be exempt from Sections 301, 304, and 305, of this rule:
- a. Used for firefighting; or
 - b. Used for flood control; or
 - c. Engaged by manufacturers in research and the development of equipment for either gas turbine emission control techniques or gas turbine efficiency improvements.
- 104.2** All combustion units that are normally fired with natural gas shall be exempt from Sections 301, 304, 305, and 501.1 of this rule while firing emergency fuel during a natural gas curtailment or a natural gas emergency. For combustion units located at a major stationary source of nitrogen oxides, this exemption shall not exceed 168 hours per calendar year per combustion unit, excluding hours of operation for testing, reliability, training, and maintenance.
- 104.3** All combustion units that are normally fired with natural gas shall be exempt from Sections 301, 304, 305, and 501.1 of this rule while firing emergency fuel for the purposes of testing, reliability, training, and maintenance. This exemption shall not exceed 36 hours per calendar year per combustion unit, excluding hours of operation during natural gas curtailments and natural gas emergencies.

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

- 201 ALTERNATIVE FUELS:** Substitutes for traditional oil-derived and fossil-fuel derived motor vehicle fuels including but not limited to biodiesel, propane, ethanol, methanol, or waste derived fuel gas.
- 202 ANNUAL HEAT INPUT:** The actual total heat input of fuels combusted in a unit during a calendar year, as calculated based on the amount of each fuel combusted and the higher heating value of each fuel. Annual heat input shall not include the heat input from emergency fuel combusted during natural gas curtailments and natural gas emergencies or emergency fuel combusted for purposes of testing, reliability, training, and maintenance as long as the usage limits in Sections 104.2 and 104.3 are not exceeded.
- 203 BOILER:** A device that combusts any fossil fuel or alternative fuel and recovers thermal energy to heat water or another material.
- 204 COGENERATION STEAM GENERATING UNIT:** Any device that is fired with fossil fuels or alternative fuels and simultaneously produces both useful thermal energy (such as heat or steam) and either electrical or mechanical energy from the same primary energy source.

- 205 COMBUSTION CONTROL SYSTEM:** Equipment or technology, such as water injection or low-NO_x burners, that reduce the formation of nitrogen oxides during combustion of fossil fuels or alternative fuels.
- 206 COMBUSTION UNIT:** Any boiler, steam generating unit, stationary gas turbine, cogeneration steam generating unit, or indirect-fired process heater listed in Section 102 of this rule.
- 207 CONTINUOUS EMISSIONS MONITORING SYSTEM (CEMS):** The total equipment required to sample, analyze, measure, and provide a permanent record of emissions by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)).
- 208 CORRECTIVE ACTION PLAN (CAP):** A methodical procedure that is used to evaluate and correct a turbine operational problem and that includes, at a minimum, improved preventative maintenance procedures, improved ECS operating practices, possible operational amendments, and progress reports.
- 209 EMERGENCY FUEL:** Fuel fired only for purposes of testing, reliability, training, and maintenance or during circumstances such as a natural gas emergency or a natural gas curtailment, or breakdown of delivery system such as an unavoidable interruption of supply that makes it impossible to fire natural gas in the combustion unit. Fuel is not considered emergency fuel if it is used to avoid either peak demand charges or high gas prices during on-peak price periods or due to a voluntary reduction in natural gas usage.
- 210 EMISSION CONTROL SYSTEM (ECS):** Post-combustion systems that are approved in writing by the Control Officer and are designed and operated in accordance with good engineering practice to reduce emissions from combustion equipment. A combustion control system is not an emission control system.
- 211 FOSSIL FUEL:** Naturally occurring carbonaceous substances from the ground such as natural gas, petroleum, coal, and any form of solid, liquid or gaseous fuel derived from such material for the purpose of creating energy.
- 212 GAS TURBINE:** A rotary engine driven by the expansion of hot gases that are generated by the combustion of fuel.
- 213 HEAT INPUT:** Heat derived from the combustion of fuel not including the heat input from preheated combustion air, recirculated flue gases, or exhaust gases from other sources, such as gas turbines, internal combustion engines, and kilns.
- 214 LOW SULFUR OIL:** Fuel oil containing less than or equal to 0.05% sulfur by weight.
- 215 NATURAL GAS CURTAILMENT:** A shortage in the supply of natural gas, due solely to limitations or restrictions in distribution pipelines by the utility supplying the gas and not due to the cost of natural gas.
- 216 OPACITY:** A condition of the ambient air, or any part thereof, in which an air contaminant partially or wholly obscures the view of an observer.

- 217 **OPERATING HOUR:** A clock hour during which a unit combusts fuel, either for part of the hour or for the entire hour.
- 218 **PARTICULATE MATTER EMISSIONS:** Any and all particulate matter emitted to the ambient air as measured by applicable state and federal test methods.
- 219 **PARTS PER MILLION BY VOLUME DRY (PPMVD):** A unit of proportion used to express concentration that is corrected to a dry basis.
- 220 **PEAK LOAD:** 100% of the manufacturer's design capacity of a gas turbine at 288° Kelvin, 60% relative humidity, and 101.3 kilopascals pressure (ISO 3977 standard reference conditions and ratings).
- 221 **PROCESS HEATER:** An enclosed combustion device that uses controlled flame to transfer heat to a process fluid or a process material that is not a fluid or to heat transfer material for use in a process unit (not including the generation of steam). A process heater may be either indirect or direct-fired, dependent upon whether the gases of combustion mix with and exhaust to the same stack or vent (direct-fired) with gases emanating from the process material or not (indirect-fired). Emissions from indirect-fired units consist entirely of products of combustion while emissions from direct-fired units are unique to the given process and may vary widely in any industrial process. A process heater is not an oven or kiln used for drying, curing, baking, cooking, calcining, or vitrifying.
- 222 **RATED HEAT INPUT CAPACITY:** The heat input capacity as specified on the nameplate of the combustion unit. If the combustion unit has been altered or modified so that its maximum heat input is different than the heat input capacity on the nameplate (design heat capacity), the maximum heat input shall be considered as the rated heat input capacity.
- 223 **STATIONARY GAS TURBINE:** Any gas turbine that is not self-propelled or that is attached to a foundation.
- 224 **STEAM GENERATING UNIT:** A device that combusts any fossil fuel or alternative fuel and produces steam or heats water or heats any heat transfer medium.
- 225 **SULFUR OXIDES (SO_x):** The sum of the oxides of sulfur emitted from the flue gas from a combustion unit that are directly dependent upon the amount of sulfur in the fuel used.
- 226 **ULTRA LOW SULFUR OIL:** Fuel oil containing less than or equal to 0.0015 % sulfur by weight.
- 227 **UNCOMBINED WATER:** Condensed water containing no more than analytical trace amounts of other chemical elements or compounds.
- 228 **WASTE DERIVED FUEL GAS:** A gaseous fuel that is generated from the biodegradation of solid or liquid waste including, but not limited to, digester gas and landfill gas.
- 229 **WATER HEATER:** A closed vessel in which water is heated by combustion of fuel and water is either withdrawn for use external to the vessel (at pressures not exceeding 160 psi

with all controls and devices preventing water temperatures from exceeding 210°F) or used for radiant heat. Water heaters are usually no larger than 1 MM Btu/hr and do not reach temperatures of 220°F and higher.

SECTION 300 – STANDARDS

- 301 LIMITATIONS – PARTICULATE MATTER:** An owner or operator of any combustion unit with either a rated heat input capacity or heat input greater than 100 MMBtu/hr shall not discharge, cause, or allow the discharge of particulate matter emissions, caused by combustion of non-gaseous liquid fuels or a blend of liquid fuels with other fuels, in excess of 0.10 pounds/MMBtu.
- 302 LIMITATIONS – OPACITY:** An owner or operator shall not discharge into the ambient air from any single source of emissions any air contaminant, other than uncombined water, in excess of 20% opacity.
- 303 LIMITATIONS – SULFUR IN FUEL:** An owner or operator of any combustion unit that burns fuel oil or a mixture or blend of fuel oil with any other fuels shall use only ultra low sulfur oil. An existing supply of low sulfur oil purchased or obtained prior to November 2, 2016 may be used until depleted. An owner or operator of any combustion unit that burns waste derived fuel gas shall use only waste derived fuel gas that contains no more than 0.08% sulfur by weight, alone or in combination with other fuels.
- 304 LIMITATIONS – NITROGEN OXIDES:** An owner or operator of any combustion unit shall comply with the subsections specified in Table 323-1.

TABLE 323-1

FOR COMBUSTION UNITS THAT ARE NOT LOCATED AT A MAJOR SOURCE OF NITROGEN OXIDES:	THE OWNER OR OPERATOR SHALL COMPLY WITH:
Stationary gas turbines	304.1 and 304.2
Combustion units (>100 MMBtu/hr) except stationary gas turbines	304.3
Combustion units (≤ 100 MMBtu/hr) except stationary gas turbines	304.1 or 304.2 or 304.4*
FOR COMBUSTION UNITS THAT ARE LOCATED AT A MAJOR SOURCE OF NITROGEN OXIDES:	THE OWNER OR OPERATOR SHALL COMPLY WITH:
Stationary gas turbines	304.1 and 304.2
Combustion units (> 100 MMBtu/hour) except stationary gas turbines	304.3
Combustion units (> 50 MMBtu/hour and ≤ 100 MMBtu/hour) except stationary gas turbines	304.2

TABLE 323-1

Combustion units (> 10 MMBtu/hour and ≤ 50 MMBtu/hour with annual heat input ≥ 220,000 therms) except stationary gas turbines	304.2 or 304.4*
Combustion units (> 10 MMBtu/hour and ≤ 50 MMBtu/hour with annual heat input < 220,000 therms) except stationary gas turbines	304.1 or 304.2 or 304.4*

* The RACT tuning procedures in Section 304.4 are not appropriate for combustion units equipped with Low-NO_x burners or burners utilizing a premix flame.

304.1 Baseline Monitoring and Annual Tuning:

- a. Establish and record the initial optimal baseline concentrations for NO_x and CO within 90 days of the first usage of the combustion unit utilizing the initial design burner specifications or manufacturer’s recommendations to ensure good combustion practices. The initial design burner specifications or manufacturer’s recommendations shall be kept onsite and available to the Control Office upon request.
- b. Tune the combustion unit annually in accordance with the manufacturer’s recommended procedure. The manufacturer’s recommended procedures shall be kept onsite and available to the Control Officer upon request. For low emission burner systems that do not provide accessibility for combustion chamber inspection, burner inspection, or inspection of the flame pattern, an owner or operator shall provide documentation from the manufacturer and follow the manufacturer’s recommended procedure. If the manufacturer’s recommended tuning procedure is not available, the owner or operator shall tune the combustion unit annually by following, at a minimum, the steps listed in 304.1b.(1) – (5), if the combustion unit is so equipped, and if such procedures are appropriate to the type of combustion unit:
 - (1) Inspect the burner system and clean and replace any components of the burner as necessary to minimize emissions of NO_x and CO; and
 - (2) Inspect the burner chamber for areas of impingement and remove if necessary; and
 - (3) Inspect the flame pattern and make adjustments as necessary to optimize the flame pattern; and
 - (4) Inspect the system controlling the air-to-fuel ratio and ensure that it is correctly calibrated and functioning properly; and
 - (5) Using a portable monitor, measure the NO_x and CO concentration of the effluent stream after each adjustment is made to ensure optimal baseline concentrations are maintained.

304.2 RACT Emission Limits: Limit nitrogen oxide emissions to no more than the following amounts:

- a. Stationary Gas Turbines:

(1) 42 ppmvd corrected to 15% oxygen calculated as nitrogen dioxide, when burning gaseous fuel.

(2) 65 ppmvd corrected to 15% oxygen calculated as nitrogen dioxide, when burning liquid fuel.

b. All Combustion Units Except Stationary Gas Turbines:

(1) 30 ppmvd corrected to 3% oxygen calculated as nitrogen dioxide, when burning gaseous fuel.

(2) 40 ppmvd corrected to 3% oxygen calculated as nitrogen dioxide, when burning liquid fuel.

304.3 Semi-Annual Tuning and RACT Emission Limits:

a. Tune the combustion unit every 6 months in accordance with the manufacturer's recommended procedure or in accordance with the procedures listed in Section 304.1.b(1) through (5) of this rule and;

b. Meet the RACT emission limits as stated in Section 304.2 of this rule.

304.4 RACT Tuning Procedures: Tune the combustion unit every 12 months using the procedure in Appendix A of this rule that is appropriate for the combustion unit.

305 LIMITATIONS-CARBON MONOXIDE: An owner or operator of any combustion unit with a heat input greater than 100 MMBtu/hr shall not cause to be discharged into the atmosphere, carbon monoxide (CO), measured in excess of 400 ppmvd corrected to 15% oxygen for Stationary Gas Turbines, and corrected to 3% oxygen for all Combustion Units Except Stationary Gas Turbines.

306 GOOD COMBUSTION PRACTICES FOR STATIONARY GAS TURBINES: The owner or operator of any stationary gas turbine listed in Section 102.2 of this rule shall, regardless of fuel type, use operational practices recommended by the manufacturer to ensure good combustion control. The owner or operator of any stationary gas turbine listed in Section 102.2 of this rule shall demonstrate good combustion control using the parametric monitoring method listed below, or by operating a continuous emissions monitoring system to demonstrate compliance with the limits in Sections 304 and 305 of this rule, as applicable.

306.1 Monitor the maximum temperature differential across the combustion burners or at locations around the back end of the turbine, dependent upon the particular unit, to ensure no more than a 100°F difference using a thermocouple. Differential temperatures shall be measured and recorded at least once during every operating hour. If a temperature differential of greater than 100°F is observed across the burners, investigation and corrective action shall be taken within three hours to reduce the temperature difference to 100°F or less.

306.2 If the manufacturer recommends that the maximum numerical temperature differential to ensure good combustion is greater than 100°F, then proof of this maximum alternate temperature differential shall be submitted to the Control Officer. The procedure to measure the maximum temperature differential listed in Section 306.1 of this rule shall then be followed using this alternate recommended maximum temperature differential after approval by the Control Officer.

306.3 If the differential temperature exceeds 100°F, or the alternate temperature differential recommended by the manufacturer and approved by the Control Officer, during three consecutive operating hours, the operator shall comply with the recordkeeping requirements in Section 501.3 of this rule. If this occurs more than 3 times in 3 months, the owner or operator shall notify the Control Officer in writing within 2 business days and the Control Officer shall require the owner or operator to submit a Corrective Action Plan (CAP).

307 REQUIREMENTS FOR ECS AND ECS MONITORING EQUIPMENT: If an ECS is operated during a performance test required by Section 503 of this rule, the owner or operator shall:

307.1 Properly install, operate, and maintain in calibration and in good working order, devices for indicating temperatures, pressures, transfer rates, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly and is properly maintained.

307.2 Submit to the Control Officer for approval an Operation and Maintenance (O&M) Plan for any ECS and any ECS monitoring devices that are used pursuant to this rule or to an air pollution permit. The O&M Plan shall include:

- a. ECS equipment manufacturer; and
- b. ECS equipment model; and
- c. ECS equipment identification number; and
- d. Operating parameters that will be monitored to demonstrate continued operation of the ECS in the manner the ECS was operated during the most recent performance test; and
- e. The manufacturer's recommended maintenance procedures and frequencies or, if the manufacturer's recommended maintenance procedures are not available, a maintenance plan based on good engineering practice to reduce emissions.

307.3 Provide and maintain readily available on-site at all times the O&M Plan(s) for any ECS and ECS monitoring devices that are used under this rule or an air pollution control permit.

307.4 Fully comply with all the identified actions and schedules provided in the most recent version of the O&M Plan submitted to the Control Officer, unless notified by the Control Officer in writing.

307.5 Submit a revised O&M Plan within 30 business days following receipt of the Control Officer's notice that an O&M Plan for any ECS, including any ECS monitoring device, is deficient or inadequate.

308 EMERGENCY FUEL USE NOTIFICATION: Each time a combustion unit is fired with emergency fuel, the owner or operator shall provide written notification to the Control Officer within 2 business days after combustion of emergency fuel begins. The written notification shall include a description of the emergency that necessitated the use of emergency fuel, the date that combustion of emergency fuel began, and the expected

duration of the emergency fuel usage. The written notification may be submitted by mail, email, fax, commercial delivery, or hand delivery.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE FOR PERFORMANCE TESTING: The owner or operator of any combustion unit that becomes subject to the emission limits in Section 304.2 of this rule on or after June 23, 2021 shall comply with following compliance schedules, as applicable, and the associated deadlines for demonstrating compliance.

401.1 Performance Test: The owner or operator shall demonstrate compliance with the applicable emission limits within 6 months after the combustion unit becomes subject to the emission limits in Section 304.2 of this rule. This requirement shall not apply to a combustion unit if modifications to an ECS or installation of an ECS is required to achieve compliance with the applicable emission limits and the owner or operator is in compliance with the applicable schedule in Section 401.3 or 401.4 of this rule.

401.2 O&M Plan: If different operating parameters or ECS maintenance procedures or schedules are used to achieve compliance with the emission limits in Section 304.2 of this rule, the owner or operator of the combustion unit shall submit a revised O&M Plan in accordance with Section 307 of this rule within 30 days after completion of the performance test required by Section 401.1 of this rule.

401.3 Modifications to Existing ECS: If it is necessary to modify an ECS by either reconstructing or adding on equipment, an owner or operator shall submit to the Control Officer a schedule for modification of the ECS within 6 months after the combustion unit becomes subject to the emission limits in Section 304.2 of this rule. The schedule shall show how the ECS is to be used to achieve full compliance and shall specify dates for completing increments of progress. The owner or operator shall complete ECS modifications and demonstrate compliance with the applicable NO_x emission limits within 12 months after the combustion unit becomes subject to the emission limits in Section 304.2 of this rule.

401.4 ECS Installation: If installation of an ECS is necessary to achieve compliance with numeric emission limits in this rule, an owner or operator shall submit to the Control Officer a schedule for installation of the ECS within 6 months after the equipment becomes subject to the emission limits in Section 304.2 of this rule. The owner or operator shall complete the installation of an ECS and demonstrate compliance with the applicable NO_x emission limits within 36 months after the combustion unit becomes subject to the emission limits in Section 304.2 of this rule.

402 COMPLIANCE SCHEDULE FOR RACT TUNING PROCEDURE: The owner or operator of any combustion unit that becomes subject to the requirements of Section 304.4 of this rule on or after June 23, 2021 shall complete the RACT tuning procedure within 6 months after the combustion unit becomes subject to Section 304.4 of this rule.

SECTION 500 – MONITORING AND RECORDS

- 501 RECORDKEEPING AND REPORTING:** An owner or operator of a combustion unit shall comply with the requirements set forth in this section. Any records and data required by this section shall be kept on site at all times in a consistent and complete manner and be made available without delay to the Control Officer or his designee upon request. Records shall consist of the following information:
- 501.1 Combustion Units:** Monthly records of type and amount of fuel used, and the sulfur content of any liquid fuel or waste derived fuel gas combusted.
 - 501.2 Emergency Fuel Usage:** Monthly records of type and amount of emergency fuel used, the sulfur content of the fuel, dates and hours of operation using emergency fuel, and nature of the emergency or purpose for the use of the emergency fuel as stated in Sections 104.2 and 104.3. Yearly records of the twelve month log of hours of operation using emergency fuel.
 - 501.3 Good Combustion Practice:** Measurements of the temperature differential across the burners of turbines per Section 306 of this rule, results of evaluation and corrective action taken to reduce the temperature differential or a finding that the temperature differential returned to the range listed in Sections 306.1 or 306.2 of this rule without any action by the owner or operator.
 - 501.4 Baseline Monitoring and Annual Tuning Procedure:** Date that the procedure was performed on the particular combustion unit and at a minimum: stack gas temperature, flame conditions, nature of the adjustment and results of the nitrogen oxide and carbon monoxide concentrations obtained by using a portable monitor after each adjustment.
 - 501.5 RACT Tuning Procedure:** Date the procedure was performed, the final control settings that reflect optimized combustion, the firing rate during the tuning procedure, a record of all adjustments and cleaning procedures, and a record of all operating parameters specified in Appendix A.
 - 501.6 Operation & Maintenance Records:** On each day an ECS operates, record the ECS operating parameters described in the O&M Plan. Record all maintenance actions taken within 24 hours of maintenance completion. An explanation shall be recorded for any scheduled maintenance that is not performed during the period designated in the O&M Plan.
 - 501.7 Continuous Emission Monitoring Systems:** All CEMS measurements, results of CEMS performance evaluations, CEMS calibration checks, and adjustments and maintenance performed on these systems.
- 502 RECORDS RETENTION:** Copies of reports, logs and supporting documentation required by the Control Officer shall be retained for at least 5 years. Records and information required by this rule shall also be retained for at least 5 years.
- 503 COMPLIANCE DEMONSTRATION:**
- 503.1 Sulfur Verification:**
 - a. Ultra Low Sulfur Oil:** If the Control Officer requests documentation of the sulfur content of the fuel to demonstrate the 0.0015% limit, the owner or operator shall submit one of the following:

- (1) Fuel receipts, or
- (2) Contract specifications, or
- (3) Pipeline meter tickets, or
- (4) Fuel supplier information, or
- (5) Purchase records, or
- (6) Analytical results listing the sulfur content of the fuel, the test method conducted, and evidence that appropriate chain of custody procedures were followed.

The items listed above must provide accurate sulfur content values and be based on enforceable test methods as approved by the Administrator to determine the sulfur content.

- b. **Waste Derived Fuel Gas:** The owner or operator shall submit documentation of the sulfur content of the waste derived fuel gas to the Control Officer upon request. The sulfur content of gaseous fuels shall be determined by South Coast Air Quality Management District Method 307-91 Determination of Sulfur in a Gaseous Matrix.
- c. **Purchase Documentation of Existing Low Sulfur Oil:** The owner or operator shall maintain documentation of the purchase date of any low sulfur oil on site to demonstrate the oil was purchased prior to November 2, 2016.

503.2 Source Test Requirements: The owner or operator of any combustion unit that is subject to numeric emission limits in Section 301, 304 and/or 305 of this rule shall conduct performance tests at least once every 5 years. The result of the performance test shall be the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour. In addition, the owner or operator shall comply with the following requirements:

- a. Nitrogen oxides shall be measured using EPA Reference Method 7 or 7E and carbon monoxide shall be measured using EPA Reference Method 10, as incorporated by reference in Section 504 of this rule. For stationary gas turbines, nitrogen oxides and carbon monoxide shall be measured dry and corrected to 15% oxygen. For all other combustion units, nitrogen oxides and carbon monoxide shall be measured dry and corrected to 3% oxygen.
- b. Particulate matter shall be measured using EPA Reference Method 5, or another EPA-approved test method designated by the Control Officer. A back-half analysis shall be performed using Reference Method 202 each time a performance test is required.
- c. The owner or operator may demonstrate compliance with applicable emission limits by conducting representative performance testing if all of the following requirements are satisfied:
 - (1) All combustion units in the specified group were produced by the same manufacturer, have the same model number or other manufacturer's designation in common, and have the same rated heat input capacity and operating specifications;

- (2) All combustion units in the specified group are operated and maintained in a similar manner;
- (3) At least one combustion unit or one-third of the combustion units in the specified group, whichever is greater, are tested each time a performance test is required;
- (4) Each time a performance test is required, different combustion units are tested so that all combustion units in the specified group are tested before any combustion units in the specified group are retested; and
- (5) If emissions from any combustion unit in the specified group exceed an applicable emission limit the owner or operator shall conduct a performance test on each unit in the specified group to demonstrate that each combustion unit in the specified group is in compliance with the applicable emission limit.

503.3 Gaseous Emissions-Continuous Emission Monitoring System (CEMS):

Compliance with the emission requirements specified in Sections 301 through 305 of this rule may also be determined using CEMS. Where the combustion unit(s) are equipped with CEMS:

- a. **General:** All CEMS must be installed according to the procedures specified in 40 CFR 60.13(g). All CEMS shall be installed such that a representative measurement of emissions is obtained. Additional procedures for the location of CEMS found in 40 CFR 60, Appendix B shall be used. The data recorder for CEMS shall be in operation at all times the combustion unit is operated.
- b. **Cycle Time:** An owner or operator of any combustion unit using a CEMS shall ensure that the CEMS completes a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.
- c. **Calibration:** Zero and span shall be checked once every 24 hours. The CEMS shall be calibrated in accordance with the manufacturer's specifications.
- d. **Averaging:** The data recorded during periods of calibration checks, zero and span adjustments shall not be included in averaging for compliance determinations. Compliance shall be determined on an hourly basis using the average of the three previous 1-hour average emissions concentrations. The 1-hour average emissions concentration shall be determined from at least two data points recorded by the CEMS.
- e. **Quality Assurance:** The owner or operator of the CEMS shall fully comply with 40 CFR 60, Appendix F.

504 COMPLIANCE DETERMINATION-TEST METHODS INCORPORATED BY REFERENCE: The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods are incorporated by reference in Rule 360 and Appendix G of the Maricopa County Air Pollution Control Regulations. Alternative test methods as approved by the Administrator or other EPA-approved test methods may be used upon written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method

will constitute a violation. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department.

- 504.1** EPA Reference Methods 1 (“Sample and Velocity Traverses for Stationary Sources”), and 1 A (“Sample and Velocity Traverses for Stationary Sources with Small Stacks and Ducts”) (40 CFR 60, Appendix A).
- 504.2** EPA Reference Methods 2 (“Determination of Stack Gas Velocity and Volumetric Flow Rate”), 2A (“Direct Measurement of Gas Volume through Pipes and Small Ducts”), 2C (“Determination of Stack Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts”), and 2D (“Measurement of Gas Volumetric Flow Rates in Small Pipes and Ducts”) (40 CFR 60, Appendix A).
- 504.3** EPA Reference Methods 3 (“Gas Analysis for the Determination of Dry Molecular Weight”), 3A (“Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)”), 3B (“Gas Analysis for the Determination of Emission Rate Correction Factor or Excess Air”), and 3C (“Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources”) (40 CFR 60, Appendix A).
- 504.4** EPA Reference Method 4 (“Determination of Moisture Content in Stack Gases”) (40 CFR 60, Appendix A).
- 504.5** EPA Reference Method 5 (“Determination of Particulate Emissions from Stationary Sources”) (40 CFR 60, Appendix A)
- 504.6** EPA Reference Method 202 (“Dry Impinger Method for Determination of Condensable Particulate Emissions from Stationary Sources”) (40 CFR 51, Appendix M).
- 504.7** EPA Reference Methods 7 (“Determination of Nitrogen Oxide Emissions from Stationary Sources”) and 7E (“Determination of Nitrogen Oxide Emissions from Stationary Sources – Instrumental Analyzer Procedure”), (40 CFR 60, Appendix A).
- 504.8** EPA Reference Method 9, (“Visual Determination of the Opacity of Emissions from Stationary Sources”) (40 CFR 60, Appendix A).
- 504.9** EPA Reference Method 10, (“Determination of Carbon Monoxide from Stationary Sources”) (40 CFR 60, Appendix A).
- 504.10** EPA Reference Method 20, (“Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from Stationary Gas Turbines”) (40 CFR 60, Appendix A).
- 504.11** ASTM Method D2622-05, (“Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry”).
- 504.12** ASTM Method D2880-96 (“Standard Specification for Gas Turbine Fuel Oils”).
- 504.13** ASTM Method D4294-02 or D4294-03, (“Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry”).
- 504.14** ASTM Method D5504-01 or D5504-08, (“Standard Test Method for Determination of Sulfur compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence”).

504.15 South Coast Air Quality Management District Method 307-91 (“Determination of Sulfur in a Gaseous Matrix”), revised 1994.

APPENDIX A TO RULE 323 RACT TUNING PROCEDURES

Nothing in these equipment tuning procedures shall be construed to require any act or omission that would result in unsafe conditions or would be in violation of any regulation of requirement established by Factory Mutual, Industrial Risk Insurers, National Fire Prevention Association, the Industrial Commission of Arizona (Arizona Division of Occupational Safety and Health), the Federal Occupational Safety and Health Administration, or other relevant regulations and requirements. Steps in these procedures that are not applicable to specific combustion units may be omitted.

Tuning Procedure for Forced Draft Fired Boilers, Steam Generating Units, and Process Heaters:

1. Operate the combustion unit at the firing rate most typical of normal operation. If the combustion unit experiences significant load variations during normal operation, operate it at its average firing rate.
2. At this firing rate, record the stack gas temperature, oxygen concentration, and CO concentration (for gaseous fuels) or smoke-spot number¹ (for liquid fuels), and observe flame conditions after operation stabilizes at the firing rate selected. If the excess oxygen in the stack gas is at the lower end of the range of typical minimum values², and if CO emissions are low and there is no smoke, the combustion unit is probably operating at near optimum efficiency at this particular firing rate. Complete the remaining steps in this procedure to determine whether still lower oxygen levels are practical.
3. Increase combustion air flow to the furnace until stack gas oxygen levels increase by one to two percent over the level measured in Step 2 and record the stack gas temperature, oxygen concentration, CO concentration (for gaseous fuels) or smoke-spot number (for liquid fuels), and observe flame conditions for these higher oxygen levels after boiler operation stabilizes.
4. Decrease combustion air flow until the stack gas oxygen concentration is at the level measured in Step 2. From this level, gradually reduce the combustion air flow, in small increments. After each increment, record the stack gas temperature, oxygen concentration, CO concentration (for gaseous fuels) and smoke-spot number (for liquid fuels). Also observe the flame and record any changes in its condition.
5. Continue to reduce combustion air flow stepwise, until one of these limits is reached:
 - a. Unacceptable flame conditions, such as flame impingement on furnace walls or burner parts, excessive flame carryover, or flame instability;
 - b. Stack gas CO concentrations greater than 400 ppm;
 - c. Smoking at the stack; or

¹The smoke-spot number shall be determined with ASTM D2156.

²Typical minimum oxygen levels for boilers firing at high firing rates are 0.5 – 3% (gaseous fuels) and 2 – 4% (liquid fuels).

- d. Equipment related limitations, such as low windbox/furnace pressure differential, built in air-flow limits, etc.
- 6. Develop an O₂/CO curve (for gaseous fuels) or O₂/smoke curve (for liquid fuels) using the excess oxygen and CO or smoke-spot number data obtained at each combustion air flow setting.
- 7. From the O₂/CO curve or the O₂/smoke curve, find and record the stack gas oxygen levels where the CO emissions or smoke-spot number equal the following values:

Fuel	Measurement	Value
Gaseous	CO Emissions	400 ppm
#1 & #2 oils	Smoke-spot number	Number 1
#4 oils	Smoke-spot number	Number 2
#5 oils	Smoke-spot number	Number 3
Other oils	Smoke-spot number	Number 4

- 8. The stack gas oxygen level recorded in Step 7 is the minimum excess oxygen level (or the CO/smoke threshold). Compare the minimum excess oxygen level to the expected value provided by the combustion unit manufacturer. If the minimum level is found to be substantially higher than the value provided by the combustion unit manufacturer, burner adjustments can probably be made to improve fuel and air mixing, thereby allowing operation with less air.
- 9. Increase the minimum excess oxygen level identified in Step 7 by 0.5 to 2.0 percent and reset burner controls to operate automatically at this higher stack gas oxygen level. This margin above minimum oxygen level accounts for fuel variations, variations in atmospheric conditions, load changes, and nonrepeatability or play in automatic controls.
- 10. If the load of the combustion unit varies significantly during normal operation, repeat Steps 1 through 8 for firing rates that represent the upper and lower limits of the range of the load. Because control adjustments at one firing rate may affect conditions at other firing rates, it may not be possible to establish the optimum excess oxygen level at all firing rates. If this is the case, choose the burner control settings that give best performance over the range of firing rates. If one firing rate predominates, settings should optimize conditions at that firing rate.
- 11. Verify that the new settings can accommodate the sudden changes that may occur in daily operation without adverse effects. Do this by increasing and decreasing load rapidly while observing the flame and stack. If any of the conditions in Step 5 result, reset the combustion controls to provide a slightly higher level of excess oxygen. Verify the new settings in a similar manner. The final control settings that reflect combustion optimization shall be recorded for future reference.

Natural Draft Fired Boilers, Steam Generating Units, and Process Heaters:

1. Verify that the combustion unit is operating at the lowest pressure or temperature setting that will satisfy load demand. This pressure or temperature will be used as a basis for comparative combustion analysis before and after tuning.
2. Verify that the combustion unit will operate for the minimum number of hours necessary to perform the tuning procedure.
3. Verify that the size of air supply openings is in compliance with applicable codes and regulations. Air supply openings must be fully open when the burner is firing and air flow must be unrestricted.
4. Verify that the vent is in good condition, properly sized, and free from obstruction.
5. Perform a combustion analysis at both high and low fire, if possible. Record the following data for each combustion analysis:
 - a. The concentration of CO and oxygen;
 - b. Inlet fuel pressure at burner at high and low firing rates;
 - c. Steam pressure, water temperature, process fluid temperature, or temperature entering and leaving the combustion unit; and
 - d. Inlet fuel use rate, if a meter is available.
6. Clean all dirty burners or burner orifices. Verify that fuel filters and moisture traps are in place, clean, and operating properly. Confirm proper location and orientation of burner diffuser spuds, gas canes, etc. Replace or repair damaged or missing burner parts.
7. Remove external and internal sediment and scale from heating surfaces.
8. Verify that the necessary water or process fluid treatment is being used. Confirm flushing and/or blowdown schedule.
9. Repair all leaks. In addition to the high-pressure lines, check the blow-off, drain, safety valve, bypass lines, and if used, the feed pump.
10. Perform the following safety checks:
 - a. Test primary and secondary low water level controls;
 - b. Check operating and limit pressure and temperature controls;
 - c. Check pilot safety shut off operation;
 - d. Check safety valve pressure setting and verify that the setting is consistent with load requirements; and
 - e. Check limit safety control and spill switch.
11. Adjust the combustion unit to fire at the maximum inlet fuel use rate; record fuel manifold pressure.

12. Adjust draft and/or fuel pressure to obtain acceptable, clean combustion at high, medium, and low firing rates. The CO concentration should not exceed 400 ppm at 3% oxygen.
13. Verify that light-offs are smooth and safe. Perform a reduced fuel pressure test at both high and low firing rates in accordance with the manufacturer's instructions.
14. Check and adjust the modulation controller. Verify proper, efficient, and clean combustion through the range of firing rates. When optimum performance has been achieved, record all data.
15. Perform a final combustion analysis on the warm combustion unit at high, medium, and low firing rates, if possible. Record data obtained from the combustion analysis as well as the following information:
 - a. Inlet fuel pressure at burner at high and low firing rates;
 - b. Pressure above draft hood or barometric damper at high, medium, and low firing rates.
 - c. Steam pressure, water temperature, or process fluid pressure or temperature entering and leaving the combustion unit; and
 - d. Inlet fuel use rate if a meter is available.

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS**

**RULE 324
STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)**

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 324
STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)**

SECTION 100 – GENERAL

101 PURPOSE: To limit carbon monoxide (CO), nitrogen oxides (NO_x), sulfur oxides (SO_x), volatile organic compounds (VOCs), and particulate matter (PM) emissions from stationary reciprocating internal combustion engines (RICE).

102 APPLICABILITY:

102.1 This rule applies to:

- a. Any stationary RICE, including stationary RICE used in cogeneration, with a rated brake horsepower (rated bhp) of greater than 125, if the stationary RICE is not located at a major source of NO_x emissions;
- b. Any stationary RICE, including stationary RICE used in cogeneration, with a rated bhp of more than 50 if the stationary RICE is not located at a major source of NO_x emissions and the maximum aggregated rated bhp of all stationary RICE at the stationary source is more than 125 when all engines with a rated bhp of more than 50 are aggregated;
- c. Any stationary RICE, including stationary RICE used in cogeneration, with a rated brake horsepower (rated bhp) of greater than 50, if the stationary RICE is located at a major source of NO_x emissions; and
- d. Any nonroad engine, with a rated bhp of greater than 125, that is located at a stationary source that emits or has the potential to emit any regulated air pollutant greater than the permitting thresholds defined in Rule 100 of these rules. For the purpose of this Rule, a nonroad engine is any internal combustion engine that by itself or in or on a piece of equipment is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include but are not limited to, wheels, skids, carrying handles, dollies, trailers, or platforms.

102.2 NSPS: In addition to this rule, a stationary RICE may be subject to New Source Performance Standards (NSPS) in Rule 360 of these rules.

102.3 NESHAP: In addition to this rule, a stationary RICE may be subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) in Rule 370 of these rules.

103 EXEMPTIONS: The following types of stationary RICE are exempt from all of the requirements of this rule but shall comply with Rule 300 (Visible Emissions) of these rules:

- 103.1 A stationary RICE used directly and exclusively for engine research including engine development, and subsequent engine performance verification for the purpose of either engine emission control techniques or engine efficiency improvements.
- 103.2 A non-emergency engine when it is operated by a manufacturer or distributor of such equipment for the purpose of performance verification and testing at the production facility.
- 103.3 A compressed gas stationary RICE used for solar testing and research programs.
- 103.4 A stationary RICE test stand used for evaluating engine performance.

104 PARTIAL EXEMPTIONS FOR EMERGENCY ENGINES: A stationary RICE operated as an emergency engine, as defined in this rule, for any of the following reasons shall be exempt from Sections 304, 501.1, 501.2, 501.3, and 501.4 of this rule when:

- 104.1 Used only for power when normal power service fails from the serving utility or if onsite electrical transmission or onsite power generation equipment fails.
- 104.2 Used only for the emergency pumping of water resulting from a flood, fire, lightning strikes, police action or for any other essential public services which affect public health and safety.
- 104.3 Used for lighting airport runways.
- 104.4 Used for sewage overflow mitigation and/or prevention.
- 104.5 Used for reliability-related activities such as engine readiness, calibration, or maintenance or to prevent the occurrence of an unsafe condition during electrical system maintenance, as long as the total number of hours of the operation for these purposes does not exceed 100 hours per calendar year per engine as evidenced by an installed non-resetting totalizing hour meter. For the purposes of this rule, hours of operation during the commissioning period do not count towards the 100 hour per calendar year limit on hours of operation for reliability-related activities.
- 104.6 Used as the non-emergency engine when the non-emergency engine has failed, but only for such time as is needed to repair the non-emergency engine. For the purposes of this exemption, if the non-emergency engine is not repaired and returned to service within 12 months, or if the emergency engine is used as the non-emergency engine for more than 50 hours, whichever occurs first, the emergency engine shall be reclassified as a non-emergency engine and shall comply with all requirements of this rule that are applicable to non-emergency engines.
- 104.7 Used to operate standby emergency water pumps for fire control that activate when sensors detect low water pressure.

105 PARTIAL EXEMPTIONS FOR LOW USAGE NON-EMERGENCY ENGINES: The following low usage non-emergency engines onsite and in use before June 23, 2021 shall be exempt from Sections 304, 501.1, 501.2, 501.3, 501.4, and 502.6 of this rule:

- 105.1 Each engine with a rated bhp at or below 1000 that operates less than 200 hours per calendar year as evidenced by an installed non-resetting totalizing hour meter.

105.2 Each engine with a rated bhp above 1000 that operates less than 100 hours per calendar year as evidenced by an installed non-resetting totalizing hour meter.

106 PARTIAL EXEMPTION FOR NONROAD ENGINES: Each nonroad engine shall comply with Rule 300 of these rules and Section 502.6 of this rule, but shall be exempt from all other requirements of this rule.

107 PARTIAL EXEMPTION FOR NON-EMERGENCY ENGINES THAT ARE LOCATED AT A MAJOR SOURCE OF NO_x: A non-emergency engine that is located at a major source of NO_x shall not be required to comply with Section 501.2 of this rule during the five year period beginning on January 1st of the year in which the engine was manufactured, if the owner or operator provides documentation that the non-emergency engine is certified by the manufacturer to comply with emission limits in 40 CFR 60 subpart IIII or 40 CFR 60 subpart JJJJ that are more stringent than the applicable emission limit(s) in Table 324-3 of this rule, and provides documentation that the non-emergency engine is installed, operated, and maintained in accordance with the manufacturer's specifications.

108 PARTIAL EXEMPTION FOR STATIONARY RICE THAT ARE LOCATED AT A NUCLEAR POWER PLANT: A stationary RICE that is located at a nuclear power plant and is operated solely for the following reasons shall comply only with the provisions in Sections 301, 302, 306, 402, 501.5, 502.1, 502.3, 502.4, and 502.5 of this rule:

108.1 Used for safety reasons and for operational tests required by the Nuclear Regulatory Commission.

108.2 Used for power when normal power service fails from the serving utility or if onsite electrical transmission or onsite power generation equipment fails.

108.3 Used for the emergency pumping of water resulting from a flood, fire, lightning strikes, police action or for any other operation that is essential to public health and safety.

108.4 Used to initiate operation of onsite emergency power generation equipment.

108.5 Used for reliability-related activities such as engine readiness, calibration, or maintenance or to prevent the occurrence of an unsafe condition during electrical system maintenance. Hours of operation for reliability-related activities shall not exceed 100 hours per year unless the reliability-related activities are recommended or required by the federal, state, or local government and the owner or operator maintains records demonstrating that the reliability-related activities are recommended or required.

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County Air Pollution Control Rules, the definitions in this rule take precedence.

201 AFTERCOOLER/INTERCOOLER: A system that cools the engine intake air or air/fuel mixture after the air exits the turbocharger and prior to the introduction into the cylinder, thereby lowering NO_x emissions.

- 202 ALTERNATIVE FUELS:** Substitutes for oil-derived and fossil-fuel derived fuels, including but not limited to biodiesel, propane, ethanol, or methanol.
- 203 COGENERATION UNIT:** A stationary RICE unit that burns fuel to simultaneously produce electricity and heat in a single thermodynamic process and is usually located in close proximity to the equipment requiring the heat energy.
- 204 COMMISSIONING PERIOD:** The final phase of the stationary RICE construction process during which all mechanical, electrical, and control systems for the RICE and all related equipment are checked, and all performance measures specified in the purchase agreement are confirmed. For the purposes of this rule, a stationary RICE may not be used for its intended purpose or any other beneficial use during the commissioning period. If a non-emergency engine subject to this rule is also subject to a condition in a Maricopa County Air Quality Permit limiting total hours of operation, the hours of operation during the commissioning period shall be included when determining compliance with the permitted limit on total hours of operation.
- 205 COMPRESSION-IGNITION ENGINE:** A stationary RICE with operating characteristics wherein the principal mechanism of igniting the fuel and air mixture in the cylinders is the compression of air in the cylinder until it is so hot that any fuel injected into the air or mixed with the air ignites. In this type of engine, a separate ignition source, such as a spark plug, is not used.
- 206 EMERGENCY ENGINE:** A stationary RICE that meets all of the following criteria:
- 206.1** Is operated solely for any of the reasons listed in Section 104 of this rule;
 - 206.2** Does not exceed 500 hours of operation per any twelve consecutive months, including the 100 hours per calendar year listed in Section 104.5 of this rule and including any hours of operation that occur during the commissioning period; and
 - 206.3** Is not operated to supply standby power due to a voluntary reduction in power by a utility or power company, or to supply power for distribution or sale to the grid, or to supply power at a source in order to avoid peak demand charges or high electric energy prices during on-peak price periods.
- 207 GASOLINE:** Any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.
- 208 IDENTICAL REPLACEMENT ENGINE:** A stationary RICE that is substituted for another stationary RICE that is intended to perform the same or similar function as the original stationary RICE and where all of the following conditions exist:
- 208.1** The identical replacement engine results in equal or lower air contaminant emissions than the original stationary RICE; and
 - 208.2** The identical replacement engine meets the emission control technology standards contained in Section 304 of this rule; and
 - 208.3** The identical replacement engine has the same manufacturer type, model number, and manufacturer's rated bhp as the original stationary RICE.

- 209 **LEAN-BURN ENGINE:** A spark-ignition engine with an air-to-fuel operating range that has more air present than is needed to burn the fuel present and cannot be adjusted to operate with an exhaust oxygen concentration of less than or equal to 2%.
- 210 **LIQUEFIED PETROLEUM GAS (LPG):** Any liquefied hydrocarbon gas obtained as a by-product in petroleum refining or natural gas production.
- 211 **LOCATION:** Any single site at a building, structure, facility, or installation.
- 212 **LOW SULFUR OIL:** Fuel oil containing less than or equal to 0.05% sulfur by weight.
- 213 **NATURAL GAS:** A naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane.
- 214 **NON-EMERGENCY ENGINE:** A stationary RICE that is not an emergency engine.
- 215 **PARTS PER MILLION BY VOLUME DRY (PPMVD):** A unit of proportion used to express concentration that is corrected to a dry basis.
- 216 **RATED BRAKE HORSEPOWER (RATED BHP):** The maximum brake horsepower (bhp) specified by the engine manufacturer for the engine application, usually listed on the nameplate of the engine. If the engine has been altered so that the maximum brake horsepower is different than the rated brake horsepower on the nameplate, then the maximum brake horsepower shall be considered the rated brake horsepower.
- 217 **RECONSTRUCTED:** Repairs, changes, or improvements to a stationary RICE where the fixed capital cost of the new and refurbished engine components exceeds 75% of the fixed capital cost of purchasing an entirely new engine with the same brake horsepower rating; or construction of an engine on a previously used engine block if the engine is constructed using all new components except for the engine block. For the purposes of this rule, the cost of installing emission controls (such as a diesel particulate filter, a three-way catalyst, or a selective catalytic reduction system) is not included when determining whether or not an engine has been reconstructed.
- 218 **RICH-BURN ENGINE:** A spark-ignition engine that is not a lean-burn engine.
- 219 **SPARK-IGNITION ENGINE:** A stationary RICE wherein the fuel is usually mixed with intake air before introduction into the combustion chamber resulting in a relatively homogeneous air/fuel mixture in the combustion chamber, at which time a spark plug, or other device, then ignites the air/fuel mixture.
- 220 **STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINE (RICE):** A reciprocating, piston-driven internal combustion engine that is operated or intended to be operated at one specific location for more than 12 consecutive months or that is attached to a foundation at the location. An engine that replaces an engine at a location and is intended to perform the same or similar function as the engine being replaced will be included in calculating the consecutive time period. A stationary RICE is not a nonroad engine.

- 221 **SULFUR OXIDES (SO_x):** Oxides of sulfur calculated as equivalent sulfur dioxide.
- 222 **ULTRA LOW SULFUR OIL:** Fuel oil containing less than or equal to 0.0015% sulfur by weight.
- 223 **WASTE DERIVED FUEL GAS:** A gaseous fuel that is generated from the biodegradation of solid or liquid waste including, but not limited to, digester gas and landfill gas.

SECTION 300 – STANDARDS:

- 301 **FUEL REQUIREMENTS:** An owner or operator of a stationary RICE that meets the criteria listed in Section 102 of this rule shall comply with one of the following:
- 301.1 Use ultra low sulfur oil, except as provided in Sections 301.1a or 301.1b of this rule.
- a. Engines that are not subject to the 40 CFR 60 Subpart IIII or 40 CFR 63 Subpart ZZZZ may use existing low sulfur oil purchased (or otherwise obtained) prior to November 2, 2016 until depleted.
 - b. Engines that are subject to 40 CFR 60 Subpart IIII or 40 CFR 63 Subpart ZZZZ must also comply with the fuel requirements in the applicable subpart.
- 301.2 Use any waste derived fuel gas that contains no more than 0.08% sulfur by weight, alone or in combination with other fuels.
- 301.3 Use gasoline that meets the sulfur standard of 80 ppm as a per-gallon cap.
- 301.4 Use natural gas, liquefied petroleum gas (LPG), or any alternative fuel that contains no more than 0.05% sulfur by weight, alone or in combination with other fuels.
- 302 **MAINTENANCE REQUIREMENTS:** An owner or operator of a stationary RICE shall maintain the stationary RICE in accordance with the manufacturer's written instructions or in accordance with the maintenance schedule provided by the manufacturer's authorized service provider. Alternatively, the owner or operator shall conduct preventative maintenance according to the following schedule, including all of the following tuning procedures, if the engine is so equipped, and if such procedures are appropriate to the type of engine.
- 302.1 The following maintenance procedures shall be completed no less frequently than every 300 hours of operation (for engines that operate 300 hours per year or more) or at least once every 12 months (for engines that operate less than 300 hours per year):
- a. Clean the inlet air filter (if so equipped);
 - b. Change oil filter; and
 - c. Change the lubricating oil or conduct an oil analysis to determine Total Base Number, viscosity, and percent water content. The lubricating oil must be replaced within 2 business days after the analytical results are received if any of the following condemning limits are exceeded:
 - (1) Total Base Number is less than 30% of the Total Base Number of the oil when new;

(2) Viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or

(3) Percent water content (by volume) is greater than 0.5.

302.2 The following maintenance procedures shall be completed no less frequently than every 1,000 hours of operation (for engines that operate 1,000 hours per year or more) or at least once every 12 months (for engines that operate less than 1,000 hours per year):

- a. Check the inlet air filter and replace as necessary;
- b. Check all fuel filters and clean as necessary (except cartridge type fuel filters);
- c. Check cartridge type fuel filters and replace as necessary;
- d. Check and adjust the intake and exhaust valves;
- e. Check and adjust the spark plugs (if so equipped);
- f. Check and adjust the spark timing and dwell or fuel injection timing (if adjustable); and
- g. Check and adjust the carburetor mixture (if adjustable).

302.3 The following maintenance procedures shall be completed no less frequently than every 3,000 hours of operation (for engines that operate 3,000 hours per year or more) or at least once every 12 months (for engines that operate less than 3,000 hours per year):

- a. Check spark plugs and ignition points, and replace as necessary (if so equipped);
- b. Check coolant and change as necessary (if so equipped); and
- c. Check the exhaust system and repair all leaks and/or restrictions.

303 **LIMITATIONS FOR STATIONARY RICE – OPACITY:** An owner or operator of a stationary RICE shall not discharge into the ambient air from any such engine any air contaminant, other than uncombined water, in excess of 20% opacity.

304 **LIMITATIONS FOR NON-EMERGENCY ENGINES:**

304.1 **Requirements for Non-Emergency Compression-Ignition Engines that are not Located at a Major Source of NO_x:** An owner or operator of a non-emergency compression-ignition engine that is rated above 250 bhp and is not located at a major source of NO_x shall comply with the engine requirements in Table 324-1, as applicable, depending on the date the engine was manufactured or reconstructed (whichever occurred later) and the rated brake horsepower of the engine:

TABLE 324-1		
MANUFACTURED OR RECONSTRUCTED	RATED BHP	ENGINE REQUIREMENTS*
Prior to October 22, 2003	250-399	770 ppmvd or 10 g/bhp-hr NO _x or turbocharger with aftercooler/intercooler or 4-degree injection timing delay
Prior to October 22, 2003	More than 399	550 ppmvd or 7.2 g/bhp-hr NO _x or turbocharger with aftercooler/intercooler or 4-degree injection timing delay
On or after October 22, 2003	More than 250	530 ppmvd or 6.9 g/bhp-hr NO _x ; 1,000 ppmvd CO; 0.40 g/bhp-hr PM

* ppmvd emission standards are corrected to 15% oxygen.

304.2 Requirements for Non-Emergency Spark-Ignition Engines that are not Located at a Major Source of NO_x: An owner or operator of a non-emergency spark-ignition engine that is rated above 250 bhp and is not located at a major source of NO_x shall comply with the engine requirements in Table 324-2, as applicable, depending on the date the engine was manufactured or reconstructed (whichever occurred later) and whether it is a lean-burn or rich-burn engine:

TABLE 324-2			
LEAN-BURN ENGINES			
MANUFACTURED OR RECONSTRUCTED	NO _x **	VOC**	CO**
Prior to October 22, 2003	280 ppmvd or 4.0 g/bhp-hr or three-way catalyst*	800 ppmvd or 5.0 g/bhp-hr or three-way catalyst*	4,500 ppmvd or three-way catalyst*
On or after October 22, 2003	110 ppmvd or 1.5 g/bhp-hr	Not Applicable	4,500 ppmvd
RICH-BURN ENGINES			
MANUFACTURED OR RECONSTRUCTED	NO _x **	VOC**	CO**
Prior to October 22, 2003	280 ppmvd or 4.0 g/bhp-hr or three-way catalyst*	800 ppmvd or 5.0 g/bhp-hr or three-way catalyst*	4,500 ppmvd or three-way catalyst*
On or after October 22, 2003	20 ppmvd or 0.30 g/bhp-hr	Not Applicable	4,500 ppmvd

* The three-way catalyst shall provide a minimum of 80% control efficiency for NO_x and CO for engines fueled with natural gas, propane, or gasoline. In addition, the three-way catalyst shall also provide a minimum of 50% control efficiency for VOC for engines fueled by gasoline.

** ppmvd emission standards are corrected to 15% oxygen.

304.3 Emission Limits for Non-Emergency Engines that are Located at a Major Source of NO_x: An owner or operator of a non-emergency engine that is rated above 50 bhp and is located at a major source of NO_x shall comply with the engine requirements in Table 324-3, as applicable, depending on the engine type:

TABLE 324-3				
ENGINE TYPE	NO _x *	VOC*	CO*	PM
Spark-Ignition Lean-Burn	110 ppmvd or 1.5 g/bhp-hr	800 ppmvd or 5.0 g/bhp-hr	4,500 ppmvd	Not Applicable
Spark-Ignition Rich-Burn	20 ppmvd ^{3 pt} or 0.30 g/bhp-hr	800 ppmvd or 5.0 g/bhp-hr	4,500 ppmvd	Not Applicable
Compression-Ignition	530 ppmvd or 6.9 g/bhp-hr	Not Applicable	1,000 ppmvd	0.40 g/bhp-hr

* ppmvd emission standards are corrected to 15% oxygen.

305 IDENTICAL REPLACEMENT ENGINE: An identical replacement engine shall be treated as the original stationary RICE that it replaces for the purposes of compliance with this rule.

306 NON-RESETTING TOTALIZING HOUR METER: The owner or operator of a stationary RICE, except for those engines being removed from service under Section 401 of this rule, shall install and operate a non-resetting totalizing hour meter. If the non-resetting totalizing hour meter is found to be malfunctioning, the owner or operator shall:

306.1 Record hours of operation daily until the function of the hour meter is restored; and

306.2 Restore the function of the hour meter within two weeks. Or, if it is not possible to restore the function of the hour meter within two weeks, the owner or operator shall notify the Control Officer in writing and provide a schedule for restoration of the function of the hour meter.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE-STATIONARY RICE BEING REMOVED FROM SERVICE: If a stationary RICE must be removed from service because such engine does not comply with the emission limits listed in Section 300 of this rule, then the stationary RICE shall be removed from service no later than June 23, 2022. The stationary RICE that replaces such engine shall comply with all applicable provisions of this rule upon installation.

402 COMPLIANCE SCHEDULE-NON-RESETTING TOTALIZING HOUR METER: The owner or operator of a stationary RICE that is not equipped with a non-resetting totalizing hour meter on June 23, 2021, and is not being removed from service under Section 401 of this rule, shall install and operate a non-resetting totalizing hour meter on each such engine no later than June 23, 2022.

403 COMPLIANCE SCHEDULE-ENGINES AT A SOURCE THAT BECOMES A MAJOR SOURCE: If a non-emergency engine is located at a source that becomes a major

source of nitrogen oxides after June 23, 2021, the owner or operator shall demonstrate compliance with the emission limits in Table 324-3 within one year after the source becomes a major source of nitrogen oxides.

SECTION 500 – MONITORING AND RECORDS

501 COMPLIANCE DETERMINATION:

501.1 Non-Emergency Engines that are not Located at a Major Source of NO_x: An owner or operator of a non-emergency engine which is subject to the requirements in Section 304.1 or 304.2 of this rule shall demonstrate compliance using one of the following methods, as applicable:

- a. Provide documentation that the stationary RICE is certified by the manufacturer to comply with emission limits in 40 CFR 60 Subpart IIII or 40 CFR 60 Subpart JJJJ that are more stringent than the applicable emission limits in Table 324-1 or 324-2 of this rule, and provide documentation that the engine is installed, operated, and maintained in accordance with the manufacturer's specifications.
- b. Conduct a performance test in accordance with Section 501.4 of this rule at least once every 5 years. The performance test shall demonstrate compliance with one of the following requirements:
 - (1) The applicable emission limits in units of grams per brake horsepower-hour (g/bhp-hr); or
 - (2) The applicable emission limits in units of ppmvd; or
 - (3) The three-way catalyst provides a minimum of 80% control efficiency for NO_x and CO for engines fueled with natural gas, propane or gasoline, and the three-way catalyst also provides a minimum of 50% control efficiency for VOC for engines fueled by gasoline.
- c. Provide documentation that the non-emergency compression-ignition engine was manufactured or reconstructed (whichever occurred later) prior to October 22, 2003 and provide documentation that the non-emergency compression-ignition engine is equipped with a turbocharger with an aftercooler/intercooler.
- d. Provide documentation that the non-emergency compression-ignition engine was manufactured or reconstructed (whichever occurred later) prior to October 22, 2003 and:
 - (1) Provide documentation that the injection timing has been set at 4 degrees below the factory setting for the engine. Written verification of the factory set timing, along with documentation that the engine timing has been delayed by 4 degrees must be submitted; or
 - (2) Provide documentation that the injection timing has been set at 4 degrees below the manufacturer's standard timing of the engine. Written verification of the manufacturer's standard timing of the engine prior to tuning for NO_x control, along with documentation that the timing has been delayed by 4 degrees must be submitted; or

- (3) Provide documentation that the injection timing has been set at 16 degrees below top dead center or less (if information regarding the manufacturer's standard timing or factory set timing is not available).

501.2 Non-Emergency Engines that are Located at a Major Source of Nitrogen

Oxides: An owner or operator of a non-emergency engine which is subject to emission limits in Section 304.3 of this rule shall demonstrate compliance by conducting a performance test in accordance with Section 501.4 of this rule at least once every 2 years. The performance test shall demonstrate compliance with the applicable emission limits in units of grams per brake horsepower-hour (g/bhp-hr) or ppmvd.

501.3 Representative Performance Testing: An owner or operator may demonstrate compliance with the applicable emission limits or control efficiency requirements in Table 324-1, Table 324-2, or Table 324-3 of this rule by conducting representative performance testing in accordance with Section 501.4 of this rule, provided all of the following requirements are satisfied:

- a. The engines are located at the same stationary source;
- b. The engines were produced by the same manufacturer, have the same model number or other manufacturer's designation in common, and have the same rated capacity and operating specifications;
- c. The engines are operated and maintained in a similar manner;
- d. At least one engine or one third of the engines in the specified group, whichever is greater, are tested each time a performance test is required;
- e. Each time a performance test is required, different engines are tested so that all engines in the specified group are tested before any engines in the representative group are retested; and
- f. If emissions from any engine in the specified group exceed an applicable emission limit, or if the control efficiency for any pollutant controlled by a three-way catalyst is lower than the required control efficiency, the owner or operator shall demonstrate that each engine in the specified group is in compliance with the applicable limits by conducting a performance test on each engine in the specified group.

501.4 Performance Test Conditions: Performance tests shall be conducted using the test methods listed in Section 503 of this rule. Testing for stationary RICE shall be completed at either the maximum operating load or no less than 80% of the rated bhp. If the owner or operator of an engine demonstrates to the Control Officer that the engine cannot operate at these conditions, then emissions source testing shall be performed at the highest achievable continuous rated bhp or under the typical duty cycle or typical operational mode of the engine. The result of the performance test shall be the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour.

501.5 Fuel-Sulfur Verification: The owner or operator of an engine fueled with gasoline shall submit documentation that gasoline was purchased within the United States. The owner or operator of an engine fueled with diesel, natural gas, LPG, or an

alternative fuel shall submit one of the following documents listing the accurate sulfur content of the fuel based on enforceable test methods as approved by the Administrator to determine the sulfur content:

- a. Fuel receipts, or
- b. Contract specifications, or
- c. Pipeline meter tickets, or
- d. Fuel supplier information, or
- e. Purchase records, or
- f. Test results of the fuel for sulfur content.

501.6 Waste Derived Fuel Gas - Sulfur Verification: The owner or operator shall submit documentation of the sulfur content of the waste derived fuel gas to the Control Officer upon request. The sulfur content of gaseous fuels shall be determined by South Coast Air Quality Management District Method 307-91 Determination of Sulfur in a Gaseous Matrix.

502 RECORDKEEPING/RECORDS RETENTION: The owner or operator of a stationary RICE subject to this rule shall comply with the following requirements and retain records for at least 5 years:

502.1 Stationary RICE List: Maintain a list of stationary RICE that includes all of the following information for each stationary RICE: combustion type (compression-ignition, or lean-burn spark-ignition, or rich-burn spark-ignition); manufacturer; model designation, rated bhp, serial number, and the location of each engine at the facility. If the equipment list associated with the current permit includes all of the required information for each stationary RICE located at the facility, this requirement may be fulfilled by keeping a complete copy of the current permit, including the equipment list, in a readily accessible location at the facility where the engines are located, and by providing the equipment list to the Control Officer upon request.

502.2 Operation Records: An owner or operator of a stationary RICE shall maintain records of the monthly and 12-month rolling total hours of operation for each stationary RICE. For emergency engines, the operation records shall also include:

- a. Monthly and annual hours of operation for reliability related activities such as engine readiness, calibration, or maintenance, or to prevent the occurrence of an unsafe condition during electrical system maintenance; and
- b. The number of operating hours for emergency use and an explanation for the emergency use.

502.3 Maintenance Records: An owner or operator of a stationary RICE shall maintain records of all stationary RICE maintenance (including the date when maintenance was performed and the maintenance procedures that were performed). If an owner or operator of a non-emergency engine demonstrates compliance with the requirements in Section 304.1 of this rule using the method specified in Section 501.1(d) of this rule, the maintenance record shall include documentation of the injection timing setting each time maintenance is performed on the stationary RICE. In addition, one of the

following documents shall be available at all times at the facility where the stationary RICE is located:

- a. The manufacturer's written instructions for operation and maintenance of each stationary RICE;
- b. A written maintenance schedule provided by the manufacturer's authorized service provider; or
- c. A written maintenance plan indicating which of the tuning procedures listed in Section 302 of this rule are applicable to each stationary RICE.

502.4 Fuel Records:

- a. Maintain records of the type and amount of fuel purchased for use in the stationary RICE (e.g. receipts, pipeline tickets, or bills of lading); and
- b. Maintain records of the sulfur content of any fuel that is used in the stationary RICE, excluding gasoline. For gasoline, maintain records that the fuel was purchased in the United States.

502.5 Manufacturer's Operation and Maintenance Instructions: An owner or operator of an engine that is subject to the requirements of Section 302 of this rule shall keep the manufacturer's written instructions for operation and maintenance of the engine available at the facility where the engine is located at all times. If the manufacturer's written instructions are not available, the owner or operator shall keep a preventative maintenance plan, indicating which procedures in Section 302 of this rule are appropriate to the engine, available at the facility where the engine is located at all times.

502.6 Nonroad Engine Records: An owner or operator of a nonroad engine shall maintain the following records for each non-road engine:

- a. Date that each engine is brought to the stationary source; and
- b. For engines located at a stationary source greater than 14 consecutive days:
 - (1) Make, model, serial number, and rated capacity (bhp hours) of the engine; and
 - (2) Date of each instance in which the engine is moved from its existing location, and the reason why the engine was moved; and
 - (3) Fuel type and sulfur content of the fuel.

503 COMPLIANCE DETERMINATION-TEST METHODS INCORPORATED BY REFERENCE: The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods are incorporated by reference in Rule 360 and Appendix G of the Maricopa County Air Pollution Control Regulations. Alternative EPA-approved test methods may be used upon written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method will constitute a violation. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department.

- 503.1** EPA Reference Methods 1 (“Sample and Velocity Traverses for Stationary Sources”) and 1A (“Sample and Velocity Traverses for Stationary Sources with Small Stacks or Ducts”) (40 CFR 60, Appendix A).
- 503.2** EPA Reference Methods 2 (“Determination of Stack Gas Velocity and Volumetric Flow Rate”), 2A (“Direct Measurement of Gas Volume Through Pipes and Small Ducts”), 2C (“Determination of Stack Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts”), and 2D (“Measurement of Gas Volumetric Flow Rates in Small Pipes and Ducts”) (40 CFR 60, Appendix A).
- 503.3** EPA Reference Methods 3 (“Gas Analysis for the Determination of Dry Molecular Weight”), 3A (“Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)”), 3B (“Gas Analysis for the Determination of Emission Rate Correction Factor or Excess Air”), and 3C (“Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources”) (40 CFR 60, Appendix A).
- 503.4** EPA Reference Method 4 (“Determination of Moisture Content in Stack Gases”) (40 CFR 60, Appendix A).
- 503.5** EPA Reference Method 5 (“Determination of Particulate Emissions from Stationary Sources”) (40 CFR 60, Appendix A)
- 503.6** EPA Reference Method 202 (“Dry Impinger Method for Determining Condensable Particulate Emissions from Stationary Sources”) (40 CFR 51, Appendix M).
- 503.7** EPA Reference Methods 7 (“Determination of Nitrogen Oxide Emissions from Stationary Sources”), 7A (“Determination of Nitrogen Oxide Emissions from Stationary Sources - Ion Chromatographic Method”), 7B (“Determination of Nitrogen Oxide Emissions from Stationary Sources – Ultraviolet Spectrophotometry Method”), 7C (“Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline Permanganate/Colorimetric Method”), 7D (“Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline-Permanganate/Ion Chromatographic Method”), and 7E (“Determination of Nitrogen Oxide Emissions from Stationary Sources – Instrumental Analyzer Procedure”), (40 CFR 60, Appendix A).
- 503.8** EPA Reference Method 9 (“Visual Determination of the Opacity of Emissions from Stationary Sources”) (40 CFR 60, Appendix A).
- 503.9** EPA Reference Method 10 (“Determination of Carbon Monoxide from Stationary Sources”) (40 CFR 60, Appendix A).
- 503.10** EPA Reference Method 18 (“Measurement of Gaseous Organic Compound Emissions by Gas Chromatography”) (40 CFR 60, Appendix A).
- 503.11** EPA Reference Method 25A (“Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer”) (40 CFR 60, Appendix A).
- 503.12** ASTM D2622-05 (“Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry”).
- 503.13** ASTM D4294-02 or D4294-03 (“Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry”).

- 503.14** ASTM D5504-01 or D5504-08 (“Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence”).
- 503.15** South Coast Air Quality Management District Method 307-91 (“Determination of Sulfur in a Gaseous Matrix”), revised 1994.

Revised 07/13/88
Revised 06/22/92
Revised 06/19/96
Revised 04/07/99
Revised 04/21/04

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 331
SOLVENT CLEANING**

SECTION 100 - GENERAL

- 101 **PURPOSE:** To limit the emissions of volatile organic compounds (VOCs) from cleaning operations.
- 102 **APPLICABILITY:** This rule is applicable to operations using VOC-containing solvents to remove impurities from exterior or interior surfaces. 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 requirements. In such case, the more stringent requirement shall apply. In any instance where more than one of the requirements set forth in this rule may be applicable, the most restrictive requirement shall apply.
- 102.1 Solvents regulated by this rule may also be regulated by New Source Performance Standards (NSPS) in Rule 360 of these rules and/or National Emission Standards for Hazardous Air Pollutants (NESHAPs) in Rule 370 of these rules.
- 102.2 This rule is not applicable to:
- a. A solvent cleaning operation that is subject to or specifically exempted by an EPA approved version of another rule within Regulation III of these rules.
 - b. Janitorial cleaning.
 - c. Testing for surface cleanliness or the cleaning of laboratory equipment at the laboratory.
 - d. A cleaning-solvent that meets any of the following:
 - (1) Is composed of at least 98% water by either weight or volume; or
 - (2) Contains only water and material which is a dry solid before mixing with water; or
 - (3) Has a VOC content not exceeding 20 grams per liter (0.17 lb/gal).

102.3 Partial or conditional exemptions from this rule are set forth in Section 308 of 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 AGITATION, AGITATED – A means or state that moves cleaning liquid continuously back and forth, or up and down. This includes such motion created by sound waves, and to the splashing of a rinse stream operated at a pressure that creates a trajectory exceeding 2 feet along the horizontal plane intersecting the nozzle when the nozzle is at a 45° angle above the plane. Liquid motion incidental to a continuous entrance or withdrawal of objects undergoing cleaning is not agitation.
- 202 BATCH CLEANING MACHINE – A solvent cleaning machine in which individual parts or a set of parts move through the entire cleaning cycle before new parts are introduced into the solvent cleaning machine. A solvent cleaning machine, such as a ferris wheel or a cross-rod degreaser, that cleans multiple batch loads simultaneously and is manually loaded, is a batch cleaning machine.
- 203 BLASTING/MISTING WITH SOLVENT – Cleaning with an applicator that propels cleaning-solvent through the air with a pressure exceeding 10 psig (516 mm Hg), or that atomizes the solvent into mist and/or droplets.
- 204 CABINET STYLE CLEANING MACHINES – Cleaning machines typically similar in design to domestic dishwashers that are completely enclosed except for optional stack, and have their own reservoir and sump.
- 205 CARRY-OUT – Solvent carried out of a cleaning machine along with a part being removed from the cleaning machine. The solvent may exist as a liquid coating the part or the part's hanger, or as a liquid entrapped in cavities and irregular surfaces, or entrapped by capillary action within or on the part.
- 206 CLEANING-SOLVENT – Solvent used for cleaning that contains more than 2.0% VOC by weight and more than 20 grams of VOC per liter (0.17 lb/gal).
- 207 CONFORMING SOLVENT - A cleaning-solvent having a total VOC vapor pressure at 68°F (20°C) not exceeding 1 millimeter of mercury column.
- 208 DEGREASER – See SOLVENT CLEANING MACHINE.
- 209 DRY SOLID - Any substance that appears and feels dry. Evaporating solids, all of which have a strong odor, are not included.
- 210 EMISSION CONTROL SYSTEM (ECS) - A system for reducing emissions of volatile organic compounds, consisting of both a capture system and control device(s).
- 211 FLUSHING WITH SOLVENT - Introducing cleaning-solvent directly into the internal space(s) of an object or assembly using a hose or pipe. Rinsing the outside of an object or assembly and swishing an object or assembly in cleaning-solvent are not considered flushing with solvent. Such activities must comply with Section 303.1 of this rule.

212 FREEBOARD HEIGHT –

212.1 Batch Cleaning Machine: The vertical distance from the solvent/air interface to the least elevated point of the top-rim when the cover is open or removed, measured during idling mode.

212.2 In-Line Cleaning Machine: The vertical distance from the solvent/air interface to the lowest entry/exit point, measured during idling mode.

213 FREEBOARD RATIO – The ratio of the solvent cleaning machine freeboard height to the smaller interior dimension (length, width, or diameter) of the solvent cleaning machine.

214 HEATED SOLVENT - Any cleaning-solvent which is heated by a device to a temperature exceeding 120°F (49°C).

215 IMPERVIOUS – Neither absorbing, adsorbing, nor allowing penetration through, by liquid or vapors.

216 IN-LINE CLEANING MACHINE (CONTINUOUS CLEANING MACHINE) – A solvent cleaning machine that uses an automated handling system, typically a conveyor or automated arm(s), to automatically provide a continuous supply of items to be cleaned. The cleaned item leaves by a route different from its entry route.

217 JANITORIAL CLEANING – The cleaning of building or facility components to keep work areas in clean condition. Building or facility components include, but are not limited to, floors, ceilings, walls, windows, doors, stairs, bathrooms, furnishings, textiles, wash rags, uniforms, and exterior surfaces of office equipment.

218 LEAK – The state or condition in which a cleaning-solvent, excluding a Low-VOC Cleaner, is allowed to seep or drip, or otherwise enters or escapes, at either of the following rate or magnitude:

218.1 Three or more drops of liquid cleaning-solvent per minute; or

218.2 Any puddle of cleaning-solvent greater than 1 square inch.

219 LOW-VOC CLEANER - Any solution or homogeneous suspension that, as used, contains less than 50 grams of VOC per liter of material (0.42 lb VOC/gal) or is at least 95% water by weight or volume as determined by an applicable test method in Section 502 of this rule.

220 MAKE-UP SOLVENT - A cleaning-solvent that replaces solvent lost through evaporation or other means, and that is added to the solvent remaining in a cleaning machine (degreaser) to bring solvent quantity to the desired level.

221 MATERIAL VOC CONTENT – See VOC CONTENT OF MATERIAL.

222 NON-CONFORMING SOLVENT - A cleaning-solvent having a total VOC vapor pressure at 68°F (20°C) exceeding 1 millimeter of mercury column.

223 NON-PRECURSOR ORGANIC COMPOUND – Any of the organic compounds which have been designated by the EPA as having negligible photochemical reactivity. EPA

designates such compounds as "exempt". A listing of the compounds is found in Rule 100.

- 224 ORGANIC COMPOUND – Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.
- 225 REFRIGERATED FREEBOARD CHILLER – A control device which is mounted above any cooling-water jacket or primary condenser coils, consisting of secondary coils which carry a refrigerant to provide a chilled air blanket above the solvent vapor/air interface to reduce emissions from the cleaning machine (degreaser) bath.
- 226 REMOTE RESERVOIR CLEANING MACHINE (DEGREASER) - Any non-vapor cleaning machine (degreaser) in which the reservoir for storing the cleaning-solvent is completely separated by impervious surfaces from the sink or basin where cleaning is performed, except for a connecting tube through which solvent returns to the reservoir when cleaning is stopped.
- 227 SEALED SYSTEM - An Air-tight or Airless Cleaning System that is operated and equipped pursuant to Section 304.3 of this rule.
- 228 SOLVENT – For the purpose of this rule, any liquid or vapor which is used to dissolve, clean, strip, or remove impurities, coatings, contaminants, or films from surfaces or from internal spaces and voids. In addition to VOC-containing solvents, this also includes plain water and mixtures containing water.
- 229 SOLVENT CLEANING MACHINE (CLEANING MACHINE) (DEGREASER) - Any liquid container and ancillary equipment designed to clean surfaces and/or remove surface contaminants using cleaning-solvents.
- 230 SOLVENT/AIR INTERFACE –
 - 230.1 Non-Vapor Cleaner: The location of contact between the liquid solvent and the air.
 - 230.2 Vapor Cleaner: The location of contact between the concentrated layer of solvent vapor and the air.
- 231 SOLVENT/AIR INTERFACE AREA –
 - 231.1 Non-Vapor Cleaner:
 - a. With Included/Integral Reservoir: The surface area of liquid cleaning-solvent that is exposed to the air.
 - b. With Remote Reservoir: The surface area of the solvent sink or work area.
 - 231.2 Vapor Cleaner: The area of the horizontal plane that is located halfway between the highest and lowest points of the primary condenser coils and which contacts the interior walls of the cleaning machine.
- 232 TOTAL VOC VAPOR PRESSURE (VOC COMPOSITE PARTIAL PRESSURE) - Within a solution or homogenous mixture, it is the sum of the partial pressures of all those

components that are defined as VOCs, calculated according to the formula in Section 502.3 of this rule.

233 VAPOR CLEANING MACHINE - Any cleaning machine in which solvent-vapor from boiling cleaning solvent is utilized for cleaning object.

234 VOC CONTENT OF MATERIAL(MATERIAL VOC CONTENT) -

$$\text{VOC CONTENT OF MATERIAL as a percent} = \frac{W_s - W_w - W_{es}}{W_m} \times 100\%$$

Using consistently either pounds or grams in the calculations:

Where: W_s = weight of volatile material in pounds (or grams), including water, non-precursor organic compounds, and dissolved vapors.

W_w = weight of water in pounds (or grams)

W_{es} = total weight of non-precursor organic compounds in pounds (or grams)

W_m = weight of total material in pounds(or grams)

$$\text{VOC CONTENT OF MATERIAL in pounds per gallon (g/l)} = \frac{W_s - W_w - W_{es}}{V_m}$$

Using consistently either English or metric measures in the calculations

Where: W_s = weight of all volatile material in pounds (or grams) including VOC, water, non-precursor organic compounds and dissolved vapors.

W_w = weight of water in pounds (or grams)

W_{es} = weight of all non-precursor compounds in pounds (or grams)

V_m = volume of total material in gallons (or liters)

235 VOLATILE ORGANIC COMPOUND (VOC) - Any organic compound which participates in atmospheric photochemical reactions, except non-precursor organic compounds.

236 WIPE CLEANING - That method of removing contaminants from a surface by physically rubbing or automatically rubbing with a porous or absorbent material, such as a rag, paper, sponge, or cotton swab, moistened with a solvent.

SECTION 300 - STANDARDS

301 SOLVENT HANDLING REQUIREMENTS: Any person to whom this rule applies must comply with all of the following:

301.1 All cleaning-solvent, including solvent soaked materials, shall be kept in closed, leakfree, impervious containers that are opened only when adding or removing material.

a. Porous or absorbent materials used for wipe cleaning shall be stored in closed containers when not in use.

- b. Each container shall be clearly labeled with its contents.

301.2 If any cleaning-solvent escapes from a container:

- a. Wipe up or otherwise remove immediately if in accessible areas.
- b. For areas where access is not feasible during normal production, remove as soon as reasonably possible.

301.3 Unless records show that VOC-containing cleaning material was sent offsite for legal disposal, it will be assumed that it evaporated on site.

302 **EQUIPMENT REQUIREMENTS FOR ALL CLEANING MACHINES:** Any person operating a cleaning machine to which this rule applies must comply with all of the following:

302.1 Provide a leakfree, impervious container (degreaser) for the solvents and the articles being cleaned.

- a. The VOC-containment portion shall be impervious to VOC-containing liquid and vapors.
- b. No surface of any freeboard required by this rule shall have an opening or duct through which VOC can escape to the atmosphere, except as controlled by an ECS, or as required by OSHA.

302.2 Properly maintain and operate all cleaning machine equipment required by this rule and any of its emission controls required by this rule.

303 **SPECIFIC OPERATING & SIGNAGE REQUIREMENTS FOR CLEANING MACHINES:** Any person who cleans with cleaning-solvent other than a Low-VOC Cleaner must conform to all of the following operating requirements:

303.1 Operating Requirements:

- a. Fans: Do not locate nor position comfort fans in such a way as to direct airflow across the opening of any cleaning machine.
- b. Cover: Do not remove any device designed to cover the solvent unless processing work in the cleaning machine or maintaining the machine.
- c. Draining: Drain cleaned parts for at least 15 seconds after cleaning or until dripping ceases, whichever is later.
- d. Spraying: If using a cleaning-solvent spray system,
 - (1) Use only a continuous, undivided stream (not a fine, atomized, or shower type spray).
 - (2) Pressure at the orifice from which the solvent emerges shall not exceed 10 psig and shall not cause liquid solvent to splash outside of the solvent container.

- (3) In an in-line cleaning machine, a shower-type spray is allowed, provided that the spraying is conducted in a totally confined space that is separated from the environment.
 - (4) Exceptions to foregoing Sections 303.1d(1), (2), and (3) are provided for in Section 307 of this rule.
- e. **Agitation:** No person shall cause agitation of a cleaning-solvent in a cleaning machine by sparging with air or other gas. Covers shall be placed over ultrasonic cleaners when the cleaning cycle exceeds 15 seconds.
- f. **No Porous Material:**
- (1) Do not clean nor use porous or absorbent materials to clean parts or products in a cleaning machine. For the purpose of this rule, porous or absorbent materials include, but are not limited to, cloth, leather, wood, and rope.
 - (2) Do not place an object with a sealed wood handle, including a brush, in or on a cleaning machine.
 - (3) Do not place porous or absorbent materials, including, but not limited to, cloth, leather, wood, and rope on a cleaning machine.
- g. **Vent Rates:** The ventilation rate at the cleaning machine shall not exceed 65 cfm per square foot of evaporative surface ($20 \text{ m}^3/\text{min.}/\text{m}^2$), unless that rate must be changed to meet a standard specified and certified by a Certified Safety Professional, a Certified Industrial Hygienist, or a licensed professional engineer experienced in ventilation, to meet health and safety requirements.
- h. **Hoist Speed:** Limit the vertical speed of mechanical hoists moving parts in and out of the cleaning machine to a maximum of 2.2 inches per second and 11 ft/min. (3.3 m/min.).
- i. **Contamination Prevention:** Prevent cross contamination of solvents regulated by Section 304 of this rule with solvents that are not so regulated. Use signs, separated work-areas, or other effective means for this purpose. This includes those spray gun cleaning solvents that are regulated by another rule of these rules.
- j. **Filtration Devices:** If a filtration device (e.g., to remove oils, greases, sludge, and fine carbon from cleaning solvent) is inherent in the design of the cleaning machine, then such filtration device shall be operated in accordance with manufacturer's specifications and in accordance with the following requirements:
- (1) The filtration device shall be fully submerged in cleaning solvent at all times during filtration.
 - (2) When the filtration device is completely saturated and must be removed from the cleaning machine, the filtration device shall be

drained until no liquid can flow from the filtration device. Draining and drying such filtration device shall be conducted in a sealed container with no exhaust to the atmosphere or work area.

- (3) After the filtration device is dry, the filtration device shall be stored in a closed, leakfree, impervious container that is legibly labeled with its contents and that remains covered when not in use. Disposal of the filtration device shall be done in a manner that inhibits VOC evaporation and that is in compliance with appropriate/legal methods of disposal.

303.2 Signage Requirements: Any person who uses cleaning-solvent, other than Low-VOC Cleaner, in any solvent cleaning machine (degreaser) or dip tank shall provide on the machine, or within 3¼ feet (1 meter) of the machine, a permanent, conspicuous label or placard which includes, at a minimum, each of the following applicable instructions, or its equivalent:

- a. "Keep cover closed when parts are not being handled." (This is not required for remote reservoir cleaners.)
- b. "Drain parts until they can be removed without dripping."
- c. "Do not blow off parts before they have stopped dripping."
- d. "Wipe up spills and drips as soon as possible; store used spill rags [or 'wiping material'] in covered container."
- e. "Don't leave cloth or any absorbent materials in or on this tank."
- f. For cleaning machines with moving parts such as hoists, pumps, or conveyors, post: "Operating instructions can be obtained from _____," listing a person or place where the instructions are available.

304 SOLVENT SPECIFICATIONS FOR NON-VAPOR CLEANING AND DEGREASING: [Operating requirements specifically for vapor cleaning machines are in the Appendix.] All cleaning solvents, except Low-VOC Cleaners, used in non-boiling cleaning machines shall comply with Section 304.1 or Section 304.2 or Section 304.3, as follows:

- 304.1 Use a cleaning-solvent having a total VOC vapor pressure at 68°F (20°C) not exceeding 1 millimeter of mercury column, as determined by the standards described in Section 500 of this rule.
- 304.2 ECS: Use an ECS to capture and process VOC emissions in accordance with Section IV of the Appendix within this rule; or
- 304.3 Sealed System: Use a Sealed System that is an Air-tight or Airless Cleaning System which is operated according to the manufacturer's specifications and, unless otherwise indicated by the manufacturer, meets all of the following requirements:
 - a. Has a door or other pressure-sealing apparatus that is shut during each cleaning and drying cycle; and

- b. Has a differential pressure gauge that always indicates the pressure in the sealed chamber when occupied or in active use; and
- c. Any associated pressure relief device(s) shall be so designed and operated as to prevent liquid cleaning-solvents from draining out.

305 NON-VAPOR BATCH CLEANING MACHINES: Equipment requirements for non-vapor batch cleaning machines with remote reservoirs are set forth in Section 305.1 of this rule. Equipment standards applicable to non-vapor batch cleaning machines with internal reservoirs (non-remote) are set forth in Section 305.2 of this rule. Non-vapor batch cleaning machines with either remote or internal reservoirs that use cleaning-solvents that are either heated, agitated or non-conforming are subject to additional provisions set forth in Section 305.3 of this rule. Low-VOC Cleaners are exempt from this section.

305.1 With Remote Reservoir: A batch cleaning machine with remote reservoir, including cabinet type(s), shall be equipped with the following:

- a. A sink-like work area or basin which is sloped sufficiently towards the drain so as to prevent pooling of cleaning-solvent.
- b. A single, unimpeded drain opening or cluster of openings served by a single drain for the cleaning-solvent to flow from the sink into the enclosed reservoir. Such opening(s) shall be contained within a contiguous area not larger than 15.5 square inches (100 cm²).
- c. Solvent Return: Provide a means for drainage of cleaned parts such that the drained solvent is returned to the cleaning machine.

305.2 With Internal Reservoir (Non-Remote): A batch cleaning machine without a remote reservoir shall be equipped with all of the following:

- a. Have and use an internal drainage rack or other assembly that confines within the freeboard all cleaning-solvent dripping from parts and returns it to the hold of the cleaning machine (degreaser); and
- b. Have an impervious cover which when closed prevents cleaning-solvent vapors in the cleaning machine from escaping into the air/atmosphere when not processing work in the cleaning machine.
 - (1) A cover shall be fitted so that in its closed position the cover is between the cleaning-solvent and any lip exhaust or other safety vent, except that such position of cover and venting may be altered by an operator for valid concerns of flammability established in writing and certified to by a Certified Safety Professional or a Certified Industrial Hygienist to meet health and safety requirements.
 - (2) A cover is not required when an ECS is used in accordance with Section IV of the Appendix within this rule.
- c. In the absence of additional applicable freeboard standards, freeboard height shall be not less than 6 inches (15.2 cm); and

- d. The freeboard zone shall have a permanent, conspicuous mark that locates the maximum allowable solvent level which conforms to the applicable freeboard requirements.

305.3 Using Cleaning-Solvent That Is Heated, Agitated, Or Is Non-Conforming: If a cleaning machine uses a cleaning-solvent at a temperature above 120°F (49°C), uses non-conforming solvent if allowed by Section 305.3(d) of this rule, or agitates the solvent, then comply with one of the following:

- a. Remote Reservoir Cleaning Machines: For a remote reservoir cleaning machine, comply with Section 305.1 of this rule and one of the following:

- (1) Use a stopper in the drain whenever the sink or cabinet is empty of solvent and nothing is being handled in the sink; or
- (2) Cover the sink or cabinet whenever the sink or cabinet is empty of solvent and nothing is being handled in the sink.

- b. Internal Reservoir Cleaning Machines: For an internal reservoir cleaning machine, comply with Section 305.2 of this rule and either Section (1) or (2) that follow:

- (1) A Water Cover: A floating layer of water (insoluble in the solvent) at least 1 inch thick, and a freeboard at least 6 inches above the top of the solvent shall be present; or
- (2) Freeboard And Cover:
 - (a) The basin shall have a freeboard ratio of 0.75 or greater and an impervious cover shall cover the basin whenever work is not being processed; and
 - (b) If a non-conforming solvent is used, the cover shall be of a sliding or rolling type which is designed to easily open and close in a horizontal plane without disturbing the vapor zone.

- c. Cabinet Style: Keep a cabinet-style cleaning machine closed at all times that it contains cleaning-solvent, except when introducing or removing work from the machine. If blasting or misting with cleaning-solvent, also conform to the applicable requirements of Section 307 of this rule.

- d. Non-Conforming Solvent: A non-conforming solvent may be used in operations to which this rule applies, if at least one of the following is met:

- (1) The emissions from the operation shall be controlled by an ECS per Section 304.2 of this rule or by a Sealed System per Section 304.3 of this rule; or
- (2) The operation is exempted per Section 308.2 of this rule; or
- (3) The operation is both exempted per Section 308.3 of this rule and complies with Section 305.3 of this rule, or for in-line

machines, complies with all of Section 306 of this rule except Section 306.4 of this rule.

305.4 ECS Alternative: An owner and/or operator is allowed to meet the requirements of any one or combination of the requirements of Sections 305.1, 305.2 and/or 305.3 of this rule by operating an ECS in accordance with Section IV of the Appendix within this rule whenever any requirement of Sections 305.1, 305.2 and/or 305.3 of this rule is not met.

306 NON-VAPOR IN-LINE CLEANING MACHINES: No person shall operate a non-vapor in-line cleaning machine using cleaning-solvent unless it complies with Sections 306.1, 306.2, and 306.3 of this rule:

306.1 Features:

- a. Carry-Out Prevention: Equip the cleaning machine with either a drying tunnel or another means, such as a rotating basket, sufficient to prevent cleaned parts from carrying out cleaning-solvent liquid or vapor.
- b. Enclosed Design: An in-line cleaning machine shall be fully enclosed except for entrance and exit portals.
- c. Cover: During shutdown hours or if the cleaning machine is idle for more than 30 minutes, a cover shall be used to close the entrance and exit and any opening greater than 16 square inches (104 cm²).

306.2 Minimized Openings: Entrances and exits should silhouette workloads so that the average clearance between parts and the edge of the cleaning machine opening is either less than four inches (10 cm), or less than 10% of the width of the opening.

306.3 The machine shall have a freeboard ratio greater than or equal to 0.75.

306.4 ECS Alternative: An owner and/or operator is allowed to meet the requirements of any one or combination of Sections 306.1(b), 306.1(c), 306.2, and/or 306.3 of this rule by operating an ECS that controls VOC vapor from processes addressed by the requirement(s). Such ECS shall be operated in accordance with Section IV of the Appendix within this rule.

307 SPECIAL NON-VAPOR CLEANING SITUATIONS:

307.1 Blasting/Misting With Conforming Solvent: Any person blasting or misting with conforming solvent shall operate and equip the device(s) as follows:

- a. Equipment: The device shall have internal drainage, a reservoir or sump, and a completely enclosed cleaning chamber, designed so as to prevent any perceptible liquid from emerging from the device; and
- b. Operation: The device shall be operated such that there is no perceptible leakage from the device except for incidental drops from drained, removed parts.

307.2 **Blasting/Misting With Non-Conforming Solvent:** Any person shall use a Sealed System pursuant to Section 304.3 of this rule for all blasting or misting with a non-conforming solvent.

307.3 **High Pressure Flushing:** Cleaning systems using cleaning-solvent that emerges from an object undergoing flushing with a visible mist or at a pressure exceeding 10 psig, shall comply as follows:

- a. **Conforming Solvent:** For conforming solvent, use a containment system that is designed to prevent any perceptible cleaning-solvent liquid from becoming airborne outside the containment system, such as a completely enclosed chamber.
- b. **Non-Conforming Solvent:** Use a Sealed System for non-conforming solvent.

307.4 **ECS Alternative:** An owner and/or operator is allowed to meet the requirement(s) of Section 307.1 and/or Section 307.2 of this rule by operating an ECS that controls VOC vapor from processes addressed by the requirement(s). The ECS shall be operated pursuant to Section IV of the Appendix within this rule.

308 **EXEMPTIONS:**

308.1 **Categorical Exemptions:**

- a. Industries and cleaning operations that are not regulated by this rule include, but are not limited to, the following EPA approved versions of the VOC rules in Regulation III of these rules:
 - (1) Dry cleaning with petroleum solvents (Rule 333);
 - (2) Printing and graphic arts coating (Rule 337);
 - (3) Semiconductor manufacturing (Rule 338);
 - (4) Automotive windshield washer fluid (Rule 344); and
 - (5) Architectural Coating (Rule 335).
- b. All operations regulated by the following NESHAPs are exempt from Rule 331:
 - (1) National Emission Standards for Halogenated Solvent Cleaning (40 CFR 63, subpart T). This includes the de minimis amounts of solvent VOCs that are exempted by subpart T.
 - (2) National Emission Standards for Perchloroethylene for Dry Cleaning Facilities, (40 CFR 63, subpart M).
- c. **Exemptions For Qualified Operations:**
 - (1) **Cleanup Of Coating-Application Equipment:** Operations involving the cleanup of coating-application equipment that are subject to

or specifically exempted by an EPA approved version of another rule in Regulation III of these rules are exempt from Rule 331. Examples include Rule 336 (Surface Coating Operations), Rule 342 (Coating Wood Furniture And Fixtures), and Rule 346 (Wood Coating).

- (2) Aerospace: Wipe cleaning of aerospace components is subject to Rule 348 of these rules, whereas the cleaning of aerospace components in a dip tank or a cleaning machine is subject to Rule 331.

308.2 Partial Exemption From Section 300: The following are exempt from sections of Section 300 of this rule as noted:

- a. Wipe Cleaning: The provisions of Sections 302 through 307 of this rule do not apply to wipe cleaning. Recordkeeping provisions in Section 500 of this rule do apply to wipe cleaning.
- b. Small Cleaners: The provisions of Sections 303 through 307 of this rule shall not apply to any non-vapor cleaning machine (degreaser) or dip-tank fitting either of the following descriptions, except that these shall be covered when work is not being processed:
 - (1) A small cleaner having a liquid surface area of 1 square foot (0.09 square meters) or less, or
 - (2) A small cleaner having a maximum capacity of one gallon (3.79 liters) or less.

308.3 Exemptions From Section 304: The U.S. Government Printing Office "Standard Industrial Classification Manual, 1987" (and no future editions) is incorporated by reference and is on file at Maricopa County Environmental Services Department, 1001 N. Central Avenue, Suite 201, Phoenix, Arizona 85004-1942. The following are exempt from Section 304 of this rule:

- a. Non-furniture medical devices included in Standard Industrial Classification (SIC) codes 3841, 3843, 3844, or 3845, and products for internal use in 3842;
- b. Electronic products for space vehicles and communications equipment in SIC codes 3661, 3663, 3669, 3677, 3678, 3679, and 3769; and
- c. Production processes having clean-room standards equal to or more stringent than class 100,000 (particles/m³); and
- d. Low viscosity solvent used to clean an aerospace component if the Federal Aviation Authority, the US Department of Defense, or a US Military specification designates that the cleanliness of the component is critical to the flight safety of a complete aerospace vehicle. By January 1, 2001, any such solvents shall be listed in an MCESD air pollution permit, conditioned upon a sufficient demonstration by the user that no compliant substitute exists.

- 308.4 Comfort Fans: The Section 303.1(a) prohibition against fans and fan-drafts being close to cleaning machines does not apply to a totally enclosed cleaning machine that cannot be penetrated by drafts.
- 308.5 Vehicle Refinishing: Dip cleaning of vehicle or mobile equipment surfaces is subject to this rule.
- 308.6 Aerosol cans, squirt bottles, and other solvent containers intended for handheld use shall meet the requirements in Sections 301 and 500 of this rule.
- 308.7 A Low-VOC Cleaner is subject only to Sections 301, 302, 307.1, 501.1(a), and 501.2 of this rule.

309 REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND ECS MONITORING EQUIPMENT: For the purpose of this rule, an ECS shall be approved in writing by the Control Officer and shall be designed and operated in accordance with good engineering practices.

309.1 Operation And Maintenance (O&M) Plan Required For ECS:

- a. General Requirements: An owner and/or operator shall provide and maintain (an) O&M Plan(s) for any ECS, any other emission processing equipment, and any ECS monitoring devices that are used pursuant to this rule or pursuant to an air pollution control permit. An owner and/or operator shall comply with all the identified actions and schedules provided in each O&M Plan.
- b. Approval By Control Officer Of Initial O&M Plan(s): An owner and/or operator shall submit to the Control Officer for written approval the O&M Plan(s) of each ECS and each ECS monitoring device that is used pursuant to this rule. While the Control Officer is reviewing for approval the O&M Plan(s), an owner and/or operator shall comply with all the identified actions and schedules provided in each O&M Plan submitted for approval, unless notified otherwise by the Control Officer. After the Control Officer has issued written approval of the O&M Plan(s), an owner and/or operator shall continue to comply with all the identified actions and schedules provided in each O&M Plan.
- e. Owner And/Or Operator Revisions To Initial O&M Plan(s): If an owner and/or operator submits to the Control Officer revisions to the initial O&M Plan(s) and if such revisions have been approved in writing by the Control Officer, an owner and/or operator shall comply with the revisions to the initial O&M Plan(s).
- d. Control Officer Modifications To Initial O&M Plan(s): After discussion with the owner and/or operator, the Control Officer may modify the O&M Plan(s) in writing prior to approval of the initial O&M Plan(s). An owner and/or operator shall then comply with the O&M Plan(s) that has been modified by the Control Officer.

309.2 Providing And Maintaining ECS Monitoring Devices: An owner and/or operator incinerating, adsorbing, or otherwise processing VOC emissions pursuant to this rule shall provide, properly install and maintain in calibration, in good working

order and in operation, devices described in the facility's O&M Plan that indicate temperatures, pressures, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly and is properly maintained.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS (NOT APPLICABLE)

SECTION 500 - MONITORING AND RECORDS

501 **RECORDKEEPING AND REPORTING:** Any person subject to this rule shall comply with the following requirements. Records shall be retained for five years and shall be made available to the Control Officer upon request.

501.1 Current List:

- a. Maintain a current list of cleaning-solvents; state the VOC-content of each in pounds VOC per gallon of material or grams per liter of material.
- b. A facility using any cleaning-solvent subject to the vapor-pressure limits of Section 304.1 of this rule shall have on site the written value of the total VOC vapor-pressure of each such solvent, in one of the following forms:
 - (1) A manufacturer's technical data sheet,
 - (2) A manufacturer's safety data sheet (MSDS), or
 - (3) Actual test results.

501.2 Usage Records:

- a. **Monthly:** Records of the amount of cleaning-solvent used shall be updated by the end of month for the previous month. Show the type and amount of each make-up and all other cleaning-solvent to which this rule is applicable.
- b. **Annually:**
 - (1) **Certain Concentrates:** Use of concentrate that is used only in the formulation of Low VOC Cleaner shall be updated at least annually.
 - (2) **Low-VOC Cleaner:** An owner and/or operator need not keep a record of a cleaning substance that is made by diluting a concentrate with water or non-precursor compound(s) to a level that qualifies as a Low VOC Cleaner if records of the concentrate usage are kept in accordance with this rule.
- c. **Grouping By VOC Content:** For purposes of recording usage, an operator may give cleaning-solvents of similar VOC content a single group-name, distinct from any product names in the group. The total usage of all the products in that group is then recorded under just one name. (In such a case, the operator must also keep a separate list that identifies the

product names of the particular solvents included under the group name). To the group name shall be assigned the highest VOC content among the members of that group, rounded to the nearest 10th of a pound of VOC per gallon of material, or to the nearest gram VOC per liter of material.

502 COMPLIANCE DETERMINATION AND TEST METHODS: When more than one test method is permitted for a determination, an exceedance of the limits established in the rule determined by any of the applicable test methods constitutes a violation of this rule.

502.1 Compliance Determination: The following means shall be used to determine compliance with this rule. For routine information collection, the Control Officer may accept a manufacturers' data sheet, data certified by an officer of the supplying company, or test data for the product model of inquiry.

a. VOC Content: The VOC content of solutions, dispersions, emulsions, and conforming solvents (reference Section 207 of this rule) shall be determined by one of the following methods:

- (1) South Coast Air Quality Management District Method 313-91 as referenced in Section 502.2(f) of this rule; or
- (2) Bay Area Air Quality Management District Method 31 as referenced in Section 502.2(e) of this rule; or
- (3) Solids-free windshield washer solutions, in which all organic components are VOCs, may be tested using Maricopa County Reference Method #100, "Total Organic Carbon for Windshield Washer Fluids," Maricopa County Air Pollution Control Rule 344 (April 7, 1999). This method should only be used for water-based solutions containing less than 5% VOC by weight.

b. Vapor Pressure: Pursuant to Sections 304 and 207 of this rule, determination of the total VOC vapor-pressure (VOC composite partial-pressure) in a cleaning solution shall be performed as follows:

- (1) For solutions known to be nearly or exactly 100% VOC, vapor pressure shall be determined by ASTM D2879-96 as referenced in Section 502.2(g) of this rule; or
- (2) For solutions for which is known the exact quantity and chemical makeup of each evaporating component that is not a VOC, ASTM D2879-96 (referencing Section 502.2(g) of this rule) shall be used (to determine the gross composite vapor pressure) in conjunction with calculations using the vapor-pressure formula in Section 502.3 of this rule.
- (3) When a solution's exact species and proportions are known for all ingredients, the Control Officer may use the formula in Section 502.3 of this rule in conjunction with standard reference texts or data-bases that provide the vapor pressure value of each constituent, or a combination of formula use and actual testing on real constituents (referencing Section 502.2(g) of this rule).

c. ECS Compliance:

- (1) The VOC content of gaseous emissions entering and exiting an ECS shall be determined by either EPA Method 18 referred to in Section 502.2(b) of this rule, or EPA Methods 25, 25a, and 25b referred to in Section 502.2(c) of this rule.
- (2) Capture efficiency of an emission control device used pursuant to Section 304.2, Section 305.4, Section 306.4, and/or Section 307.4 of this rule shall be determined either by the methods in Section 502.2(d) of this rule (EPA Methods 204, 204a, 204b, 204c, 204d, 204e, and 204f) or by using mass balance calculation methods in concert with the methods in Section 502.2(a) of this rule (EPA Methods 2, 2a, 2c, and 2d), and EPA guidance document, "Guidelines For Determining Capture Efficiency", January 9, 1995.

d. Temperature Measurement: Temperature measurements made pursuant to Section 214 of this rule to determine if a cleaning machine contains a "heated solvent" shall be done with an instrument having an accuracy and precision of no less than 1 degree Fahrenheit.

502.2 Test Methods Adopted By Reference: The EPA test methods as they exist in the Code of Federal Regulations (CFR) (July 1, 2003), as listed below, are adopted by reference. The other test methods listed here are also adopted by reference, each having paired with it a specific date that identifies the particular version/-revision of the method that is adopted by reference. These adoptions by reference include no future editions or amendments. Copies of test methods referenced in this Section 502 are available at the Maricopa County Environmental Services Department, 1001 North Central Avenue, Phoenix, AZ, 85004-1942.

- a. EPA Methods 2 ("Determination of Stack Gas Velocity and Volumetric Flow Rate"), 2a ("Direct Measurement of Gas Volume Through Pipes and Small Ducts"), 2c ("Determination of Stack Gas Velocity and Volumetric Flow rate in Small Stacks or Ducts"), and 2d ("Measurement of Gas volumetric Flow Rates in Small Pipes and Ducts"). All 4 of the foregoing methods are in 40 CFR 60, Appendix A.
- b. EPA Method 18 ("Measurement of Gaseous Organic Compound Emissions by Gas Chromatography") (40 CFR 60, Appendix A).
- c. EPA Methods 25 ("Determination of Total Gaseous Nonmethane Organic Emissions as Carbon"), 25a, and 25b (40 CFR 60, Appendix A).
- d. EPA Test Methods 204 ("Criteria For and Verification Of a Permanent or Temporary Total Enclosure"), 204a, 204b, 204c, 204d, 204e, and 204f (40 CFR 51, Appendix M) and EPA guidance document, "Guidelines For Determining Capture Efficiency", January 9, 1995.

- e. California's Bay Area Air Quality Management District (BAAQMD) Method 31 (April 15, 1992), "Determination of Volatile Organic Compounds in Paint Strippers, Solvent Cleaners, and Low Solids Coatings."
- f. California's South Coast Air Quality Management District (SCAQMD) Method 31.3-91 (April 1997).
- g. American Society for Testing and Materials (ASTM) Method D2879-96 (1996).
- h. EPA guidance document, "Guidelines For Determining Capture Efficiency", January 9, 1995.

502.3 FORMULA FOR VOC COMPOSITE PARTIAL PRESSURE: Equivalent to:
TOTAL VOC VAPOR-PRESSURE.

$$PP_c = \frac{\sum_{i=1}^n (W_i)(VP_i) / M_i}{\frac{W_w}{18} + \sum_{j=1}^m \frac{W_e}{M_e} + \sum_{i=1}^n \frac{W_i}{M_i}}$$

- W_i = Weight of the "i"th VOC compound in grams
- W_w = Weight of water in grams
- W_e = Weight of the "j"th non-precursor compound in grams
- M_i = Molecular weight of the "i"th VOC compound in grams per gram mole,
e.g., one gram-mole of isopropyl alcohol weighs 60 grams
- M_e = Molecular weight of the "j"th non-precursor compound,
e.g., 1 gram-mole of acetone weighs 58 grams
- PP_c = VOC composite partial pressure at 20°C in mm mercury (Hg)
- VP_i = Vapor pressure of the "i"th VOC compound at 20°C in mm Hg
- 18 = Weight of one gram-mole of water

APPENDIX TO RULE 331

VAPOR CLEANING MACHINES and EMISSION CONTROL SYSTEMS

I. DEFINITIONS:

- (1) VAPOR LEVEL CONTROL SYSTEM – A combination of a coolant sensing system and a vapor sensing system consisting of the following three sets of features:
 - A. A condenser flow switch and thermostat which shuts off the sump heat if either the condenser coolant stops circulating or becomes warmer than 85°F (29°C); and
 - B. A manually-reset safety switch which turns off the sump heater if the temperature sensor senses that the temperature is rising above the designed operating level at the vapor/air interface; and
 - C. A manually-reset switch which turns off the spray-system pump if the level of the vapor/air interface drops more than 4 inches (10 cm).

II. BATCH-LOADED VAPOR CLEANING MACHINES:

- (1) No person shall operate a batch vapor cleaning machine, unless the machine meets National Emission Standards for Halogenated Solvent Cleaning (subpart T, Rule 370), as if the cleaning solvent in use were subject to subpart T standards.
- (2) No person shall operate a batch vapor cleaning machine, unless the machine has a vapor/air interface Fahrenheit temperature no greater than 30% of the solvent's boiling point temperature or no greater than 40.0°F (4.4°C), whichever is lower.
- (3) Sections II(1) and II(2) of this Appendix shall not apply, if a batch vapor cleaning machine is equipped with all of the following:
 - (A) Cover: An impermeable cover that is a sliding, rolling, fanning, or guillotine (bi-parting) type which is designed to easily open and close without disturbing the vapor zone.
 - (B) A Vapor Level Control System.
 - (C) Primary Condenser: A primary condenser that maintains an exit temperature not exceeding 85°F (29°C) or is equipped pursuant to Section II(3)(F)(ii) of this Appendix.
 - (D) Freeboard Ratio: A freeboard ratio that is greater than or equal to 0.75.
 - (E) Lip Exhausts: Vapor cleaning machines with lip exhausts shall be controlled by an ECS.
 - (F) Refrigeration Or ECS: Batch vapor cleaning machines having any of the following descriptors shall comply with Sections II(3)(F)(i), II(3)(F)(ii), or II(3)(f)(iii) of this Appendix:
 - an evaporative surface area equal to or greater than 10.75 ft² (1.0 m²); or

- installed or subject to major modification after November 1, 1999; or
 - having average monthly VOC emissions exceeding 31 pounds VOC per square foot of solvent surface area:
 - (i) A refrigerated freeboard chiller for which the chilled air blanket temperature in degrees Fahrenheit at the coldest point on the vertical axis through the horizontal center of the vapor/air interface either shall be no greater than 30% of the initial boiling point of the solvent in degrees Fahrenheit or no greater than 40.0°F (4.4°C); or
 - (ii) A refrigerated condenser coil (in place of an unrefrigerated coil) having a minimum cooling capacity of 100% of the boiling-sump heat input rate and conforming to the air blanket temperature requirements pursuant to Section II(3)(F)(i); or
 - (iii) An ECS operated in accordance with Section IV of this Appendix.
- (G) Water Separator: Water should not be visually detectable in the VOC containing solvent exiting the water separator.
- (4) Sections II(1) and II(2) of this Appendix shall not apply, if a batch vapor cleaning machine meets all of the following:
- (A) Workloads:
 - (i) A workload shall not occupy more than half of the cleaning machine's open-top area.
 - (ii) The workload shall not be so massive that the vapor level drops more than 4 inches (10 cm), when the workload is removed from the vapor zone.
 - (iii) The workload shall not be sprayed with cleaning-solvent above the vapor/air interface level.
 - (B) Carry-Out: Minimize cleaning-solvent carry-out by the following measures:
 - (i) Orient the items being cleaned in such a way that the items drain easily after cleaning.
 - (ii) Degrease the workload in the vapor zone at least 30 seconds or until condensation ceases.
 - (iii) For manual loading/unloading, tip out any pools of solvent on the cleaned parts before removal.
 - (iv) Allow parts to dry within the batch vapor cleaning machine until visually dry.
 - (C) Startup And Shutdown: The following sequence shall be used for startup and shutdown:

- (i) When starting the batch vapor cleaning machine, the cooling system shall be turned on before, or simultaneously with, the sump heater.
 - (ii) When shutting down the batch vapor cleaning machine, the sump heater shall be turned off before, or simultaneously with, the cooling system.
- (D) **Blasting:** Blasting in a batch vapor cleaning machine shall be done within a Sealed System or be controlled by an ECS.
- (E) **Records:** An owner and/or operator operating a batch vapor cleaning machine shall keep records pursuant to Section 501 of this rule.

III. IN-LINE VAPOR CLEANING MACHINES:

- (1) No person shall operate an in-line vapor cleaning machine, unless the machine meets National Emission Standards for Halogenated Solvent Cleaning (subpart T, Rule 370), as if the cleaning-solvent in use were subject to subpart T standards.
 - (2) No person shall operate an in-line vapor cleaning machine, unless the machine has a vapor/air interface Fahrenheit temperature no greater than 30% of the solvent's boiling point temperature or no greater than 40.0°F (4.4°C), whichever is lower.
 - (3) Sections III(1) and III(2) of this Appendix shall not apply, if an in-line vapor cleaning machine is equipped with all of the following:
 - (A) **Cover:** Within 10 minutes of turning off the solvent heating system, cover the entrance and exit and any opening greater than 16 square inches (104 cm²).
 - (B) **Vapor Level Control System.**
 - (C) **Primary Condenser:** Have a primary condenser that maintains an exit temperature not exceeding 85°F (29°C).
 - (D) **Freeboard Ratio:** Have a freeboard ratio greater than or equal to 0.75.
 - (E) **Refrigeration Or ECS:** In-line vapor cleaning machines having any of the following descriptors shall comply with Sections III(3)(E)(i), III(3)(E)(ii), or III(3)(E)(iii) of this Appendix:
 - an evaporative surface area equal to or greater than 10.75 ft² (1.0 m²); or
 - installed or subject to major modification after November 1, 1999, or
 - having average monthly VOC emissions exceeding 31 pounds VOC per square foot of solvent surface area:
- (i) A refrigerated freeboard chiller for which the chilled air blanket temperature in degrees Fahrenheit at the coldest point on the vertical axis through the horizontal center of the vapor/air interface either shall be no greater than 30% of the initial boiling point of the solvent in degrees Fahrenheit or no greater than 40.0°F (4.4°C); or

- (ii) A refrigerated condenser coil (in place of an unrefrigerated coil) having a minimum cooling capacity of 100% of the boiling-sump heat input rate and conforming to the air blanket temperature requirements pursuant to Section III(3)(E)(i) of this Appendix; or
 - (iii) An ECS operated in accordance with Section IV of this Appendix.
- (F) Water Separator: Water should not be visually detectable in the VOC-containing solvent exiting the water separator.
- (4) Sections III(1) and III(2) of this Appendix shall not apply, if the in-line vapor cleaning machine meets all of the following:
 - (A) Workloads: Entrances and exits should silhouette workloads so that the average clearance between parts and the edge of the in-line vapor cleaning machine opening is either less than 4 inches (10 cm) or less than 10% of the width of the opening.
 - (B) Carry-Out: Equip the in-line vapor cleaning machine with either a drying tunnel or another means, such as a rotating basket, sufficient to prevent cleaned parts from carrying out cleaning-solvent liquid or vapor.
 - (C) Startup And Shutdown: The following sequences shall be used for startup and shutdown:
 - (i) When starting the in-line vapor cleaning machine, the cooling system shall be turned on before, or simultaneously with, the sump heater.
 - (ii) When shutting down the in-line vapor cleaning machine, the sump heater shall be turned off before, or simultaneously with, the cooling system.
 - (D) Records: An owner and/or operator operating an in-line vapor cleaning machine shall keep records pursuant to Section 501 of this rule.

IV. EMISSION CONTROL SYSTEM REQUIREMENTS:

- (1) An Emission Control System (ECS) used pursuant to this rule shall consist of a hood or enclosure to collect emissions, which are vented to a processing device. The overall control efficiency (capture plus processing) of the system shall not be less than 85%. The capture system shall have a ventilation rate no greater than 65 cfm per square foot of evaporative surface ($20 \text{ m}^3/\text{min.}/\text{m}^2$), unless that rate must be changed to meet a standard specified and certified by a Certified Safety Professional, a Certified Industrial Hygienist, or a licensed professional engineer experienced in ventilation-system design, that concerns health and safety requirements. The ECS shall be approved by the Control Officer.
- (2) Operation And Maintenance (O&M) Plan Required For ECS: An owner and/or operator shall create and maintain an O&M Plan for any ECS required by this rule or pursuant to an air pollution control permit in accordance with Section 309 of this rule.
- (3) Recordkeeping:

- (A) **ECS Operation And Maintenance Records:** On each day that an ECS is used to comply with any provision of this rule, an owner and/or operator shall make a permanent record of the operating parameters of the key systems described in the O&M Plan. For each day or period in which the O&M Plan requires that maintenance be performed, a permanent record shall be made of the maintenance actions taken, within 24 hours of maintenance completion. An explanation shall be entered for scheduled maintenance that is not performed during the period designated in the O&M Plan.
- (B) **Other Records Required When Complying Via ECS:** An owner and/or operator using an ECS pursuant to this rule shall maintain, in addition to the records required by Section 501.1 of this rule, daily documentation showing the VOC content of the solvent material and the amount added for makeup.
- (4) **Test Methods For Determining Emission Control System Compliance:** Test methods and compliance procedures for an ECS are in Section 502 of this rule.

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 333
PETROLEUM SOLVENT DRY CLEANING**

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Revised 07/13/88
Revised 06/22/92
Revised 06/19/96

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 333
PETROLEUM SOLVENT DRY CLEANING**

SECTION 100 - GENERAL

- 101 PURPOSE:** To limit the emissions of volatile organic compounds from petroleum solvents used in dry cleaning.
- 102 APPLICABILITY:** This rule applies to petroleum solvent washers, dryers, solvent filters, settling tanks, vacuum stills, and other containers and conveyors of petroleum solvent that are used in petroleum solvent dry cleaning facilities.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply:

- 201 CARTRIDGE FILTER** - Any perforated canister containing filtration paper, fabric and/or activated carbon that is used in a pressurized system to remove solid particles and fugitive dyes from soil-laden solvent.
- 202 CONTAINERS AND CONVEYORS OF SOLVENT** - Any piping, ductwork, pumps, storage tanks, and other ancillary equipment that are associated with the installation and operation of washers, dryers, filters, stills and settling tanks.
- 203 DRY CLEANING** - A process for the cleaning of textiles and fabric products in which articles are washed in nonaqueous solvent and then dried by exposure to a heated air stream.
- 204 PERCEPTIBLE LEAKS** - Any petroleum solvent vapor, mist, or liquid leaks that are conspicuous from visual observation, such as pools or droplets of liquid, or buckets or barrels of solvent or solvent-laden waste standing open to the atmosphere.
- 205 PETROLEUM SOLVENT** - Volatile organic compounds commonly produced by petroleum distillation, primarily comprising a hydrocarbon range of 8 to 12 carbon atoms per organic molecule.

- 206 SOLVENT RECOVERY DRYER** - A class of dry cleaning dryers that employs a condenser to liquefy and recover solvent vapors evaporating in a closed-loop, recirculating stream of heated air.
- 207 VOLATILE ORGANIC COMPOUND (VOC)** - Any organic compound, excluding the following organic compounds which have been designated by the EPA as having negligible photochemical reactivity: methane; ethane; methylene chloride (dichloromethane); 1,1,1-trichloroethane; trichlorofluoromethane (CFC-11); dichlorodifluoromethane (CFC-12); chlorodifluoromethane (CFC-22); 1,1,2-trichlorotrifluoroethane (CFC-113); 1,2-dichlorotetrafluoroethane (CFC-114); chloropentafluoroethane (CFC-115); trifluoromethane (FC-23); 2,2-dichloro-1,1,1-trifluoroethane (HCFC-123); 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124); 1,1-dichloro-1-fluoroethane (HCFC-141b); 1-chloro-1,1-difluoroethane (HCFC-142b); pentafluoroethane (HFC-125); 1,1,2,2-tetrafluoroethane (HFC-134); 1,1,1,2-tetrafluoroethane (HFC-134a); 1,1,1-trifluoroethane (HFC-143a); 1,1-difluoroethane (HFC-152a); all completely fluorinated, completely saturated: alkanes, ethers and tertiary amines.

SECTION 300 - STANDARDS

- 301 OPERATING REQUIREMENTS** - A person shall not operate any petroleum solvent dry cleaning facility unless all of the following requirements are satisfied:
- 301.1 Liquid and Vapor Leaks:** Dry cleaning equipment shall not be operated with perceptible leaks from any portion of the equipment, including but not limited to: hose connections, unions, couplings and valves; machine door gaskets and seating; filter head gaskets and seating; pumps; base tanks and storage containers; water separators; filter sludge recovery; distillation units; diverter valves; solvent-moistened lint from lint basket; and cartridge filters.
- 301.2 Solvent Storage:** Solvents shall be stored in closed containers.
- 301.3 Access Vents:** All washer and dryer traps, access doors, and any other parts of equipment where solvent may be exposed to the atmosphere, shall be kept closed at all times except when required for proper operation or maintenance.
- 301.4 Solvent Filtration:** Any petroleum filtration system shall be installed and operated to comply with at least one of the following:
- a. Reduce the volatile organic compounds in all filtration wastes to 2.2 lbs (1 kg) or less per 220 lbs (100 kg) dry weight of articles cleaned, before disposal, and exposure to the atmosphere; or

- b. Install and operate a cartridge filtration system, and drain the filter cartridges in their sealed housings for eight hours or more before their removal; or
- c. Place all discarded filtration material, including cartridges and particulate filter media, immediately in sealed containers and dispose of according to hazardous waste statutes.

302 CONTROLS REQUIRED - SOLVENT RECOVERY DRYER: Petroleum solvent dry cleaning facilities installed after July 13, 1988, shall have a solvent recovery that recovers at least 85 percent of petroleum solvent by weight. In addition, the recovery cycle for the dryer shall not be terminated until the petroleum solvent flow rate from the water separator is 15 milliliters or less per minute.

SECTION 500 - MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING: Any person subject to this rule shall comply with the following requirements. Records shall be retained for five years and shall be made available to the Control Officer upon request.

501.1 Current List: Maintain a current list of solvents and any other VOC-containing materials; state the VOC content of each in pounds per gallons or grams per liter.

501.2 Usage Records and Amount of Clothes Cleaned: Maintain monthly records of the weight of clothing cleaned, the amount of solvent-used, and the weight and type of any material disposed of which contains any quantity of cleaning solvent. The name of the company receiving such material shall also be recorded.

502 COMPLIANCE DETERMINATION - TEST METHODS: When more than one test method is permitted for a determination, an exceedance of the limits established in the rule determined by any of the applicable test methods constitutes a violation of this rule.

502.1 Measurements of petroleum-based VOC emissions pursuant to provisions of this rule shall be conducted in accordance with EPA Test Method 25 or its applicable submethod(s) (40 CFR 60, Appendix A). Alternatively, a person may meet the efficiency (85 percent) requirement of Section 302 if 6.6 lbs (3 kg) or less of petroleum solvent is emitted per 220 lbs (100 kg) dry weight of articles cleaned, subject to prior approval of the test protocol by the Control Officer.

502.2 Measurements of VOC content of solvents, waste, recovered or recycled material shall be conducted and reported in accordance with ASTM Standard

Recommended Practices for General Gas Chromatography Procedures, E 260-85 or ASTM General Techniques For Infrared Quantitative Analysis, E 160A-67 or ASTM General Techniques of Ultraviolet Quantitative Analysis, ASTM E 169-63; as approved by the Control Officer.

- 502.3** Efficiency of the control device shall be determined according to EPA Method 18.
- 502.4** Ventilation/draft rate shall be determined by EPA Methods 2, 2A, 2C and 2D.

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 335 ARCHITECTURAL COATINGS

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 335
ARCHITECTURAL COATINGS**

SECTION 100 - GENERAL

- 101 PURPOSE:** To limit the emission of volatile organic compounds from architectural coatings.
- 102 APPLICABILITY OF MULTIPLE STANDARDS:** In any instance where more than one of the standards set forth in this rule may be applicable, the most restrictive standard shall apply.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply:

- 201 ACRYLIC POLYMERS** - Polymers resulting from the polymerization of derivatives of acrylic acids, including esters of acrylic acids, methacrylic acid, acrylonitrile, and their copolymers. Also known as acrylic resins and acrylate resins.
- 202 ALKYDS** - Synthetic resins formed by the condensation of polyhydric alcohols with polybasic acids.
- 203 ARCHITECTURAL COATING** - Any coating applied to stationary structures and their appurtenances, to mobile homes, to pavements or to curbs.
- 204 BELOW GROUND WOOD PRESERVATIVES** - Heavy duty coatings formulated solely for the purpose of protecting below ground wood from decay or insect attack and which contain a wood preservative.
- 205 BITUMINOUS COATING MATERIALS** - Black or brownish materials, soluble in carbon disulfide, consisting mainly of hydrocarbons and which are obtained from natural deposits, or as residues from the distillation of crude petroleum oils or of low grades of coal.
- 206 BOND BREAKERS** - Coatings whose sole purpose, when applied between layers of concrete, is to prevent the freshly poured top layer of concrete from bonding to the substrate on which it is poured.

- 207 CATALYZED EPOXY** - Crosslinking resins made by the reaction of epoxides with other material such as amines, alcohols, phenols, carboxylic acids and unsaturated compounds.
- 208 CONCRETE CURING COMPOUNDS** - Coatings whose sole purpose is to retard the evaporation of water from the surface of freshly cast concrete, thereby strengthening it.
- 209 CHLORINATED RUBBER** - Resin formed by the reaction of rubber with chlorine.
- 210 DRY FOG COATINGS** - Coatings which are formulated so that when sprayed, overspray droplets dry before falling on floors and other surfaces.
- 211 ENAMEL UNDERCOATERS** - Coatings which are designed to be applied to a new surface over a primer or over a previous coat of paint, in order to improve the seal, provide better adhesion and make a smooth base for non-flat coatings.
- 212 FIRE RETARDANT COATINGS** - Coatings which are designed to retard fires and which will significantly:
- 212.1** Reduce the rate of flame spread on the surface of a material to which such a coating has been applied; or
 - 212.2** Resist ignition when exposed to high temperature; or
 - 212.3** Insulate a substrate to which such a coating has been applied and prolong the time required for the substrate to reach ignition temperature.
- 213 FLAT COATINGS** - Coatings which register gloss less than 15 on an 85° meter or less than 5 on a 60° meter, or which is labeled as a flat coating.
- 214 GENERAL PRIMERS** - Coatings which are intended to be applied to a surface to provide a firm bond between the substrate and subsequent coats.
- 215 GENERAL SEALERS** - Coatings which are intended for use on porous substrates to protect the substrate, to prevent subsequent coatings from being absorbed by the substrate, or to prevent harm to subsequent coatings by materials in the substrate.
- 216 GENERAL UNDERCOATERS** - Coating which are designed to provide a smooth surface for subsequent coats.
- 217 GRAPHIC ARTS COATINGS (SIGN PAINTS)** - Coatings which are marketed solely for application to indoor and outdoor signs and include lettering enamels, poster colors and bulletin colors.
- 218 INDUSTRIAL MAINTENANCE PRIMERS** - Coatings which are intended to be applied to a surface prior to the application of an industrial maintenance topcoat, to provide a firm bond between the substrate and subsequent coats.

- 219 INDUSTRIAL MAINTENANCE TOPCOATS** - High performance coatings which are formulated for the purpose of heavy abrasion, water immersion, chemical, corrosion, temperature, electrical or solvent resistance.
- 220 INORGANIC POLYMERS** - Substances whose principle structural features are made of homopolar interlinkages between multivalent elements other than carbon. This does not preclude the presence of carbon-containing groups in the side branches, or as interlinkages between principle structural members. Examples of such polymers are ethyl and butyl silicates.
- 221 LACQUERS** - Clear or pigmented coatings formulated with nitrocellulose or synthetic resins to dry by evaporation without chemical reaction and to provide a quick drying, solid protective film.
- 222 MASTIC TEXTURE COATINGS** - Coatings, except weatherproof mastic coatings, which are formulated to cover holes, minor cracks and to conceal surface irregularities.
- 223 METALLIC PIGMENTED PAINTS** - Any coatings which are formulated with metallic pigment and which contain more than 10 grams of metal particles per liter of coating (0.08 lb/gal) as applied where such metal particles are visible in the dried film.
- 224 MULTI-COLORED COATINGS** - Coatings which exhibit more than one color when applied and which are packaged in a single container and applied in a single coat.
- 225 NON-FLAT COATINGS** - Coatings which register gloss of 15 or greater on an 85° meter or 5 or greater on a 60° meter, or which are identified on the label as gloss, semi-gloss, or eggshell enamel coatings.
- Note¹** **226 NON-PRECURSOR ORGANIC COMPOUND** - The following organic compounds have been designated by the EPA as having negligible photochemical reactivity: methane; ethane; methylene chloride; 1,1,1 trichloroethane; trichlorotrifluoroethane (CFC-113); trichlorofluoromethane (CFC-11); dichlorodifluoromethane (CFC-12); chlorodifluoromethane (CFC-22); trifluoromethane (FC-23); dichlorotetrafluoroethane (CFC-114) and chloropentafluoroethane (CFC-115).
- 227 OPAQUE STAINS** - All stains that are not classified as semitransparent stains.

¹ This note is not part of Rule 335. For the reader's convenience, the current list of non-precursor organic compounds is found in Rule 100, Section 200.

- 228 OPAQUE WOOD PRESERVATIVES** - All wood preservatives that are not classified as semitransparent wood preservatives.
- 229 ORGANIC COMPOUND** - Any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides and carbonates and ammonium carbonate.
- 230 QUICK-DRY ENAMELS** - Non-flat coatings which comply with the following:
- 230.1** Should be capable of being applied directly from the container by brush or roller when the ambient temperature is between 60°F and 80°F.
- 230.2** When tested in accordance with ASTM D1640 they shall: set to touch in two hours or less, dry hard in eight hours or less, and be tack-free in four hours or less by the mechanical method test.
- 230.3** Shall have a 60° meter dried film gloss of no less than 70.
- 231 QUICK-DRY PRIMERS AND SEALERS** - Primers, sealers and undercoaters which are intended to be applied to a surface to provide a firm bond between the substrate and subsequent coats and which are dry to the touch in one-half hour and can be recoated in two hours (ASTM 1640).
- 232 ROOF COATINGS** - Coatings which are formulated for the sole purpose of preventing penetration of the substrate by water. These coatings include bituminous roof and waterproof mastic coatings.
- 233 SEMI-TRANSPARENT STAINS** - Coatings which are formulated to change the color of a surface but not conceal the surface.
- 234 SEMI-TRANSPARENT WOOD PRESERVATIVES** - Wood preservative stains which are formulated for the purpose of protecting exposed wood from decay or insect attack by the addition of a wood preservative chemical and which change the color of a surface but do not conceal the surface. These coatings perform their function by penetrating into the wood.
- 235 SHELLACS** - Clear or pigmented coatings formulated with natural resins (except nitrocellulose resins), thinned with alcohol, formulated to dry by evaporation without a chemical reaction and intended to provide stain blocking properties as well as a solid protective film.
- 236 SILICONES** - A resin containing silicon unlike organic resins, which all contain carbon. The basic structure of silicones consist of silicon-oxygen linkages.

- 237 SPECIALTY FLAT PRODUCTS** - Self-priming flat products used only to perform one of the following functions: repair fire, smoke or water damage; neutralize odors; block stains; or coat acoustical materials without affecting their acoustical abilities.
- 238 SPECIALTY PRIMERS, SEALERS, AND UNDERCOATERS** - Primers, sealers and undercoaters used only to perform one of the following functions: repair fire, smoke or water damage; neutralize odors; block stains; block efflorescence; condition chalky surfaces; or coat acoustical materials without affecting their acoustical abilities.
- 239 SWIMMING POOL COATINGS** - Coatings specifically formulated to coat the interior of swimming pools and resist swimming pool chemicals.
- 240 TILE-LIKE GLAZE COATINGS** - Coatings which are formulated to provide a tough, extra-durable coating system, which are applied as a continuous (seamless) highbuild film and which cure to a hard glaze finish.
- 241 TRAFFIC COATINGS** - Coatings which are formulated to be applied to public streets, highways, and other surfaces including, but not limited to curbs, berms, driveways, and parking lots.
- 242 UNIQUE VEHICLES** - Generic polymer components not defined by any of the coatings listed in the category of industrial primers and topcoats in Section 305 of this rule, e.g., hypalon, phenoxy.
- 243 URETHANE POLYMERS** - Coating vehicles containing a polyisocyanate monomer reacted in such a manner as to yield polymers containing any ratio, proportion, or combination of urethane linkages, active isocyanate groups, or polyisocyanate monomer.
- 244 VARNISHES** - Clear or pigmented coatings formulated with various resins to dry by chemical reaction or exposure to air. These coatings are intended to provide a durable, transparent or translucent, solid protective film.
- 245 VINYL CHLORIDE POLYMERS** - Polymers made by the polymerization of vinyl chloride or copolymerization of vinyl chloride with other unsaturated compounds, the vinyl chloride being in greatest amount by weight.
- 246 VOLATILE ORGANIC COMPOUND (VOC)** - Any organic compound except non-precursor organic compounds.
- 247 WATERPROOF MASTIC COATINGS** - Weatherproof and waterproof coatings which are formulated to cover holes and minor cracks and to conceal surface irregularities.

- 248 WATERPROOF SEALERS** - Coatings which are formulated for the sole purpose of protecting porous substrates by preventing the penetration of water.

SECTION 300 - STANDARDS

- 301 PROHIBITION - BITUMINOUS PAVEMENT SEALERS:** No person shall apply, sell, offer for sale or manufacture for sale within Maricopa County any architectural coating manufactured after July 13, 1988, which is recommended for use as a bituminous pavement sealer unless it is an emulsion type coating.
- 302 INTERIM LIMITS - NON-FLAT ARCHITECTURAL COATINGS:** No person shall apply, sell, offer for sale or manufacture for sale within Maricopa County any non-flat architectural coating manufactured after July 13, 1989, which contains more than 3.2 lbs (380 g/l) of volatile organic compounds per gallon of coating, excluding water and any colorant added to tint bases. These limits do not apply to speciality coatings listed in Section 305 of this rule.
- 303 FINAL LIMITS - NON-FLAT ARCHITECTURAL COATINGS:** No person shall apply, sell, offer for sale or manufacture for sale within Maricopa County any non-flat architectural coating manufactured after July 13, 1990, which contains more than 2.1 lbs (250 g/l) of volatile organic compounds per gallon of coating, excluding water and any colorant added to tint bases. These limits do not apply to speciality coatings listed in Section 305 of this rule.
- 304 LIMITS - FLAT ARCHITECTURAL COATINGS:** No person shall apply, sell, offer for sale or manufacture for sale within Maricopa County any flat architectural coating manufactured after July 13, 1989, which contains more than 2.1 lbs (250 g/l) of volatile organic compounds per gallon of coating, excluding water and any colorant added to tint bases. These limits do not apply to speciality coatings listed in Section 305 of this rule.
- 305 LIMITS - SPECIALTY COATINGS:** No person shall apply, sell, offer for sale or manufacture for sale within Maricopa County any architectural coating that exceeds the following limits manufactured after the date listed below. Limits are expressed in pounds of VOC per gallon of coating as applied, excluding water and any colorant added to tint bases.

	<u>Effective Dates</u>		
	7/13/89	7/13/90	7/13/91
<u>COATING</u>			(lb/gal)
Concrete Curing Compounds	-	-	2.9
Dry Fog Coating			
Flat	4.6	-	3.5
Non-flat	3.5	-	3.3
Enamel Undercoaters	3.8	-	2.9
General Primers, Sealers and Undercoaters	3.3	-	2.9
Industrial Maintenance Primers and Topcoats			
Alkyds	4.2	3.5	3.5
Catalyzed Epoxy	-	4.2	3.5
Bituminous Coating Materials	-	-	3.5
Inorganic Polymers	-	-	3.5
Vinyl Chloride Polymers	-	-	3.5
Chlorinated Rubbers	-	-	3.5
Acrylic Polymers	-	3.5	3.5
Urethane Polymers	-	3.5	3.5
Silicones	-	-	3.5
Unique Vehicles	-	-	3.5
Lacquers	-	-	5.7
Opaque Stains	3.3	-	2.9
Wood Preservatives	-	-	2.9
Quick Dry Enamels	-	-	3.3
Roof Coatings	-	-	2.5
Semi-transparent Stains	-	-	2.9
Semi-transparent and Clear Wood Preservatives	-	-	2.9
Opaque Wood Preservatives	3.3	-	2.9
Specialty Flat Products	-	-	3.3
Specialty Primers, Sealers & Undercoaters	-	-	2.9
<i>Stains, All</i>	-	-	2.9
Traffic Coatings			
Applied to Public Streets and Highways	3.5	-	2.1
Applied to other Surfaces	2.1	-	2.1
Black Traffic Coatings	-	-	2.1
Varnishes	-	4.2	2.9
Waterproof Mastic Coating	-	-	2.5
Waterproof Sealers	-	-	3.3
<i>Wood Preservatives Except Below Ground</i>	-	-	2.9

Note²

² This note is not part of Rule 335. For the reader's convenience, words in italics are not part of this Rule 335, but are alphabetized repeats of listed coatings.

- 306 EXEMPTIONS - SPECIFIC USE COATINGS:** This rule shall not apply to architectural coatings recommended by the manufacturer for use solely as one or more of the following:
- 306.1** Below ground wood preservative coatings.
 - 306.2** Bond breakers.
 - 306.3** Fire retardant coatings.
 - 306.4** Graphic arts coatings (sign paints).
 - 306.5** Mastic texture coatings.
 - 306.6** Metallic pigmented coatings.
 - 306.7** Multi-colored paints.
 - 306.8** Quick-dry primers, sealers and undercoaters.
 - 306.9** Shellacs.
 - 306.10** Swimming pool paints.
 - 306.11** Tile-like glaze coatings.
- 307 EXCEPTION - SMALL CONTAINERS:** The provisions of this rule shall not apply to architectural coatings supplied in containers having capacities of one quart or less.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

- 401 LABELING REQUIRED:** Effective July 13, 1989, containers for all coatings subject to this rule shall carry a statement of the manufacturer's recommendation regarding thinning of the coatings. Data may be quantified with either English or metric units. This requirement shall not apply to the thinning of the architectural coatings with water. The recommendation shall specify that the coating is to be employed without thinning or diluting under normal environmental and application conditions, unless the recommended thinning for normal environmental and application conditions does not cause the coating to exceed its applicable standard. Architectural coatings subject to the Federal Insecticide, Fungicide and Rodenticide Act shall not be subject to the labeling requirements of this rule.

402 MANUFACTURE DATE REQUIRED: Containers for all coatings subject to the provisions of this rule shall display the date of manufacture of the contents or a code indicating the date of manufacture. The manufacturers of such coatings shall file with the Control Officer an explanation of each code.

SECTION 500 - MONITORING AND RECORDS

501 DETERMINATION OF COMPLIANCE: Testing procedures to determine compliance with prescribed VOC limits shall be consistent with Reference Methods 24 and 24A in the Arizona Testing Manual for Air Pollutant Emissions.

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ASTM D5504-01 or D5504-08 Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence

504.16 South Coast Air Quality Management District Method 307-94 Determination of Sulfur in a Gaseous Matrix

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 336
SURFACE COATING OPERATIONS**

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 336
SURFACE COATING OPERATIONS**

SECTION 100 – GENERAL

101 PURPOSE: To limit the emission of volatile organic compounds (VOCs) from surface coating operations.

102 APPLICABILITY: This rule applies to VOC coatings listed in Tables 336-1 through 336-7 of this rule that are not more specifically regulated by another source specific rule within Maricopa County Rules 300 to 359 of Regulation III, as listed in Section 104 of this rule. Additionally:

102.1 Surface-coating activities regulated under this rule include, but are not limited to, the application of coating, coating preparation/mixing at the facility applying the coating, and the cleanup of coating application equipment.

102.2 Section 103 sets forth partial exemptions for certain materials or uses employed by a surface coating operation subject to this rule.

102.3 This rule is not applicable to coatings having a VOC content, minus exempt compounds, of less than 0.15lb VOC/gal (18g/L) nor to solvents having a VOC content of material less than 0.15lb VOC/gal.

102.4 In addition to this rule, facilities may be subject to New Source Performance Standards (NSPS) in Rule 360 and/or to National Emission Standards for Hazardous Air Pollutants (NESHAP) in Rule 370 of these rules.

103 PARTIAL EXEMPTIONS:

103.1 Qualified Materials Exemption:

a. Leak-Preventing Materials: Sealants, caulking, and similar materials used on the following substrates for the primary purpose of leak prevention are exempt from this rule:

(1) Non-metallic substrates; and

(2) Substrates made post manufacture, such as, but not limited to, old joints and seals on pipe and valve assemblies.

b. Certain Joint Fillers: Caulking and beaded sealants used to fill gaps or to fill joints between surfaces are exempt from this rule, except those used in manufacturing other metal parts and products or in the manufacturing of cans.

103.2 Extreme Performance Coatings Exemption: Extreme performance coatings are exempt from the VOC limits in Tables 336-1 through 336-7 of this rule but not from any other sections of this rule when used under the following conditions:

a. On internal combustion engine components that are normally above 250°F (121°C) during use; or

- b. At temperatures above 250°F (121°C) on items that are both included under the North American Industry Classifications System (NAICS) codes 334210, 334220, 334290, 334416, 334417, 334418, 334419, 334310 or 336419 and are electronic products in space vehicles and/or are communications equipment.

103.3 Plastic Parts Coating Exemption: The following types of plastic parts coatings are exempt from the VOC limits in Tables 336-1 through 336-7 of this rule but are subject to the remaining provisions of this rule.

- a. Touch-up and repair coatings.
- b. Stencil coatings applied on clear or transparent substrates.
- c. Clear or translucent coatings.
- d. Coatings applied at a paint manufacturing facility while conducting performance tests on the coatings.
- e. Non-compliant coatings: After a sufficient demonstration by the owner or operator that no compliant substitute coating exists, an owner or operator is permitted to use no more than 50 gal/yr. of an individual non-compliant coating, not exceeding 200 gal/yr total usage of all such coatings provided such coatings are approved for use in a Maricopa County Air Pollution Permit.
- f. Reflective coatings applied to highway cones.
- g. Mask coatings that are less than 0.5 millimeter thick (dried) and the area coated is less than 25 square inches.
- h. Electromagnetic Interference (EMI)/ Radio-Frequency Interference (RFI) shielding coatings.
- i. Heparin-benzalkonium chloride (HBAC)-containing coatings applied to medical devices, provided that the total usage of all such coatings does not exceed 100 gal/yr per facility.
- j. Business machine plastic part coatings:
 - (1) Texture coatings.
 - (2) Vacuum metalizing coatings.
 - (3) Gloss reducers.
 - (4) Adhesion primers.
 - (5) Electrostatic preparation coatings.
 - (6) Resist coatings.
 - (7) Stencil coatings.

103.4 Application Methods Exemption: The following coatings are exempt from application methods in Section 302 of this rule but are subject to the remaining provisions of this rule:

- a. Metal part texture coatings.

- b. Metal part touch-up and repair coatings.
- c. Plastic part coating for airbrush operations using less than 5 gal/yr of coating.
- d. Extreme high gloss coatings for pleasure craft surface coating operations.

103.5 Application Methods and VOC-Limit Exemption: The following surface coating operations are exempt from Sections 301, 302, and 305 of this rule but shall comply with Section 303, 304, and 500 of this rule.

- a. Aerosol can spray coating.
- b. Low Usage of VOC Coatings Which Exceed VOC Thresholds for Coating Categories Listed in Tables 336-1 Through 336-7 of this Rule: Non-compliant coatings are permitted for use if the annual aggregate usage does not exceed 55 gallons per year (208 liters/yr.) at a facility. The owner or operator shall update usage records of these coatings at the end of each month, pursuant to Section 501.2 of this rule.
- c. A Small Surface-Coating Source: A facility that has less than a 2 ton/year VOC emission limit in a Maricopa County Air Pollution Permit for surface coating operations regulated by this rule.
- d. A Quality Class Q protective coating that is used on equipment, structures, and/or components within a containment facility of a nuclear power plant.
- e. A tactical military-equipment coating that is approved in a Maricopa County Air Pollution Permit subsequent to a sufficient demonstration by the user that no compliant substitute exists.
- f. **Large Appliance Coating:**
 - (1) Stencil coatings.
 - (2) Safety-indicating coatings.
 - (3) Solid-film lubricants.
 - (4) Electric-insulating and thermal-conducting coatings.
 - (5) Coating application utilizing aerosol can spray coating.
- g. **Metal Parts Coating:**
 - (1) Stencil coatings.
 - (2) Safety-indicating coatings.
 - (3) Solid-film lubricants.
 - (4) Electric-insulating and thermal-conducting coatings.
 - (5) Magnetic data storage disk coatings.
 - (6) Plastic extruded onto metal parts to form a coating.

104 TOTAL CATEGORICAL EXEMPTIONS: This rule does not apply to the following operations:

- 104.1** Aerospace coating operations (Rule 348).
- 104.2** Architectural coatings including buildings and erected structures (Rule 335).
- 104.3** Solvent cleaning or stripping a surface for coating or other purpose (Rule 331).
- 104.4** Marine vessel exterior refinishing (EPA 453/B-97-001).
- 104.5** Printing and graphic arts coating (Rule 337).
- 104.6** Semiconductor manufacturing (Rule 338).
- 104.7** Coating or refinishing a highway vehicle or mobile equipment (Rule 345).
- 104.8** Coating wood furniture and fixtures (Rule 342).
- 104.9** Coating wood millwork (Rule 346).

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

- 201 ADHESIVE:** A material used for the primary purpose of bonding two or more surfaces together.
- 202 ADHESION PRIMER:** A coating that is applied to a plastic polymer part to promote the adhesion of a subsequent coating.
- 203 AEROSOL CAN SPRAY COATING:** A coating sold in a hand-held, pressurized, non-refillable container, of less than 22 fluid ounces (0.66 liter) capacity, and that is expelled from the container in a finely divided form when a valve on the container is depressed.
- 204 AIR-DRIED COATING:** A coating dried by the use of air or forced warm air at temperatures up to and including 200°F (93.3°C).
- 205 ALTERNATIVE APPLICATION METHODS:** Any method approved by the Administrator as HVLP-equivalent.
- 206 ANTIFOULANT COATING:** A coating applied to the underwater portion of a pleasure craft to prevent or reduce the attachment of biological organisms, and registered with the United States Environmental Protection Agency (EPA) as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act (7 United States Code Section 136).
- 207 BAKED COATING:** A coating that is dried or cured in an oven in which the oven temperature exceeds 200°F (93.3°C).
- 208 BUSINESS MACHINE:** A device that uses electronic or mechanical methods to process information, perform calculations, print or copy information, or convert sound into electrical impulses for transmission, such as:
 - 208.1** Products classified as typewriters under SIC Code 3572;
 - 208.2** Products classified as electronic computing devices under SIC Code 3573;

- 208.3** Products classified as calculating and accounting machines under SIC Code 3574;
- 208.4** Products classified as telephone and telegraph equipment under SIC Code 3661;
- 208.5** Products classified as office machines, not elsewhere classified, under SIC Code 3579; and (6) photocopy machines, a subcategory of products classified as photographic equipment under SIC Code 3861.
- 209** **CAMOUFLAGE COATING:** A coating used, principally by the military, to conceal equipment from detection.
- 210** **CAN COATING:** A coating either used in the production of metal cans applied to the surface(s) of formed cans or applied at a can making facility to the surface(s) of flat metal sheets or strips that are formed there into cans.
- 211** **CAN PRINTING INK:** A fluid or viscous formulation used in can printing that imparts design, pattern, and/or alphanumeric symbols to a can.
- 212** **CLEAR COAT:** A coating that lacks color or opacity or is transparent.
- 213** **COATING APPLICATION EQUIPMENT:** Any equipment including, but not limited to, spray guns, wands, rollers, brushes used to apply or cover a surface with a coating for either aesthetic, protection or other purpose.
- 214** **COIL COATING:** A coating applied to the surface(s) of flat metal sheets or strips that is formed into rolls or coils not used to make cans.
- 215** **DAY:** A period of 24 consecutive hours beginning at midnight.
- 216** **DIP COATING:** A method of applying a coating to a substrate by submersion into and removal from a coating bath.
- 217** **DRUM COATING:** Coating of a cylindrical metal shipping container larger than 12 gallons capacity but no larger than 110 gallons capacity.
- 218** **ELECTRIC DISSIPATING COATING:** A coating that rapidly dissipates a high-voltage electric charge.
- 219** **ELECTRIC INSULATING VARNISH:** A non-convertible-type coating applied to electric motors, components of electric motors, or power transformers, to provide electrical, mechanical, and environmental protection or resistance.
- 220** **ELECTROMAGNETIC INTERFERENCE (EMI)/ RADIO-FREQUENCY INTERFERENCE (RFI) SHIELDING:** A coating used on electrical or electronic equipment to provide shielding against electromagnetic interference, radio frequency interference, or static discharge.
- 221** **ELECTROSTATIC SYSTEM:** A method of applying atomized paint by electrically charging the coating and the object being coated with opposing charges. A higher proportion of the coating reaches and coats the object than would occur in the absence of a charge.
- 222** **EMISSION CONTROL SYSTEM (ECS):** A system, approved in writing by the Control Officer, to reduce emissions of volatile organic compounds. Such a system consists of an emissions collection system and an emissions processing subsystem.
- 223** **END SEALING COMPOUND:** A compound which is coated onto can ends and functions as a gasket when the end is attached to the can.

- 224 **ETCHING FILLER:** A coating that contains less than 23 percent solids by weight and at least ½ percent acid by weight, and is used instead of applying a pretreatment coating followed by a primer.
- 225 **EXEMPT COMPOUNDS:** The federally listed non-precursor organic compounds, which have been determined to have negligible photochemical reactivity as listed in 40 CFR 51.100(s)(1) and in Appendix G of these rules.
- 226 **EXTERIOR CAN BASECOAT:** A coating applied to the exterior of a can to provide protection for the metal or to provide background for any lithographic or printing operation.
- 227 **EXTREME HIGH-GLOSS COATING:** A coating when tested by the ASTM D-523 adopted in 1980 shows reflectance of 75 or more on a 60° meter.
- 228 **EXTREME-PERFORMANCE COATING:** A coating used on a surface where the coated surface in its intended use is at temperatures consistently in excess of 250°F (121°C).
- 229 **FABRIC:** A textile material. Non-manufactured items from nature are not fabric except for natural threads, fibers, filaments, and similar that have been manufactured into textile fabric.
- 230 **FABRIC COATING:** A decorative or protective coating or reinforcing material applied either onto or impregnated into textile fabric.
- 231 **FILLER:** A relatively non-adhesive substance added to an adhesive to improve its working properties, permanence, strength, or other qualities.
- 232 **FILM COATING:** A coating applied in a web coating process on film substrate other than paper or fabric, including, but not limited to, typewriter ribbons, photographic film, magnetic tape, and metal foil gift wrap.
- 233 **FINISH PRIMER/SURFACER:** A coating applied for purposes of providing corrosion resistance, adhesion of subsequent coatings, a moisture barrier, or promotion of a uniform surface necessary for filling in surface imperfections. A finish primer/surfacer shall have a wet film thickness of less than 10 mils as determined by ASTM Method D 1212-85. A one-component finish primer is any finish primer where the coating resin cures without the need for an added catalyst or converter. A two-component finish primer is any finish primer where the coating resin cures only when a catalyst or converter is added.
- 234 **FLEXIBLE PLASTIC PART OR PRODUCT:** A plastic part or product designed to withstand significant deformation without damaging it for its intended use. Not included are flexible plastic parts that are found on a can, coil, metal furniture, or large appliance, or that are already a part of an aerospace component, highway vehicle, mobile equipment, architectural building or structure, or a previously coated marine-vessel.
- 235 **FLOW COAT:** A non-atomized technique of applying coatings to a substrate with a fluid nozzle in a fan pattern with no air supplied to the nozzle.
- 236 **FOG COAT:** A coating that is applied to a plastic part for the purpose of color matching without masking a molded-in texture. A fog coat shall not be applied at a thickness of more than 0.5 mils of coating solids.
- 237 **GLOSS REDUCER:** A coating that is applied to a plastic part solely to reduce the shine of the part and is applied at a thickness of less than or equal to 0.5 mils of coating solids.
- 238 **HAND APPLICATION METHODS:** Application of coatings by non-mechanical, hand-held equipment including, but not limited to, paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.
- 239 **HEAT-RESISTANT COATING:** A coating that must withstand a temperature of at least 400°F (204°C) during normal use.

- 240 HIGH PERFORMANCE ARCHITECTURAL COATING:** A coating used to protect architectural subsections and that meets the requirements of the Architectural Aluminum Manufacturer Association's publication number AAMA 2604-05 (Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels) or 2605-05 (Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels).
- 241 HIGH BUILD PRIMER/SURFACER:** A coating applied for purposes of providing corrosion resistance, adhesion of subsequent coatings, or a moisture barrier, or promoting a uniform surface necessary for filling in surface imperfections. A high-build primer/surfacer shall have a wet-film thickness of 10 mils or more as determined by ASTM Method D1212-85.
- 242 HIGH GLOSS COATING:** A coating that achieves at least 85 percent reflectance on a 60° meter when tested by ASTM D 523-89.
- 243 HIGH TEMPERATURE COATING:** A coating that is certified to withstand a temperature of 1000°F (537°C) for 24 hours.
- 244 HIGH-VOLUME, LOW PRESSURE (HVLP) SPRAY GUN:** Spray equipment that is used to apply coating by means of a spray gun that operates at 10 psig of atomizing air pressure or less at the center of the air cap. A permanently affixed manufacturer's gun identification or manufacturer's gun literature shall identify and be proof of an HVLP gun.
- 245 HIGHWAY VEHICLE:** A vehicle that is physically capable of being driven upon a highway including, but not limited to, cars, pickups, vans, trucks, truck-tractors, motor-homes, motorcycles, and utility vehicles.
- 246 INTERIOR BASECOAT:** A coating applied to the interior of a can to provide a protective lining between the intended contents and the metal shell of the can.
- 247 INTERIOR BODY SPRAY:** A coating sprayed onto the interior of a can to provide a protective film between the intended contents and the metal shell of the can.
- 248 IN USE OR HANDLED:** Actively engaging the materials with activities such as mixing, depositing, brushing, rolling, padding, wiping or removing or transferring material into or out of the container.
- 249 LARGE APPLIANCE:** A door, case, lid, panel, or interior support part of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, air conditioners, evaporative coolers, and other similar products.
- 250 LOW PRESSURE SPRAY GUN:** An air-atomized spray gun, which by design, functions best at air cap pressures below 10 psig (0.7 bar), measured according to Section 503.1(d) of this rule, and for which the manufacturer makes no public claims that the gun can be used effectively above 12 psig (0.8 bar).
- 251 MARINE VESSEL:** A tugboat, tanker, freighter, passenger ship, barge, or other boat, ship or watercraft used for commercial purposes. This definition excludes those boats used primarily for recreational purposes.
- 252 METAL FURNITURE:** Furniture made of metal or any metal part which will be assembled with other parts made of metal or other material(s) to form a furniture piece.
- 253 METALLIC COATING:** A coating that contains more than 5 grams of metal particles per liter of coating as applied.
- 254 MILITARY SPECIFICATION COATING:** A coating that has a formulation that has been approved by a United States Military Agency for use on military equipment.

- 255 **MOBILE EQUIPMENT:** Equipment that is physically capable of being driven or drawn on a highway including, but not limited to, construction vehicles (such as mobile cranes, bulldozers, concrete mixers); farming equipment (wheel tractor, plow, pesticide sprayer); hauling equipment (truck trailers, utility bodies, camper shells); and miscellaneous equipment (street cleaners, mopeds, golf carts).
- 256 **MOLD-SEAL COATING:** The initial coating applied to a new mold or a repaired mold to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold.
- 257 **MULTI-COLORED COATING:** A coating that is packaged in a single container, applied in a single coat and exhibits more than one color when applied.
- 258 **MULTI-COMPONENT COATING:** A coating requiring the addition of a separate reactive resin, commonly known as a catalyst or hardener, prior to application to form an acceptable dry film.
- 259 **ONE-COMPONENT COATING:** A coating that is ready for application as it comes out of its container to form an acceptable dry film. A thinner necessary to reduce the viscosity is not considered a component.
- 260 **OPTICAL COATING:** A coating applied to an optical lens.
- 261 **OTHER METAL PARTS AND PRODUCTS:** Any metal part or product, excluding the following items that are made of metal: can, coil, furniture, large appliance, aerospace component, metal foil, metal textile fabric, semiconductor metal, highway vehicle, mobile equipment, an architectural building or structure, a previously coated marine-vessel.
- 262 **OVERVARNISH:** A coating applied to a can to reduce the coefficient of friction, to provide gloss, or to protect the finish against abrasion and/or corrosion.
- 263 **PAN BACKING COATING:** A coating applied to the surface of pots, pans, or other cooking implements that are exposed directly to a flame or other heating element.
- 264 **PAPER COATING:** A coating applied on or impregnated into paper, including, but not limited to, adhesive tapes, book covers, post cards, office copier paper, and drafting paper.
- 265 **PLASTIC:** Substrates made from one or more resins and may be solid, porous, flexible, or rigid. Plastics include fiber reinforced plastic composites. Any solid, synthetic: resin, polymer, or elastomer, except rubber. For the purposes of this rule, plastic film is considered film; fabric and paper made of polymeric plastic fibers are considered fabric and paper, respectively.
- 266 **PLEASURE CRAFT:** Vessels which are manufactured or operated primarily for recreational purposes, or leased, rented, or chartered to a person or business for recreational purposes.
- 267 **PLEASURE CRAFT COATING:** A marine coating that is applied to or intended by the manufacturer to be applied to pleasure craft.
- 268 **PREFABRICATED ARCHITECTURAL COMPONENT COATING:** A coating applied to metal parts and products which are to be used as an architectural structure.
- 269 **PRESSURE SENSITIVE TAPE OR LABEL:** A flexible strip of paper, backing material, or other material that is coated on one side with a permanently tacky adhesive which will adhere to a variety of surfaces with light pressure.
- 270 **PRETREATMENT COATING:** A coating containing no more than 12 percent solids by weight, and at least ½ percent acid, by weight, is used to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion and ease of stripping.

- 271 **PRETREATMENT WASH PRIMER:** A coating that contains no more than 12 percent solids, by weight, and at least ½ percent acids, by weight, is used to provide surface etching, and is applied directly to fiberglass and metal surfaces to provide corrosion resistance and adhesion of subsequent coatings.
- 272 **PRIMER:** A coating applied directly to substrate for any one or combination of the following purposes: corrosion prevention, protection from the environment, functional fluid resistance, or adhesion of subsequent coatings.
- 273 **QUALITY CLASS Q:** A system, structure, coating or other component that, if defective or inoperable, could cause or increase the severity of a nuclear incident, thereby imposing undue risk to the health and safety of the public.
- 274 **REFRIGERATED GLASS DOOR COATING:** A two-component coating or ink used for the manufacturing of refrigerated glass doors that forms a decorative or protective film and provides a substrate for bonding materials such as seals, spacers, and sealants.
- 275 **REPAIR COATING:** A coating used to recoat the portion of a completed finish that suffered post-production damage at the facility where the finish was applied.
- 276 **SHOCK-FREE COATING:** A coating applied to electrical components to protect the user from electric shock. The coating has characteristics of being of low capacitance and high resistance, and having resistance to breaking down under high voltage.
- 277 **SILICONE RELEASE COATING:** A resin coating, the major cured portion of which is silicone resin, having as its primary function the release of food products from metal surfaces such as baking pans.
- 278 **SMALL SURFACE-COATING SOURCE (SSCS):** A facility from which the total VOC emissions for all surface coating operations that are subject to this rule without, or prior to, any emission control, is less than 2 tons/yr (1814 kg); as demonstrated by both adequate records of coating and diluent use (according to Section 501.2 of this rule) and a separate tally of the number of days each month such coating operations occur.
- 279 **SOLAR-ABSORBENT COATING:** A coating with the prime purpose of absorption of solar radiation.
- 280 **STENCIL COATING:** An ink or a coating that is rolled or brushed onto a template or stamp in order to add identifying letters, symbols and/or numbers.
- 281 **STRIPPABLE BOOTH COATING:** A temporary coating that is applied to spray booth surfaces to receive the overspray and protect the surfaces, and which is designed to readily be pulled off the substrate in strips or sheets, and disposed of.
- 282 **SURFACE COATING:** A liquid, fluid, or mastic composition that is converted to a solid (or semi-solid) protective, decorative, or adherent film or deposit after application as a thin layer. Surface coating is generally distinct and different from impregnation and from applying adhesive for bonding purposes.
- 283 **SURFACE COATING OPERATION:** Preparation, handling, mixing, and application of surface coating, and cleanup of application equipment and enclosures at a facility where surface coating is applied.
- 284 **TEXTURE COATING:** A coating that is applied which, in its finished form, consists of discrete raised spots of the coating.
- 285 **THREE-PIECE CAN SIDE-SEAM COATING:** A coating sprayed onto the interior and/or exterior of a can body seam on a three-piece can to protect the exposed metal.
- 286 **TOPCOAT:** The final, permanent, coating formulation that completes the finish on a surface.

- 287 **TOUCH-UP COATING:** A coating used to cover minor coating imperfections after the main coating operation. This includes touch-up coating that accompanies the purchase of an object already coated with that coating.
- 288 **TRANSFER EFFICIENCY:** The ratio of the weight of coating solids adhering to the part being coated to the weight of coating solids used in the application process expressed as a percentage.
- 289 **TWO-PIECE CAN EXTERIOR END COATING:** A coating applied to the exterior end of a can to provide protection to the metal.
- 290 **VACUUM METALIZING COATING:** The undercoat applied to the substrate on which metal is deposited or the overcoat applied directly to the metal film. Vacuum metalizing is the process of evaporating metals inside a vacuum chamber and then bonding the metals to the desired substrate to achieve a uniform metalized layer.
- 291 **VINYL COATING:** A decorative or protective coating or reinforcing coating applied over vinyl-coated textile fabric or vinyl sheets.
- 292 **VOC ACTUAL:** The weight of volatile organic compounds minus the weight of water and minus the weight of exempt organic compounds divided by the total volume of the materials. Units of VOC Actual are in pounds of VOC per gallon (or grams per liter) of material and shall be calculated using the following equation:

$$\text{VOC Actual} = \frac{W_s - W_w - W_{es}}{V_m}$$

Using consistently either English or metric measures in the calculations, where:

W_s = weight of all volatile material in pounds (or grams) including VOC, water, non-precursor organic compounds and dissolved vapors

W_w = weight of water in pounds (or grams)

W_{es} = weight of all non-precursor organic compounds in pounds (or grams)

V_m = volume of total material in gallons (or liters)

- 293 **VOC CONTENT:** The organic chemicals in a material that have a vapor pressure at ordinary room temperature. This vapor pressure results from a low boiling point, which causes large numbers of molecules to evaporate or sublimate from the liquid or solid form of the compound and enter the surrounding air. The term VOC content is a general term used throughout the rule and includes VOC, VOC Actual and VOC Regulatory.
- 294 **VOC REGULATORY:** The weight of volatile organic compounds minus the weight of water and minus the weight of exempt compounds divided by the volume of material minus the volume of water and minus the volume of exempt compounds. Units of VOC Regulatory are in pounds of VOC per gallon (or grams per liter) of material and shall be calculated using the following equation:

$$\text{VOC Regulatory} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Using consistently either English or metric measures in the calculations, where:

- W_s = weight of all volatile material in pounds (or grams), including VOC, water, non-precursor organic compounds and dissolved vapors
- W_w = weight of water in pounds (or grams)
- W_{es} = weight of all non-precursor organic compounds in pounds (or grams)
- V_m = volume of total material in gallons (or liters)
- V_w = volume of water in gallons (or liters)
- V_{es} = volume of all non-precursor organic compounds in gallons (or liters)

SECTION 300 – STANDARDS

- 301 SURFACE COATINGS:** An owner or operator shall comply with one of the following for all applications of surface coatings:
- 301.1** Meet the limits in Tables 336-1 through 336-7 of this rule. Coating limits are calculated as VOC Regulatory (as applied). Compliance will be determined based on the VOC content limit, as expressed in metric units. English units are provided for information only; or
- 301.2** Operate an Emission Control System (ECS) in accordance with Section 305 of this rule when applying a coating that exceeds the VOC limits in Tables 336-1 through 336-7 of this rule. All VOC coatings used that exceed the VOC limits in Tables 336-1 through 336-7 of this rule shall be clearly labeled such that coating-operators are informed that an ECS must be used during application of surface coatings; or
- 301.3** Qualify for an exemption under Sections 103 or 104 of this rule.

Table 336-1: Coating Limits for Metal Parts and Products

Coating Category	Air Dried		Baked	
	g VOC/l	lb VOC/gal	g VOC/l	lb VOC/gal
Camouflage	420	3.5	420	3.5
Drum Coating, New, Exterior	340	2.8	340	2.8
Drum Coating, New, Interior	420	3.5	420	3.5
Drum Coating, Reconditioned, Exterior	420	3.5	420	3.5
Drum Coating, Reconditioned, Interior	500	4.2	500	4.2
Electric-Insulating Varnish	420	3.5	420	3.5
Etching Filler	420	3.5	420	3.5
Extreme High-Gloss	420	3.5	360	3.0
Extreme Performance	420	3.5	360	3.0
Heat-Resistant	420	3.5	360	3.0
High Performance Architectural	740	6.2	740	6.2
High Temperature	420	3.5	420	3.5
Metallic	420	3.5	420	3.5
Military Specification	340	2.8	280	2.3
Mold-Seal Coating	420	3.5	420	3.5
Multi-Component	340	2.8	280	2.3
One-Component	340	2.8	280	2.3
Other Metal Parts and Products: Includes Non-Adhesive Coating, Adhesive, Adhesive	420	3.5	360	3.0

Coating Category	Air Dried		Baked	
	g VOC/l	lb VOC/gal	g VOC/l	lb VOC/gal
Primer, Beaded Sealant, and Caulking				
Pan Backing	420	3.5	420	3.5
Prefabricated Architectural Multi-Component	420	3.5	280	2.3
Prefabricated Architectural One-Component	420	3.5	280	2.3
Pretreatment Coating	420	3.5	420	3.5
Repair	420	3.5	360	3.0
Silicone Release	420	3.5	420	3.5
Solar-Absorbent	420	3.5	360	3.0
Strippable Booth Coating	240	2.0	–	–
Touch-up	420	3.5	360	3.0
Vacuum Metalizing	420	3.5	420	3.5

Table 336-2: Coating Limits for Cans and Coils

Coating Category	g VOC/l	lb VOC/gal
Strippable Booth Coating (applies to both can and coil coating categories)	240	2.0
Can Coating		
Can Printing Ink	300	2.5
End Sealing Compound	440	3.7
Sheet Basecoat (Exterior and Interior) and Overvarnish	340	2.8
Three-Piece Can Side-Seam Spray	660	5.5
Two and Three-Piece Can Interior Body Spray	510	4.2
Two-Piece Can Exterior (Basecoat and Overvarnish)	340	2.8
Two-Piece Can Exterior End (Spray or Roll Coat)	510	4.2
Coil Coating	310	2.6

Table 336-3: Coating Limits for Plastic Parts and Products

Coating Category	g VOC/l	lb VOC/gal
Electric Dissipating Coatings and Shock-Free Coatings	800	6.7
Extreme Performance	420 (2-pack coatings)	3.5 (2-pack coatings)
Flexible Plastic Parts and Products		
Basecoat	540	4.5
Clearcoat	540	4.5
Color Topcoat	450	3.8
Primer	490	4.1
Metallic	420	3.5
Military Specification	340 (1 pack) 420 (2 pack)	2.8 (1 pack) 3.5 (2 pack)
Mold-Seal Coating	760	6.3
Multi-Colored Coating	680	5.7
Multi-Component	420	3.5
One-Component	280	2.3
Optical Coatings	800	6.7
Plastic Parts and Products That Are Not Defined As Flexible	420	3.5
Strippable Booth Coating	240	2.0
Vacuum Metalizing	800	6.7

Table 336-4: Coating Limits for Business Machines

Coating Category	g VOC/l	lb VOC/gal
Fog Coat	260	2.2
Primer	350	2.9
Repair	350	2.9
Strippable Booth Coating	240	2.0
Texture Coating	350	2.9
Topcoat	350	2.9
Touch-up	350	2.9

Table 336-5: Coating Limits for Metal Furniture and Large Appliances

Coating Category	Air Dried		Baked	
	g VOC/l	lb VOC/gal	g VOC/l	lb VOC/gal
Extreme High Gloss	340	2.8	360	3.0
Extreme Performance	420	3.5	360	3.0
Heat-Resistant	420	3.5	360	3.0
Metallic	420	3.5	420	3.5
Multi-Component	340	2.8	275	2.3
One-Component	275	2.3	275	2.3
Pretreatment Coating	420	3.5	420	3.5
Refrigerated Glass Door Coating	480	4.0	–	–
Solar-Absorbent	420	3.5	360	3.0
Strippable Booth Coating	240	2.0	–	–

Table 336-6: Coating Limits for Paper, Fabric, Film, Foil, and Vinyl

Coating Category	kg VOC/kg Coating (lb VOC/lb solids)	kg VOC/kg Solids (lb VOC/lb solids)	g VOC/l	lb VOC/gal
Fabric	–	–	350	2.9
Paper, Film, and Foil Surface Coating (Not Including Pressure Sensitive Tape and Label)	0.08	0.40	–	–
Pressure Sensitive Tape and Label Surface Coating	0.067	0.20	–	–
Strippable Booth Coating	–	–	240	2.0
Vinyl	–	–	450	3.8

Table 336-7: Coating Limits for Pleasure Craft

Coating Category	g VOC/l	lbs VOC/gal
All Other Pleasure Craft Surface Coatings for Metal or Plastic	420	3.5
Aluminum Substrate Antifoulant Coating	560	4.7
Extreme High Gloss Topcoat	600	5.2
Finish Primer/Surfacer	600	5.2
High Build Primer/Surfacer	340	2.8
High Gloss Topcoat	420	3.5
Other Substrate Antifoulant Coating	400	3.4
Pretreatment Wash Primer	780	6.5
Strippable Booth Coating	240	2.0

302 APPLICATION METHODS FOR SURFACE COATINGS:

302.1 An owner or operator shall use one of the following methods for all applications of surface coating materials containing more than 2 pounds of VOC per gallon (240 g/L), minus exempt compounds (VOC Regulatory):

- a. HVLP spray gun;
- b. Electrostatic system;
- c. A system that atomizes principally by hydraulic pressure, including “airless” and “air assisted airless”;
- d. Hand application methods, including but not limited to:
 - (1) Flow Coat;
 - (2) Roll Coat;
 - (3) Dip-Coating;
- e. **An Alternative Application Method:** Any method approved by the Administrator as HVLP-equivalent.

302.2 An owner or operator is allowed to use an application method other than that described in Section 302.1 of this rule:

- a. For applications of surface coating materials containing less than or equal to 2 pounds of VOC per gallon (240 g/L), minus exempt compounds (VOC Regulatory).
- b. For applications of surface coating materials containing more than 2 pounds of VOC per gallon (240 g/L), minus exempt compounds (VOC Regulatory):
 - (1) If VOC emissions from the finishing application are captured and directed to an ECS complying with the provisions of Section 305 of this rule; or
 - (2) If coating the inside of pipes and tubes with a wand-style applicator; or
 - (3) If using an airbrush or other small gun that has a reservoir capacity not exceeding 250 cc (8.8 fl. oz.) and is used solely for detailing, lettering, touch-up, and/or repair.

303 **CLEANUP OF APPLICATION EQUIPMENT:** An owner or operator shall comply with the following when using VOC-containing material to clean application equipment:

303.1 Spray-Gun Cleaning Requirements:

- a. Clean spray-guns without spraying or atomizing a solvent cleaner with the gun.
- b. **Spray-Gun Cleaning Machine:** Use a spray-gun cleaning machine that complies with the following requirements unless the owner or operator complies with the manual spray-gun cleaning requirements in Section 303.2 of this rule.
 - (1) **Spray-Gun Cleaning Machine-General Requirements:** The spray-gun cleaning machine shall meet all of the following requirements:
 - (a) Be designed to clean spray-guns.

- (b) Have at least one pump that drives solvent cleaner through and over the spray-gun.
- (c) Have a basin which permits containment of the solvent cleaner.
- (d) Be kept in proper repair and free from liquid leaks.
- (e) Be fitted with a cover.
- (f) Be located on-site where the spray application occurs; and
- (g) Be operated and maintained according to manufacturer's or distributor's instructions.

(h) Porous Material:

- (i) Do not clean nor use porous or absorbent materials to clean parts or products in a cleaning machine. For the purpose of this rule, porous or absorbent materials include, but are not limited to, cloth, leather, wood, and rope.
 - (ii) Do not place an object with a sealed wood handle, including a brush, in or on a cleaning machine.
 - (iii) Do not place porous or absorbent materials, including, but not limited to, cloth, leather, wood, and rope in or on a cleaning machine.
- (2) **Automatic Spray-Gun Cleaning Machine:** An automatic spray-gun cleaning machine shall have a self-covering or enclosing cover feature that in the cover's closed position allows no gaps exceeding 1/8 inch (3 mm) between the cover and the cabinet. This self-enclosing feature shall be maintained and consistently cover or enclose to these gap limits.
- (3) **Non-Automatic Remote Reservoir Cleaning Machine:** A non-automatic remote reservoir cleaning machine shall meet all of the following requirements:
- (a) Drain solvent cleaner from the sink/work-space into a remote reservoir when work-space is not in use;
 - (b) Machine reservoir shall not have cumulative total openings, including the drain opening(s) exceeding two square inches in area; and
 - (c) The base of the sink/work-space may function as the reservoir's top surface, as long as the fit/seal between sink base and reservoir container allows the reservoir to meet the opening limits specified in Section 303.1(b)(3)(b) of this rule.

303.2 Manual Spray-Gun Cleaning Requirements: An owner or operator manually cleaning spray-guns shall comply with the following requirements:

- a. Disassembled spray-guns must be cleaned by non-mechanical, hand-held method of application of cleaners
- b. If disassembled spray-guns are soaked they shall remain covered at all times, except when the application equipment is being handled in the container or transferred into or out of the container;

304 WORK PRACTICES-HANDLING, DISPOSAL AND STORAGE OF VOC-CONTAINING MATERIAL: An owner or operator of any surface coating facility shall store, handle, and dispose of

VOC-containing material in a manner that prevents the evaporation of VOC to the atmosphere. Work practices limiting VOC emissions include, but are not limited to, all of the following:

- 304.1 Use and Storage:** An owner or operator shall cover and keep covered each VOC-containing material which is not currently in use. An owner or operator shall store finishing and cleaning materials in closed or covered leak-free containers.
- 304.2 Disposal of VOC-Containing Material:** An owner or operator shall store all VOC-containing materials intended for disposal including, but not limited to, rags, waste coatings, waste brushes, waste rollers, waste applicators, waste solvents, and their residues, in closed, leak free containers. The containers shall remain covered with a leak tight cover, when not in use.
- 304.3** Minimize spills of VOC-containing coatings, thinners, and coating-related waste materials.
- 304.4** Convey VOC-containing coatings, thinners, and coating-related waste materials from one location to another in closed containers or pipes.
- 304.5** Containers in which VOC-containing materials are stored must have a legible label identifying the container's contents.

305 EMISSION CONTROL SYSTEM (ECS) REQUIREMENTS:

- 305.1 ECS Control Efficiencies:** To meet the requirements pursuant to Section 301.2 of this rule, an ECS shall be operated as follows:
 - a. Overall ECS Efficiency:** The overall control efficiency of an ECS shall be determined by multiplying the capture efficiency by the destruction efficiency of the control device expressed as a percentage. An owner or operator, who chooses to use an ECS instead of meeting the limits in Tables 336-1 through 336-7 of this rule and specified application methods, shall operate an ECS that has a 90 percent overall ECS efficiency.
 - b. Alternative for Very Dilute Input:** For VOC input-concentrations of less than 100 ppm (as methane) at the inlet of the ECS, the control efficiency is satisfied if the VOC output is less than 20 mg VOC/m³(as methane) adjusted to standard conditions.
- 305.2 Operation and Maintenance (O&M) Plan Required for ECS:**
 - a.** An owner or operator shall provide and maintain (an) O&M Plan(s) for any ECS, any other emission processing equipment, and any ECS monitoring devices used pursuant to this rule or to a Maricopa County Air Pollution Permit.
 - b.** The owner or operator shall submit to the Control Officer for approval the O&M Plans of each ECS and each ECS monitoring device used pursuant to this rule.
 - c.** The owner or operator shall comply with all identified actions and schedules provided in each O&M Plan.
- 305.3 Providing and Maintaining ECS Monitoring Devices:** An owner or operator incinerating, adsorbing, or otherwise processing VOC emissions pursuant to this rule shall provide, properly install and maintain in calibration, in good working order devices described in the facility's O&M Plan that indicate temperatures, pressures, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly and is properly maintained. Records shall be kept pursuant to Section 502 of this rule which demonstrate that the ECS meets the overall control standard required by Section 305.1 of this rule and is operated in accordance with the equipment manufacturer's specifications.

305.4 O&M Plan Responsibility: An owner or operator of a facility that is required to have an O&M Plan pursuant to Section 305.2 of this rule must fully comply with all O&M Plans that the owner or operator has submitted for approval, but which have not yet been approved, unless notified otherwise by the Control Officer in writing.

305.5 Operation and Maintenance (O&M) Plan Contents for an ECS: An O&M Plan for any ECS including any ECS monitoring devices shall include all of the following information:

- a. ECS equipment manufacturer;
- b. ECS equipment model;
- c. ECS equipment identification number or identifier that owner or operator subject to this rule assigns to such ECS equipment when manufacturer's equipment identification number is unknown; and
- d. Information required by Sections 502 and 503 of this rule.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE VOC LIMITS:

Emission Control System (ECS): An owner or operator installing an ECS shall:

- a. Implement all recordkeeping provisions, including Section 502 of this rule.
- b. Announce the intention to use an ECS to the Control Officer in writing if the ECS is used as an alternative to meeting the VOC limits of Section 301.1 of this rule.

VOC Limits and Rule Requirements: Upon adoption of this rule, the owner or operator shall discontinue purchase of materials that are non-compliant with Section 301.1 of this rule. The owner or operator has up to May 2, 2017 to complete use of existing non-compliant materials already purchased. A schedule for phasing out non-compliant materials shall be prepared and made available to an inspector upon request. This schedule shall specify that only compliant materials will be used after May 2, 2017.

402 COMPLIANCE SCHEDULE O&M PLAN: O&M Plans for ECS equipment subject to this rule shall be revised/updated by February 2017. The Control Officer shall notify the applicant in writing of approval or denial.

SECTION 500 – MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING: An owner or operator shall comply with the following recordkeeping requirements:

Records shall be retained for five years and shall be made available to the Control Officer without delay upon verbal or written request.

Current Lists: Maintain a current list of coatings or any other VOC-containing materials regulated by this rule. The list:

- a. Shall express VOC content in one of the following forms:
 - (1) Pounds VOC per gallon;
 - (2) Grams VOC per liter; or

- (3) The percent VOC by weight along with the specific gravity or density.
- b. Shall have the written value of the VOC coating, in one of the following forms. The documentation must provide accurate VOC content values or be based on enforceable test methods as approved by the Administrator to determine the VOC content.
 - (1) A manufacturer's technical data sheet;
 - (2) A manufacturer's safety data sheet (SDS or MSDS); or
 - (3) Actual test results.
- c. Shall maintain usage or purchase records as follows:
 - (1) **Monthly:** Records of the amount of VOC-containing materials purchased or used shall be totaled by the end of the month for the previous month. This includes, but is not limited to, all coating materials, all materials added during preparation of coatings, all materials used to clean coating application equipment, and all materials used to clean coating application areas.
 - (2) **Grouping by VOC Content:** For purposes of recording usage, an owner or operator may give VOC coatings, cleaners, and solvents of similar VOC content (VOC Regulatory) a single group-name, distinct from any product names in the group. The total usage of all the products in that group is then recorded under just one name. In such a case, the owner or operator must also keep a separate list that identifies the product names of the particular solvents included under the group name. To the group name shall be assigned the highest VOC content (VOC Regulatory) among the members of that group, rounded to the nearest tenth of a pound of VOC per gallon of material or to the nearest gram VOC per liter of material.
- d. Shall make the following listings for all coatings that have VOC limits listed in Tables 336-1 through 336-7 of this rule:
 - (1) **VOC Before Reducing:** The VOC content of each coating as received, minus exempt compounds. List the manufacturer's final VOC content as mixed in the proportions specified by the manufacturer.
 - (2) **List Maximum VOC Content of Coating as Applied:** For each coating that is thinned/reduced or additive is introduced, record in a permanent log the VOC content, after mixing the maximum amount of thinner/reducer and other additives, as determined by the formula in the definition of VOC Regulatory of this rule. This log will include the following:
 - (a) The maximum number of fluid ounces thinner/reducer added to a gallon of unreduced coating (or maximum g/liter) and the maximum fluid ounces of every other additive mixed into a gallon of the coating; or
 - (b) The VOC content of the coating after adding the maximum amount of thinner/reducer and other additives as determined by the formula in the definition of VOC Regulatory in this rule.
- e. Shall maintain usage or purchase records for aerosol can spray coating, including VOC content.

502 ECS RECORDING REQUIREMENTS: An owner or operator shall maintain all of the following records in accordance with an approved O&M Plan for any ECS:

On each day an ECS is used at a facility pursuant to this rule, the owner or operator shall make a permanent record of the key system operating parameters as required by the O&M Plan including, but not limited to, the following:

- a. Flow rates;
- b. Pressure drops;
- c. Temperature; or
- d. Other operating conditions necessary to determine if the approved ECS is functioning properly.

An explanation shall be recorded for periods of time an approved ECS is not operating.

For each day or period the O & M Plan requires maintenance, the owner or operator shall make a permanent record of the maintenance actions taken within 24 hours of the maintenance completion.

Corrective action taken, if any.

An explanation shall be entered for scheduled maintenance that is not performed during the period designated for it in the O&M Plan.

503 COMPLIANCE DETERMINATION AND TEST METHODS:

Compliance Determination: The following means shall be used to determine compliance with this rule.

- a. Measurement of VOC content of materials subject to Section 301 or Section 302 of this rule shall be conducted and reported using one of the following means:
 - (1) VOC content of coatings, solvents, and other substances having less than 5% solids will be determined by the test method in Sections 503.2(f) of this rule (BAAQMD Method 31 [April 15, 1992]) or 503.2(g) (SCAQMD Method 313-91 [April 1997]) of this rule.
 - (2) The VOC content of coatings or other materials having 5% or more solids will be determined by the test method in Sections 503.2(c) (EPA Method 24), 503.2(f) (BAAQMD Method 31 [April 15, 1992]) or 503.2(g) (SCAQMD Method 313-91 [April 1997]) of this rule.
 - (a) Plastisols, powder coatings, and radiation-cured coatings shall be cured according to the procedures actually used in the coating process being tested before final VOC-emission determinations are made.
 - (b) In the case of multi-component, polymerizing coatings tested according to Section 503.1(a) of this rule, Method 24 shall be modified to eliminate the post-mixing dilution-step (that employs toluene or other solvent). Instead, the mixture shall be spread by appropriate technique to form a thin layer, occupying the entire bottom of the foil pan. Techniques included in the method referenced in Section 503.1(b) of this rule can be used as a guide for such spreading.

- b. The VOC content of gaseous emissions entering and exiting an ECS shall be determined by either EPA Method 18 referred to in Section 503.2(b) of this rule, or EPA Method 25 and its submethod, referred to in Section 503.2(d) of this rule.
- c. Capture efficiency of an ECS shall be determined either by the methods in Section 503.2(e) of this rule (EPA Method 204 and its submethods), or by using mass balance calculation methods in concert with the methods in Section 503.2(a) of this rule (EPA Methods 2, 2a, 2c, and 2d).
- d. Measurement of air pressure at the center of the spray gun tip of an air-atomizing spray gun shall be performed using an attachable device in proper working order supplied by the gun's manufacturer for performing such a measurement.
- e. Temperature measurements shall be done with an instrument with an accuracy and precision of less than one-half degree Fahrenheit (0.25°C) for temperatures up to 480°F (250°C).

Compliance Determination-Test Methods Incorporated by Reference: The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods are incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. Alternative test methods as approved by the Administrator or other EPA-approved test methods may be used upon prior written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method will constitute a violation. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department, 1001 N. Central Avenue, Suite 125, Phoenix, AZ 85004-1942.

- a. EPA Methods 2 (“Determination of Stack Gas Velocity and Volumetric Flow Rate”), 2a (“Direct Measurement of Gas Volume Through Pipes and Small Ducts”), 2c (“Determination of Stack Gas Velocity and Volumetric Flow rate in Small Stacks or Ducts”), and 2d (“Measurement of Gas volumetric Flow Rates in Small Pipes and Ducts”). All 4 of the foregoing methods are in 40 CFR 60, Appendix A.
- b. EPA Method 18 (“Measurement of Gaseous Organic Compound Emissions by Gas Chromatography”) and its submethods (40 CFR 60, Appendix A).
- c. EPA Test Method 24 (“Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings”) (40 CFR 60, Appendix A).
- d. EPA Method 25 (“Determination of Total Gaseous Non-methane Organic Emissions as Carbon”) and its submethods (40 CFR 60, Appendix A).
- e. EPA Test Methods 204 (“Criteria for and Verification of a Permanent or Temporary Total Enclosure”), 204a, 204b, 204c, 204d, 204e, and 204f (Appendix M, 40 CFR 51).
- f. California’s Bay Area Air Quality Management District (BAAQMD) Method 31 (April 15, 1992), “Determination of Volatile Organic Compounds in Paint Strippers, Solvent Cleaners, and Low Solids Coatings.”
- g. California’s South Coast Air Quality Management District (SCAQMD) Method 313-91 (April 1997).

Test Methods for ECS: For coatings controlled pursuant to Section 305 of this rule:

- a. Measurements of VOC emissions from an ECS shall be conducted in accordance with EPA Methods 18 or its submethods, or by Method 25 or its submethods (40 CFR 60, Appendix A).

- b. Capture efficiency of an ECS shall be determined by mass balance in combination with ventilation/draft rate determinations done in accordance with Section 503.3(c) of this rule or with US EPA Test Methods 204, 204a, 204b, 204c, 204d, 204e, and 204f (Appendix M, 40 CFR 51).
- c. Ventilation/draft rates shall be determined by EPA Methods 2, 2a, 2c, and 2d (40 CFR 60, Appendix A).

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Adopted 04/06/92
Revised 04/03/96
Revised 11/20/96
Revised 01/12/11
Revised 08/17/11

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 337
GRAPHIC ARTS**

SECTION 100 – GENERAL

101 PURPOSE: To limit the emissions of volatile organic compounds (VOCs) to the ambient air from graphic arts operations.

102 APPLICABILITY: This rule applies to all VOC-containing materials associated with graphic arts operations. This includes, but is not limited to the prepress and press operations; and the cleaning materials and processes associated with such operations.

103 EXEMPTIONS:

103.1 Total Categorical Exemptions: This rule does not apply to the following operations:

- a. Circuitry printing and other associated printing performed for labeling, logo, or identification purposes on a printed circuit, its substrate, its immediate covering, or its immediate encapsulant by a circuitry printer.
- b. Coating applications that are considered coating operations but are not performed in association with a printing operation.
- c. Printing conducted on office and personal printers such as ink jet, bubble jet, and laser printers.

103.2 Partial Exemptions: Sections 302.1, 303.1, 304.1 and 305.1(a) of this rule do not apply to any graphic arts operation whose total VOC emissions from all graphic arts and related coating operations prior to control are less than 25 tons per calendar year and 4,200 pounds per month. Except as otherwise directed by air pollution permit, any graphic arts operation that becomes subject to the provisions of Section 302.1 of this rule by exceeding either the monthly or yearly threshold amounts shall remain subject to these provisions even if monthly or annual emissions later fall back below these thresholds. The following are exempt from the VOC limitations of this rule but shall comply with the work practices listed in

Section 306 of this rule and the recordkeeping requirements in Section 502.5 of this rule. For the purpose of determining exemptions, VOC substrate retention factors of not more than 20% (for heatset inks) or 95% (for non-heatset inks) shall be applied.

- a. Graphic arts operations, including surface preparation and cleanup solvents, which do not exceed a threshold limit of 225 pounds (100 kg) of VOC per month before controls.
- b. Any radiation-cured inks and coatings.
- c. Any digital printing operation.

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

- 201 ADHESIVE** – A material applied for the primary purpose of bonding two surfaces together by surface attachments. Adhesives may be used to facilitate the attachment of two surfaces or substances in varying degrees of permanence.
- 202 ALCOHOL** – A volatile organic compound – such as isopropanol, normal-propanol, or ethanol – of alkane structure consisting of fewer than six carbon atoms and having a single OH⁻ (hydroxyl) group and no other non-alkane attachments.
- 203 ALCOHOL SUBSTITUTE** – A wetting agent, used to replace some or all of the alcohol in fountain solutions, and usually containing volatile organic compounds such as glycols and glycol ethers.
- 204 BATCH** – A supply of fountain solution or cleaning solution that is prepared and used without alteration until completely used or removed from the printing process. For the purpose of this rule, this term may apply to solutions prepared in either discrete solutions or solutions that are continuously blended with automatic mixing units.
- 205 CIRCUITRY PRINTING** – Any graphic arts operation which either uses ink(s) with specific electrical properties to print an electrical circuit, or prints a circuit pattern that is made into an electrical circuit through further processing.
- 206 CLEANING SOLUTION** – Any liquid, including automatic blanket and roller wash system or manual blanket wash and roller wash, used to remove ink and debris from the operating surfaces of a printing press or from any of the attached parts of a press.
- 207 DIGITAL PRINTING** – A method of printing that does not use a physical master, stencils or plates but uses an electronic output device to transfer variable data, in the form of an image, from a computer to a variety of substrates. Digital printing methods include,

but are not limited to, inkjet printing, electrophotographic printing, dye sublimation printing, thermal wax printing and solid ink printing.

- 208 EMISSION CONTROL SYSTEM (ECS)** – A system for reducing emissions of organic compounds, consisting of both collection and control devices that are approved in writing by the Control Officer and are designed and that are operated in accordance with good engineering practice.
- 209 EXTREME PERFORMANCE** – An ink or coating used in screen printing on a non-porous substrate that is designed to resist or withstand either of the following:
- 209.1** More than two years of outdoor exposure; or
- 209.2** Exposure to industrial-grade chemicals, solvents, acids, detergents, oil products, cosmetics, temperatures exceeding 170 °F, vacuum-forming, embossing or molding.
- 210 FLEXOGRAPHIC PRINTING** – The application of words, designs or pictures by a roll-printing technique in which the image-carrying surface is raised above the surface of the printing roll and the image carrier is made of flexible rubber or other elastomeric material. The image is transferred to the substrate through first applying ink to a smooth roller which in turn transfers the ink onto the raised pattern of the rubber or elastomeric image carrier fastened around a second roller, which then transfers the ink onto the substrate.
- 211 FOUNTAIN SOLUTION** – The solution applied to the image plate to maintain the hydrophilic properties of the non-image areas, and to keep the non-image areas free from ink.
- 212 GRAPHIC ARTS** – All printing processes including but not limited to digital, screen, gravure, letterpress, flexographic and lithographic printing processes, including related coating and laminating processes.
- 213 GRAPHIC ARTS COATING** – A relatively unbroken layer of material applied onto or impregnated into a substrate. A material applied after the application of inks to the substrate that serves to enhance or protect the printed substrate and includes graphic arts varnish, water-based, or radiation-cured formulation of resins, solvents, cosolvents and other additives. Equipment capable of both coating and printing is considered a “printing operation” for this rule. Coating applications that are not performed in association with a printing operation are considered coating operations and not “graphic arts operations.”
- 214 GRAPHIC ARTS MATERIAL** – Any ink, varnish, coating or adhesive, including added thinner or retarder, used in printing or related coating or laminating processes.

- 215 GRAPHIC ARTS OPERATION** – All the graphic arts processes and activities which are located on one or more contiguous or adjacent properties and are under the control of the same person (or persons under common control).
- 216 GRAVURE PRINTING** – An intaglio process in which ink is carried in minute, etched, or engraved wells on a roll or cylinder. Images are transferred onto a substrate through first applying ink to the etched roll or cylinder, wiping the lands between the cells free of ink with a doctor blade, and rolling the cylinder over the substrate so that the surface of the substrate is pressed into the cells, transferring the ink onto the substrate.
- 217 HEATSET** – A lithographic web printing process where heat is used to evaporate ink oils from the printing ink.
- 218 LETTERPRESS PRINTING** – A method in which the image area is raised relative to the non-image area and the ink is transferred to the paper directly from the image surface.
- 219 LITHOGRAPHIC PRINTING** – A planographic method of printing where the image and non-image areas of the printing plate are chemically differentiated; the image area is oil-receptive and the non-image area is water-receptive. This method differs from other printing methods, where the image is on a raised or recessed surface.
- 220 NON-HEATSET** – A lithographic printing process where the printing inks are set by absorption or oxidation of the ink oils. For the purpose of this rule, use of an infrared heater or printing conducted using radiation-cured inks is considered non-heatset.
- 221 NON-POROUS SUBSTRATE** – Any substrate whose surface prevents penetration by water.
- 222 OFFSET LITHOGRAPHIC PRINTING** – A planographic method of printing in which the image and non-image areas are on the same plane and the ink is transferred from a plate to an intermediary surface, typically a rubber blanket, which in turn transfers the image to the substrate. “Offset lithographic printing” includes the application of overprint coatings.
- 223 OVERALL CONTROL EFFICIENCY** – The overall control efficiency of an ECS is determined by multiplying the ECS efficiency by the destruction efficiency of the control device expressed as a percentage.
- 224 POROUS SUBSTRATE** – A substrate whose surface does not prevent penetration by water.
- 225 PRINTING OPERATION** – An operation that imparts color, design, pattern, alphabet or numerals onto a substrate. It differs from coating in that its principal intent is to accomplish such visual/spatial outcome(s) rather than for other purposes commonly accomplished by using coatings.

- 226 PRINTING INK** – A fluid or viscous formulation used in printing, impressing or transferring an image onto a substrate.
- 227 RADIATION-CURED INKS AND COATINGS** – A printing ink or graphic arts coating that dries by polymerization reaction by ultraviolet or electron beam radiation.
- 228 SCREEN PRINTING** – A process of passing printing ink through a screen (a taut web or fabric) to make an imprint on a substrate. A refined form of stencil has been applied to the screen such that the stencil openings determine the form and dimensions of the imprint.
- 229 SHEET-FED** – A lithographic printing process in which individual sheets of substrate are fed to the press sequentially.
- 230 SOLVENT** – Organic compounds that are used as diluents, thinners, dissolvers, viscosity reducers, cleaning agents or for a similar purpose.
- 231 SPECIAL PURPOSE** – Printing or coating on polyethylene, polyester and foil substrates for food packaging, health care products, fertilizer bags, or liquid-tight containers.
- 232 VAPOR PRESSURE** – The pressure exerted at a uniform temperature by the gas of a substance when the gas is in equilibrium with the liquid (or solid) phase of that substance.
- 233 VOC VAPOR PRESSURE (VOC COMPOSITE PARTIAL PRESSURE)** –The sum of the partial pressures of the compounds defined as VOCs, calculated according to the formula in Section 503.4 of this rule.
- 234 VOC-CONTAINING MATERIAL** – Any chemical or item that contains an organic compound that participates in atmospheric photochemical reactions, except the non-precursor organic compounds. “VOC-containing material” includes but is not limited to rags, waste coatings, waste brushes, waste rollers, waste applicators, waste solvents, and their residues are used in the surface preparation, cleanup, or removal of inks and surface coatings associated with graphic arts operations.
- 235 WEB** – A continuous substrate capable of being rolled at any point during the coating process.

SECTION 300 – STANDARDS

- 301 MANUFACTURERS AND SUPPLIERS:** A person selling, offering for sale, supplying for use, or manufacturing for sale within Maricopa County any VOC-containing material for use in graphic arts operations shall provide a material safety data sheet (MSDS) or product data sheet showing the material name, manufacturer's name, specific mixing instructions (if applicable) and VOC content as supplied. The VOC content requirement does not apply to radiation-cured inks and coatings.

302 LITHOGRAPHIC AND LETTERPRESS OPERATIONS: VOC emissions from all lithographic and letterpress operations are limited to the following:

302.1 Materials: An owner or operator of a lithographic press or letterpress shall limit VOC emissions from inks, varnishes, coatings, or adhesives, as applied, to less than or equal to 2.5 pounds per gallon (lbs/gal) (300 grams per liter [g/l]), less water and non-precursor organic compound unless VOC emissions are controlled by an ECS as described in Section 302.4 of this rule. In addition, the owner or operator shall follow the work practices described in Section 306 of this rule.

302.2 Fountain Solution: An owner or operator of a lithographic printing press shall limit the combined total volume of alcohol, alcohol substitute, and any other VOC in each fountain solution source to the percentages specified in Table 337–1.

Table 337–1. Maximum VOC Content in Percent by Weight (as Applied) for Fountain Solutions for Lithographic Printing.

Press Type	Maximum VOC Content for:		
	Fountain Solutions Containing Alcohol	Fountain Solutions Containing Alcohol Refrigerated at or Below 60 °F (15.5 °C)	Fountain Solutions Containing Alcohol Substitutes
Heatset Web			
– Prior to Jan. 12, 2012:	5.0 %	8.5 %	5%
– On or after Jan. 12, 2012:	1.6%	3.0%	5%
Sheet-Fed	5%	8.5%	5%
Cold-Set Web	None	None	5%

302.3 Cleaning Solutions: An owner or operator of a lithographic printing press or letterpress shall reduce VOC emissions from cleaning solutions by following the work practices described in Section 306 of this rule and one of the following:

- a. Use cleaning materials with a VOC composite vapor pressure less than 10 mm Hg at 20 °C; or
- b. Use cleaning materials containing less than 70 weight percent VOC.

302.4 Emission Control System (ECS):

- a. The VOC material limits of Section 302.1 of this rule do not apply when emissions of VOC to the atmosphere from the lithographic or letterpress printing operations are controlled by an ECS that meets one of the requirements listed in Table 337–2; and

- b. The dryer pressure shall be maintained lower than the press room air pressure such that air flows into the dryer at all times when the press is operating.

Table 337–2. Minimum ECS Control Efficiencies for Lithographic and Letterpress Printing Operations.

ECS Installation Date	Minimum Control Efficiency
ECS installed prior to January 12, 2011	90 percent by weight control efficiency for VOC emissions from the dryer exhaust vent.
ECS installed on or after January 12, 2011	95 percent by weight control efficiency for VOC emissions from the dryer exhaust vent
Any installation date	Concentration at or below 20 ppmv as hexane on a dry basis, as measured at the dryer exhaust vent.

302.5 Operation and Maintenance (O&M) Plan: The owner or operator of an ECS used to meet the requirements of this rule shall comply with the requirements in Section 307 of this rule.

303 ROTOGRAVURE AND FLEXOGRAPHIC OPERATIONS:

303.1 Inks, Coatings and Adhesives: The owner or operator of rotogravure or flexographic press shall limit VOC emissions from inks, coatings, and adhesives as listed in Table 337–3 or by an ECS as described in Section 303.3 of this rule. In addition, the owner or operator shall follow the work practices described in Section 306 of this rule.

Table 337–3. Maximum VOC Emissions for Materials Used in Rotogravure and Flexographic Operations.

Graphic Arts Material	Maximum VOC Emissions	
	lbs/gal	grams/liter
Ink	2.5	300
Flexographic Ink Porous Substrate:		
– Prior to Jan. 12, 2012	2.5	300
– On or after Jan. 12, 2012	1.9	225
Flexographic Ink Non-Porous Substrate	2.5	300
Coating	2.5	300
Adhesive:		
– Prior to Jan. 12, 2012	2.5	300
– On or after Jan. 12, 2012	1.25	150

303.2 Cleaning Solutions: An owner or operator of a rotogravure or flexographic press shall reduce VOC emissions from cleaning solutions by following the work practices as described in Section 306 of this rule.

303.3 Emission Control System (ECS): The limits of Section 303.1 of this rule do not apply when emissions of VOC to the atmosphere from the rotogravure or flexographic printing operations are controlled by an ECS that maintains a dryer pressure lower than the press room air pressure such that air flows into the dryer at all times when the press is operating. In addition, an ECS shall either:

- a. Meet one of the requirements listed in Table 337–4, or
- b. Reduce the VOC emissions from the dryer exhaust vent by at least 90 percent by weight, and maintain an overall capture and control efficiency of at least 65 percent by weight.

Table 337–4. Minimum ECS Efficiencies for Rotogravure and Flexographic Printing Operations.

Press and ECS Installation Dates	Minimum Overall Capture and Control Efficiency	Minimum Capture Efficiency	Minimum Control Efficiency
Press installed prior to March 14, 1995 and controlled by an add-on ECS installed prior to January 12, 2011	65 %	75 %	90 %
Press installed prior to March 14, 1995 and controlled by an add-on ECS installed on or after January 12, 2011	70 %	75 %	95 %
Press installed on or after March 14, 1995 and controlled by an add-on ECS whose first installation date was prior to January 12, 2011	75 %	85 %	90 %
Press installed on or after March 14, 1995 and controlled by an add-on ECS whose first installation date was on or after January 12, 2011	80 %	85 %	95 %

303.4 Operation and Maintenance (O&M) Plan: The owner or operator of an ECS used to meet the requirements of this rule shall comply with the requirements in Section 307 of this rule.

304 SCREEN PRINTING OPERATIONS:

304.1 An owner or operator of a screen printing operation shall limit the VOC emissions from screen printing inks, coatings and adhesives as listed in Table 337–5 or by an ECS as described in Section 304.3 of this rule. In addition, the owner or operator shall follow the work practices described in Section 306 of this rule.

Table 337–5. Maximum VOC Emissions for Screen Printing Inks, Coatings, and Adhesives.

Material	Maximum VOC Emissions	
	lbs/gal	grams/liter
Inks and Coatings	3.3	400
Adhesives	1.25	150
Special Purpose, Extreme Performance	6.7	800

304.2 Cleaning Solutions: An owner or operator of a screen printing press shall reduce VOC emissions from cleaning solutions by following the work practices as described in Section 306 of this rule.

304.3 Emission Control System (ECS):

- a. The VOC material limits of Section 304.1 of this rule do not apply when emissions of VOC to the atmosphere from the lithographic or letterpress printing operations are controlled by an ECS that meets one of the requirements listed in Table 337–4; and
- b. The dryer pressure shall be maintained lower than the press room air pressure such that air flows into the dryer at all times when the press is operating.

304.4 Operation and Maintenance (O&M) Plan: The owner or operator of an ECS used to meet the requirements of this rule shall comply with the requirements in Section 307 of this rule.

305 OTHER GRAPHIC ARTS OPERATIONS NOT COVERED BY SECTIONS 302, 303, OR 304 OF THIS RULE:

305.1 Limits of VOC Emissions: Any graphics arts operation which emits 25 tons per calendar year and 4200 pounds per month of VOC from all graphic arts and related coating operations shall: The owner or operator of any graphic arts operation whose VOC emissions from all graphic arts and related coating operations prior to control are at least 25 tons per calendar year or 4,200 pounds per month shall follow the work practices described in Section 306 of this rule. In addition, the owner or operator shall:

- a. Limit the VOC emissions from inks, varnishes, coatings, or adhesives, as applied to 2.5 lb/gal (300 g/l); or

b. Install, operate and maintain an ECS that maintains a dryer pressure lower than the press room air pressure such that air flows into the dryer at all times when the press is operating. In addition, an ECS shall:

(1) Meet one of the requirements listed in Table 337–4; or

(2) Reduce the VOC emissions from the dryer exhaust vent by at least 90 percent by weight, and maintain a minimum overall capture and control efficiency of at least 65 percent by weight.

305.2 Cleaning Solutions: An owner or operator of a graphic arts printing press shall reduce VOC emissions from cleaning solutions by following the work practices as described in Section 306 of this rule.

305.3 Operation and Maintenance (O&M) Plan: The owner or operator of an ECS used to meet the requirements of this rule shall comply with the requirements in Section 307 of this rule.

306 WORK PRACTICES – STORAGE, HANDLING AND DISPOSAL OF VOC-CONTAINING MATERIAL: For the purpose of this rule, “in use” is the active application of contents to a substrate by pouring, siphoning, brushing, rolling, padding, wiping or other methods. For the purpose of this rule, “containers” include but are not limited to drums, buckets, cans, pails, and trays. An owner or operator of any graphic arts printing operation shall store, handle, and dispose of VOCs or VOC-containing material in a way to prevent the evaporation of VOCs to the atmosphere. Work practices limiting VOC emissions include but are not limited to the following:

306.1 Labeling of Containers: All containers that are 1 gallon or larger used for collection of VOC-containing material shall be clearly identified with their contents.

306.2 Use of VOC-Containing Materials: An owner or operator shall not leave containers of ink, coating, adhesive or fountain solution or any other VOC-containing material open when not in use.

306.3 Storage and Disposal: An owner or operator shall not use open containers for the storage or disposal of VOC-containing materials.

306.4 Minimization of Spills: An owner or operator shall implement procedures to minimize spills of any VOC-containing material during handling and transfer to and from containers, enclosed systems, waste receptacles and other equipment.

306.5 Conveyance of VOC-Containing Materials: All VOC-containing materials including VOC-containing cleaning materials shall be conveyed from one location to another in labeled, closed containers or pipes.

307 OPERATION AND MAINTENANCE (O&M) PLAN REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND APPROVED EMISSION CONTROL SYSTEMS (ECS): An owner, operator, or person subject to this rule must provide, properly install and maintain in calibration, in good working order, and in operation air pollution control equipment required by this rule.

307.1 An owner, operator, or person subject to this rule must provide and maintain readily available on-site at all times (an) O&M Plan(s) for any ECS and any ECS monitoring devices that are used under this rule or an air pollution control permit.

307.2 An owner, operator, or person subject to this rule must submit to the Control Officer for review every O&M Plan(s) for any ECS including any ECS monitoring device that is used under this rule or required under an air pollution control permit.

307.3 An owner, operator, or person subject to this rule operating an ECS must install, maintain, and accurately calibrate monitoring devices described in the O&M Plan(s) including, but not limited to, monitoring devices that measure pressure differentials and other operating conditions necessary to determine if control devices are functioning properly.

307.4 An owner, operator, or person who is required to have an O&M Plan for any ECS including any ECS monitoring devices must fully comply with all elements of an O&M Plan(s) including, but not limited to every action, schedule, and condition identified in each O&M Plan.

307.5 An O&M Plan for any ECS including any ECS monitoring devices must include all of the following information:

- a. ECS equipment manufacturer,
- b. ECS equipment model,
- c. ECS equipment identification number or identifier that owner, operator, or person subject to this rule assigns to such ECS equipment when the manufacturer's equipment identification number is unknown, and
- d. Information required by Section 502.4 of this rule.

307.6 The owner, operator, or person subject to this rule, who receives a written notice from the Control Officer that the O&M Plan is deficient or inadequate, must make written revisions to the O&M Plan for any ECS including any ECS monitoring devices and must submit such revised O&M Plan to the Control Officer within five working days of receipt of the Control Officer's written notice, unless such time period is extended by the Control Officer, upon written request, for good

cause. During the time that such owner, operator, or person subject to this rule is preparing revisions to the O&M Plan, such owner, operator, or person must still comply with all requirements of this rule.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE: An owner or operator who chooses to, or is required to, comply with the new emission limits by installing or increasing the efficiency of an ECS under Section 302.4, 303.3, 304.3, or 305.1 of this rule, shall meet the following milestones:

401.1 Submit a compliance plan, by April 12, 2011, or within three (3) months of becoming subject to the rule, to the Control Officer for approval which describes the method(s) used to achieve full compliance with the rule. The compliance 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 January 12, 2012, or within twelve (12) months of becoming subject to the rule.

SECTION 500 – MONITORING AND RECORDS

501 PROVIDING AND MAINTAINING MONITORING DEVICES:

501.1 ECS Monitoring Device(s): An owner or operator of an ECS pursuant to this rule shall install, maintain, and calibrate monitoring devices described in an O&M Plan. The monitoring devices shall measure temperatures, pressures, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly. Each ECS that is operated in compliance with this rule shall be equipped with monitoring device(s) capable of demonstrating that the ECS is operating in a manner that assures compliance with this rule. The monitoring device(s) shall be installed, calibrated, maintained, and operated according to their manufacturers' instructions and the O&M Plan.

501.2 Monitoring Fountain Solution:

a. An owner or operator of any graphic arts operation shall determine the VOC concentration of each fountain solution source containing any alcohol with a refractometer, a hydrometer, or conductivity meter. The instrument shall:

(1) Have a visual readout (analog or digital) with an accuracy of ± 2 percent of the instrument's full scale, or ± 0.5 percent absolute (such as for meter readings given in percent); and

(2) Be installed, calibrated, maintained, and operated according to the manufacturer's instructions and the O&M Plan.

- b. The temperature of a refrigerated fountain solution shall be determined by the use of a temperature monitoring device. Each temperature monitoring device used for the purpose of this section shall be calibrated and accurate to ± 0.5 °F.

502 RECORDKEEPING AND REPORTING: An owner, operator or person subject to this rule shall comply with the recordkeeping and reporting requirements of this section. Records can consist of but are not limited to purchase orders, invoices, receipts, usage records, MSDS, and hazardous wastes manifests. Any records required by this rule shall be retained for five (5) years and be made available to the Control Officer upon request. Records may be kept in either electronic or paper format.

502.1 Current Materials List: The owner or operator of a graphic arts operation shall maintain a current list of inks, coatings, adhesives, fountain-solution alcohol(s) and alcohol substitutes, thinners, cleaners, and any other VOC-containing materials used that includes at a minimum:

- a. **Material Name:** Record the name/code/manufacturer and the appropriate material type category of inks, coatings, adhesives, fountain-solution alcohol(s) and alcohol substitutes, thinners, cleaning solutions, and any other VOC-containing materials used in the graphic arts processes; and
- b. **VOC Content:** The VOC content of each material listed as pounds of VOC per gallon or grams of VOC per liter; and
- c. **Product Data Sheet:** Specific mixing instructions and the VOC content as applied for products requiring dilution.
- d. **VOC Vapor Pressure:** For each cleaning solution, list the VOC composite vapor pressure (VP) at 20 °C (68 °F) by providing one of the following:
- (1) A current manufacturer's technical data sheet listing vapor pressure; or
- (2) A current manufacturer's safety data sheet (MSDS) listing vapor pressure;
or
- (3) Actual vapor pressure test results.

502.2 Material Usage Records for Graphic Arts Materials and Cleaning Solutions: The owner or operator shall update records showing the type and amount consumed of each graphic-arts ink, varnish, coating, adhesive, fountain solution, blanket wash, and all other cleaning solutions from all graphic arts and related coating operations prior to any control according to one of the following schedules:

- a. **Any Graphic Arts Operation Whose Total VOC Emissions From All Graphic Arts and Related Coating Operations Prior to Control are at Least 25 Tons Per Calendar Year or 4,200 Pounds Per Month:** The owner or operator shall maintain material usage records:
 - (1) Daily, if noncompliant materials are used in conjunction with an emissions control system; or
 - (2) Monthly, if the facility uses materials complying with the limits in Sections 302, 303, 304, or 305 of this rule, and each material served by a control device is identified as such.
- b. **Any Graphic Arts Operation Whose Total VOC Emissions From All Graphic Arts and Related Coating Operations Prior to Control are Less Than 25 Tons Per Calendar Year or 4,200 Pounds Per Month:** The owner or operator shall maintain material usage records monthly.

502.3 Fountain Solutions:

a. Alcohol-Containing Fountain Solutions:

- (1) **Daily:** An owner or operator shall record the temperature of the refrigerated alcohol solution.
- (2) **Weekly:** An owner or operator shall:
 - (a) Record the percentage of VOC for each different batch of fountain solution containing alcohol; and
 - (b) Maintain a record of the names and the most current mixing ratio for each different batch of all alcohol, alcohol-substitutes, and water used in making each fountain solution for that source.

b. Fountain Solutions Containing Alcohol Substitutes:

- (1) **Monthly:** An owner or operator shall:
 - (a) Record the mixing ratio of all alcohol-substitutes to water, for each fountain solution source on a press which never uses alcohol; and
 - (b) Maintain a current list of the names of all fountain solutions used that contain alcohol-substitutes.

502.4 ECS Recordkeeping Requirements: The owner or operator of the facility shall document the installation, maintenance, and calibration of ECS monitoring devices described in an O&M Plan in the following manner:

- a. **Initial Installation:** Make a permanent record of the date of installation of the ECS.
- b. **Daily:** Make a permanent record of the operating parameters of the key systems as required by the O&M Plan. If the ECS was not operational due to equipment malfunction or not being used at any time during the day, record this fact in the permanent record; and
- c. Within 24 hours of a completed scheduled routine maintenance, make a permanent record of the maintenance actions taken for each day or period in which the O&M Plan requires that maintenance be done; or
- d. Enter an explanation for scheduled maintenance that is not performed during the period designated for it in the O&M Plan.

502.5 Facilities Claiming an Exemption: The owner or operator claiming an exemption under Section 103 of this rule shall document the quantity of VOC materials used and keep sufficient records of the basis of such calculations to justify the exemption status.

503 COMPLIANCE DETERMINATION – TEST METHODS: An exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation of this rule. The EPA test methods, ASTM International (ASTM) standards and other documents as they exist in the Code of Federal Regulations (CFR) as listed below, are adopted and incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. These documents are available Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, AZ 85004; or by calling (602) 506-0169 for information. ASTM standards are also available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428, or from its website at www.astm.org.

503.1 VOC Content of Materials:

- a. The VOC content of graphic arts materials regulated by Sections 302, 303, 304 or 305 of this rule shall be determined using one of the following:
 - (1) EPA Reference Method 24 – Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings, 40 CFR 60, Appendix A–7; or
 - (2) EPA Reference Method 24A – Determination of Volatile Matter Content and Density of Publication Rotogravure Inks and Related Publication Rotogravure Coatings, 40 CFR 60, Appendix A–7; or

- (3) A material safety data sheet (MSDS) or product data sheet showing the material name and VOC content as applied.
- b. Calculation of the VOC content of fountain solutions shall place the entire volume of the sample in the denominator, e.g., including water, alcohol, non-precursors, and all other solutes, such that the entire volume of the sample is included in the calculations.
- c. Any hydrometer used for the purpose of this section shall be accurate within ± 2 percent of the meter's full scale or ± 0.5 percent absolute (such as for meter readings given in percent) and be calibrated using one of the following methods:
 - (1) ASTM E100 – 10 Standard Specification for ASTM Hydrometers.
 - (2) ASTM E126 – 05a Standard Test Method for Inspection, Calibration, and Verification of ASTM Hydrometers.
 - (3) A standard solution for the type of alcohol used in the fountain solution. The department is defining a standard solution as any solution that has a precisely known concentration.

503.2 Determining the Temperature of a Refrigerated Fountain Solution: The temperature of a refrigerated fountain solution shall be determined by the use of a temperature monitoring device. Each temperature monitoring device used for the purpose of this section shall be accurate to ± 0.5 °F and calibrated by one of the following methods:

- a. ASTM standards (ASTM E1-07 Standard Specification for ASTM Liquid-in-Glass Thermometers); or
- b. National Institute of Standards and Technology (NIST) traceable calibration certificate; or
- c. Manufacturer's recommended method of calibration.

503.3 Emission Testing:

- a. Capture and control efficiency of an emissions control device shall be determined according to:
 - (1) "Guidelines for Determining Capture Efficiency", January 9, 1995, Candace Sorrell, Source Characterization Group A, Office of Air Quality Planning and Standards, US EPA.

- (2) EPA Reference Method 204 – Criteria for and Verification of a Permanent or Temporary Total Enclosure, 40 CFR 51, Appendix M; or applicable Subparts 204A, 204B, 204C or 204D.
- (3) EPA Reference Method 18 – Measurement of Gaseous Organic Compound Emissions by Gas Chromatography, 40 CFR 60, Appendix A–6.
- (4) EPA Reference Method 25 – Determination of Total Gaseous Non-methane Organic Emissions as Carbon, 40 CFR 60, Appendix A–7; or applicable Subparts 25A or 25B.

503.4 Vapor Pressure: The total composite partial vapor pressure of all VOCs in a solution shall be determined by one of the following methods:

- a. ASTM D2879-97(2007) Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope; or
- b. Calculations using certified data from a laboratory or manufacturer revealing the exact formulation; or
- c. A Material Safety Data Sheet (MSDS) or product data sheet showing the material name and VOC vapor pressure; or
- d. Calculating VOC composite partial vapor pressure as follows:

$$PP_c = \frac{\sum_{i=1}^n \frac{(W_i)(VP_i)}{MW_i}}{\frac{W_w}{MW_w} + \sum_{c=1}^n \frac{W_c}{MW_c} + \sum_{i=1}^n \frac{W_i}{MW_i}}$$

Where:

- W_i = Weight of the “i”th VOC compound, in grams
- W_w = Weight of water, in grams
- W_c = Weight of exempt compound, in grams
- MW_i = Molecular weight of the “i”th VOC compound, in g/g-mol
- MW_w = Molecular weight of water, in g/g-mol
- MW_c = Molecular weight of exempt compound, in g/g-mol
- PP_c = VOC composite partial vapor pressure at 20 °C, in mm Hg
- VP_i = Vapor pressure of the “i”th VOC compound at 20 °C, in mm Hg

2-26-97

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 338
SEMICONDUCTOR MANUFACTURING**

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 338
SEMICONDUCTOR MANUFACTURING**

SECTION 100 - GENERAL

101 PURPOSE: To limit the emission of volatile organic compounds from semiconductor manufacturing.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply:

- 201 APPROVED EMISSION CONTROL SYSTEM** - A system for reducing emissions of organic compounds, consisting of both emissions collection and processing devices which are approved in writing by the Control Officer and are designed and operated in accordance with good engineering practice.
- 202 MASKING** - Applying a photoresist maskant material or overlaying a stencil to apply, impress, transfer, or otherwise effect a pattern on or into another substance.
- 203 NEGATIVE PHOTORESIST OPERATION** - A process for the application of negative photoresist masking solution/material on a wafer or other substrate which hardens when exposed to light or other process-radiation. This includes preparation, soft bake, hard bake, developing, stripping and edge bead removal, as well as any intermediate operations.

- 204 NON-PRECURSOR ORGANIC COMPOUND** - Any of the following organic compounds which have been designated by the EPA as having negligible photochemical reactivity: methane; ethane; methylene chloride (dichloromethane); 1,1,1-trichloroethane; trichlorofluoromethane (CFC-11); dichlorodifluoromethane (CFC-12); chlorodifluoromethane (CFC-22); 1,1,2-trichlorotrifluoroethane (CFC-113); 1,2-dichlorotetrafluoroethane (CFC-114); chloropentafluoroethane (CFC-115); trifluoromethane (FC-23); 2,2-dichloro-1,1,1-trifluoroethane (HCFC-123); 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124); 1,1-dichloro-1-fluoroethane (HCFC-141b); 1-chloro-1,1-difluoroethane (HCFC-142b); pentafluoroethane (HFC-125); 1,1,2,2-tetrafluoroethane (HFC-134); 1,1,1,2-tetrafluoroethane (HFC-134a); 1,1,1-trifluoroethane (HFC-143a); 1,1-difluoroethane (HFC-152a); all completely fluorinated, completely saturated: alkanes, ethers and tertiary amines.
- 205 PHOTORESIST MASKANT, MASKANT, OR PHOTORESIST** - A coating applied directly to a component to protect surface areas when chemical milling, etching, or other chemical surface operations are performed on the component.
- 206 POSITIVE PHOTORESIST OPERATION** - A process for the application of positive photoresist masking solution/material on a wafer or other substrate which softens when exposed to light or other process-radiation. This includes preparation, soft bake, hard bake, developing, stripping and edge bead removal, as well as any operations intermediate to such processes. Positive photoresist equipment cleaning operations are not included.
- 207 SEMICONDUCTOR MANUFACTURE** - Any process or operation performed to produce semiconductor devices or related solid state devices, including but not limited to diodes, zeners, stacks, rectifiers, integrated microcircuits, transistors, solar cells, light-sensing devices, and light-emitting devices.
- 208 SOLVENT** - Any material which contains VOC and/or any non-precursor organic compound and which can dissolve or hold in suspension another substance. This includes but is not limited to developers and stripping agents.
- 209 STRIPPING** - The removal of spent photoresist maskant from the product after etching, or the removal of oxide or other stencil agent from the product after diffusion.
- 210 VOLATILE ORGANIC COMPOUND (VOC)** - Any organic compound except the non-precursor organic compounds.

SECTION 300 - STANDARDS

- 301 NEGATIVE PHOTORESIST OPERATIONS:** No person shall allow negative photoresist operations at a semiconductor manufacturing facility annually emitting more than 25 tons (22.7 Mg) of VOC from all negative photoresist operations combined unless such VOC-containing vapors are vented to an Approved Emission Control System which reduces their total weight by at least 80 percent (capture with processing). The emission reduction will be determined for the sum of all VOC emissions from negative photoresist operations before any of these emissions enter an emissions control device.
- 302 POSITIVE PHOTORESIST OPERATIONS:** No person shall allow positive photoresist operations at a semiconductor manufacturing facility annually emitting more than 50 tons (45.4 Mg) of VOC from all non-exempt positive photoresist operations combined, unless VOC-containing vapors are vented to an Approved Emission Control System which reduces the weight of VOC emissions from all such non-exempt operations combined by at least 80 percent (capture with processing). The emission reduction will be determined for the sum of all non-exempt VOC emissions from positive photoresist operations before any of these emissions enter an emissions control device. Non-exempt refers to VOC emissions that are not specifically exempted by Section 307 of this rule.
- 303 OPERATION AND MAINTENANCE PLAN:** The owners or operators of an Emission Control System required by this rule shall provide the Control Officer with an Operation and Maintenance (O&M) Plan. This plan shall specify key system operating parameters, such as temperatures, pressures and/or flow rates, necessary to determine compliance with this rule and describe in detail procedures to maintain the Emission Control System. The Control Officer's written approval of this plan shall be required for compliance with this rule to be achieved.
- 304 MAINTENANCE:** All active process equipment in which VOC-containing materials are used shall be operated and maintained in proper working order.
- 305 STORAGE AND DISPOSAL OF VOC:** All storage of VOC-containing materials subject to evaporation, including the storage of waste solvent and waste solvent residues, shall at all times be in closed containers which are legibly labelled with their contents. Records of disposal/recovery of VOC-containing materials shall be kept in accordance with hazardous waste disposal statutes.

306 CLEANING AND CLEANUP: A cleaning or cleanup operation using solvents over 10 percent VOC by weight must conform at a minimum to the applicable provisions of Rule 331 if such operation is not served by an external control device which reduces the overall weight of VOC emissions from such an operation by at least 80 percent (capture with processing). This applies to the cleaning of parts and products as well as to the cleaning of those materials and assemblies that are intermediate to them. This also applies to the cleaning of production equipment, to general cleanup, and to stripping operations using solvents over 10 percent VOC by weight.

307 EXEMPTIONS:

307.1 Liquids in positive photoresist processes which contain less than 10 percent VOC by weight and never exceed a temperature of 104°F (40°C) are allowed the following exemptions. VOC emissions from such liquids:

- a. Are not included in the calculations determining if positive photoresist operations are subject to the control device provisions of Section 302;
- b. Are exempt from any requirement that they be controlled by an Approved Emission Control System;
- c. Are not included in determining the efficiency of a required Approved Emission Control System unless (optionally) captured by such a System.

307.2 Quality Control Operations: Except for this rule's Sections 305, and 306, and subsections 502.1 and 502.2, this rule shall not apply to those operations within a semiconductor manufacturing facility which are used exclusively for chemical or physical analysis, or determination of product quality and commercial acceptance. Such operations may be exempted until the sum of daily emissions from all exempted operations reaches but does not exceed 40 pounds (18.1 kg). This exemption shall not apply to a particular operation if:

- a. The operation is an integral part of the production process; or
- b. The exemption is denied in writing by the Control Officer.

SECTION 400 - ADMINISTRATIVE

- 401 COMPLIANCE SCHEDULE:** By February 14, 1993, any person subject to Section 301 or 302 who does not comply with all provisions of Section 301 or 302 shall submit for the Control Officer's approval an emission control plan describing the method to be used to achieve full compliance. Facilities emitting over 100 tons (90.7 Mg) per year of VOC emissions must achieve compliance by November 15, 1993. Other affected facilities emitting less than 100 tons (90.7 Mg) per year of VOC must achieve compliance by May 15, 1994. The plan shall specify dates for completing increments of progress, such as the contractual arrival date of new control equipment. The Control Officer may require a person submitting such emission control plan to submit subsequent reports on progress in achieving compliance.
- 402 COMPLIANCE WITH RULE 331:** Any operation or facility which is exempt from all or a portion of this rule shall comply with the applicable provisions of Rule 331 as well as any other applicable rules of these Rules and Regulations.

SECTION 500 - MONITORING AND RECORDS

- 501 PROVIDING AND MAINTAINING MONITORING DEVICES:** Any person operating an Approved Emission Control System pursuant to this rule shall provide, properly install and maintain in calibration, in good working order and in operation, devices described in an approved O&M Plan for indicating temperatures, pressures, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly and is properly maintained.
- 502 RECORDKEEPING AND REPORTING:** Any person subject to this rule shall comply with the following requirements. Records shall be retained for five years and shall be made available to the Control Officer upon request.
- 502.1 Current List:** Maintain a current list of coatings, adhesives, maskants, solvents, and any other VOC-containing materials. State the VOC content of each in pounds per gallon or grams per liter.
- 502.2 Usage Records:** Maintain monthly records showing the type and amount of all VOC-containing material in photoresist operations. This includes, but is not limited to strippers, maskants, solvent materials and cleanup materials
- 502.3 Operation and Maintenance:** Maintain a continuous record of the times an Emission Control Device is used to comply with this rule. Maintain daily records of the O&M Plan's key system operating-parameters. Maintain records of all maintenance performed according to the O&M Plan.

503 COMPLIANCE DETERMINATION - TEST METHODS: When more than one test method is permitted for a determination, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation of this rule.

503.1 Sample Analysis: VOC content of materials shall be determined using the applicable EPA Reference Method 24 or 24A (40 CFR, Part 60, Appendix A).

503.2 Emission Testing: Control efficiency of an emissions control device shall be determined according to EPA Reference Method 25 or an applicable submethod of Method 25 (Title 40, CFR Part 60, Appendix A).

503.3 Capture Efficiency: Capture efficiency shall be determined by mass balance in combination with ventilation/draft rate determinations "Using a Temporary Total Enclosure For Capture Efficiency Testing," EPA-450/4-91-020.

503.4 Ventilation/Draft Rates: Ventilation/draft rates shall be determined by EPA Methods 2, 2A, 2C, or 2D.

8/16/94

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 341 METAL CASTING

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 341
METAL CASTING**

SECTION 100 - GENERAL

- 101 PURPOSE:** To limit the amount of volatile organic compounds (VOCs) emitted by organic binder materials used in metal investment-casting molds made of sand and/or other finely divided refractory material.
- 102 APPLICABILITY:** This rule applies to any metal investment-casting facility with an aggregate emission to atmosphere after December 31, 1989, of 600 pounds (272 kg) or more of VOC in any day or 100 tons (90.7 Mg) or more of VOC in any year from metal investment-casting operations, including cleaning processes.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply:

- 201 APPROVED EMISSION CONTROL SYSTEM -** A system for reducing emissions of organic compounds, consisting of both collection and control devices which are approved in writing by the Control Officer and are designed and operated in accordance with good engineering practice.
- 202 BINDER -** Any material which is used to bind casting sand or other refractory particles into a cohesive mold or part of a mold.
- 203 BINDER-VOC EMISSIONS -** VOC emissions from binder operations which include but are not limited to VOC that is emitted during binder formulation and mixing at the casting facility, cold-box gassing, binder setting, mold storage, metal pouring, mold cooling, and/or binder/sand recycling. This also includes VOC released through thermal vaporization, combustion, and pyrolysis of binder material.
- 204 DAY -** A period of 24 consecutive hours beginning at midnight.

- 205 **INVESTMENT CASTING** - A type of metal casting in which a mold is built up around a fusible model by alternately dipping the model into adhesive binder and then causing fluidized refractory particles to adhere to the binder to form a cemented shell. After several such cycles, the model is melted and poured out of the shell-mold. After curing at high temperature and then receiving molten metal, the mold must be broken away to recover the metal casting.
- 206 **MASKANT** - A product used to cover or protect a surface, so as to shield the surface covered from participating in a process such as chemical milling, anodizing, coating, bonding, plating, etching, etc.
- 207 **NON-PRECURSOR ORGANIC COMPOUND** - Any of the following organic compounds which have been designated by the EPA as having negligible photochemical reactivity: methane; ethane; methylene chloride (dichloromethane); 1,1,1-trichloroethane; trichlorofluoromethane (CFC-11); dichlorodifluoromethane (CFC-12); chlorodifluoromethane (CFC-22); 1,1,2-trichlorotrifluoroethane (CFC-113); 1,2-dichlorotetrafluoroethane (CFC-114); chloropentafluoroethane (CFC-115); trifluoromethane (FC-23); 2,2-dichloro-1,1,1-trifluoroethane (HCFC-123); 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124); 1,1-dichloro-1-fluoroethane (HCFC-141b); 1-chloro-1,1-difluoroethane (HCFC-142b); pentafluoroethane (HFC-125); 1,1,2,2-tetrafluoroethane (HFC-134); 1,1,1,2-tetrafluoroethane (HFC-134a); 1,1,1-trifluoroethane (HFC-143a); 1,1-difluoroethane (HFC-152a); all completely fluorinated, completely saturated: alkanes, ethers and tertiary amines; sulfur-containing perfluorocarbons with no unsaturations, no hydrogen, and with sulfur bonds only to carbon and fluorine.
- 208 **VOLATILE ORGANIC COMPOUND (VOC)** - Any organic compound except non-precursor organic compounds.

SECTION 300 - STANDARDS

- 301 **CONTROLS REQUIRED:** No person shall operate a metal investment-casting facility subject to this rule unless binder-VOC emissions are controlled by:
- 301.1 An Approved Emission Control System which through capture and control reduces the total, facility-wide binder-VOC emissions by at least 81 percent as determined by the test methods referred to in Subsections 505.3 and 505.4, whenever there are binder-VOC emissions; or,
- 301.2 A limit of 420 grams VOC per liter (3.5 lb/gal) of binder, less water and non-precursor organic compounds, as determined by test methods referred to in Subsections 505.1 and 505.2; or,

301.3 A daily-weighted average not exceeding 420 grams VOC per liter (3.5 lb/gal) of binder, less water and non-precursor organic compounds, using calculations specified in Subsection 505.6.

302 OPERATION AND MAINTENANCE (O&M) PLAN:

302.1 The owner or operator of an Approved Emission Control System used to meet the requirements of Section 301.1 of this rule shall provide the Control Officer with an Operation and Maintenance (O&M) Plan. This O&M Plan shall specify:

- a. Key system operating parameters, such as temperatures, pressures and/or flow rates, necessary to determine compliance with this rule;
- b. Detailed procedures and their frequencies needed to maintain the Approved Emission Control System.

302.2 An Approved Emission Control System must have the O&M Plan approved in writing by the Control Officer before the system begins operation.

302.3 Time Frames for Changes:

- a. Changes involving reduction in the frequency or extent of Control Officer approved O&M procedures must have the written consent of the Control Officer prior to being implemented.
- b. Other Changes: An updated O&M Plan must be submitted to the Control Officer for review within 10 days of any changes not involving reduction in frequency or extent of an approved O&M procedure. Within 5 working days of a written disapproval of such changes, either the original O&M Plan shall be reinstated or an alternative, negotiated with the affected facility and approved in writing by the Control Officer, shall be instituted.

303 MAINTENANCE: Any person subject to this rule shall operate and maintain in proper working order all process equipment in which VOC-containing materials are used or stored.

304 STORAGE AND DISPOSAL OF VOC: Any person subject to this rule shall store all VOC-emitting materials, including but not limited to waste binders, waste solvents and their residues, in closed containers which are legibly labelled with their contents. Such person shall keep records of disposal/recovery of VOC-containing materials in accordance with applicable federal, state, and local hazardous waste disposal statutes and rules.

- 305 INVESTMENT CASTING EXEMPTION:** An owner or operator of an investment casting facility, subject to this rule, using the daily-weighted average, is not required to meet the daily standard in Subsection 301.3 on a day when total facility-wide binder-VOC emission is less than 45 kilograms (100 lb) or when total use of all binders having individual as-applied formulations exceeding 400 grams VOC per liter of solids is less than 83 liters (22 gal). Each day this exemption is claimed, all computations and records needed to verify compliance with the above limits shall be entered in the daily weighted-average computation log and a notation made that a Section 305 exemption applies.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

- 401 COMPLIANCE SCHEDULE:** By September 1, 1994, any person subject to this rule must comply with all of its provisions.

SECTION 500 - MONITORING AND RECORDS

- 501 PROVIDING AND MAINTAINING MONITORING DEVICES:** Any person operating an Approved Emission Control System pursuant to this rule shall provide, properly install and maintain in calibration, in good working order and in operation, devices described in an approved O&M Plan for indicating temperatures, pressures, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly and is properly maintained. On each day of operation of an Approved Emission Control System, a continuous, permanent record shall be maintained of the times such system was used to comply with this rule.
- 502 RECORDKEEPING AND REPORTING:** Any person subject to this rule shall keep the following records and lists in a consistent and complete manner and shall make them available to the Control Officer without delay during normal business hours.
- 502.1 Current List:** A current list of all VOC-containing materials as received by the facility such as binders and/or binder components, maskants, coatings, cleaning solvents, lubricants and any other VOC-containing substances, including the VOC content of each in pounds per gallon or grams per liter, shall be maintained.
- 502.2 Materials:** Records shall be maintained which show the type, amount used, and content, expressed in either pounds per gallon or grams per liter, of each VOC-containing material. Records shall be updated according to the following schedule depending on the amounts used or mass of VOC contained in those materials. Materials differing only in brand or

manufacturer but having the same composition and formula shall be totalled as a single material.

- a. Daily update: More than 3 gallons or 15 lb (7.2 kg) in any day or more than 100 gallons or 500 lb (227 kg) in any year.
- b. Monthly update: 15 gallons or 75 lb (34 kg) through 100 gallons or 500 lb (7.2 kg) in any year. Facilities which only use binders containing no more than 420 grams VOC per liter (3.5 lb/gal), less water and non-precursor organic compounds, shall update binder records each month.
- c. Yearly update: Less than 15 gallons or 75 lb (34 kg) in any year.

502.3 Operation and Maintenance: On each day that an Approved Emission Control System is used to comply with this rule, a record shall be made of the operating parameters of the key systems described in the O&M Plan. For each day or period in which the O&M Plan requires that maintenance be performed, a record shall be made of the maintenance actions taken, within 24 hours of maintenance completion. An explanation shall be entered for scheduled maintenance that is not performed during the period designated in the O&M Plan.

503 AVERAGING: For investment casting facilities using daily-weighted averaging to comply with Section 301.3, the following practices shall be observed:

503.1 Emission Computation Schedule: Each workday's VOC emissions and the daily-weighted average expressed in grams of VOC per liter of binder (or lb/gal) shall be computed and recorded no later than 12 hours after the end of that workday. Binder used in any day shall have all its emitted VOC ascribed to that day even if evaporation is not complete until a following day. At the end of a day, the numerical quantity of any leftover binder which will not be used again shall be added to the sum of the total binder used of that same formulation used on that day, unless such leftover is stored in sealed container(s), and a determination of VOC content is made by Method 24 and recorded in the log, prior to removal from the site.

503.2 Bulk Accounting: A separate account shall be kept and updated as bulk binder ingredients arrive and as such ingredients are used up. This account shall include deliveries of VOC-containing diluents such as alcohol and other make-up solvents. Purchase order and inventory records can suffice for this if they are at all times kept complete, in a form usable for such accounting, and available to the Control Officer.

- 503.3 Averaging Schedule:** A list shall be kept current containing the name/designation of each binder formulation and the amount of each constituent in each formulation, and including the mass of VOC per unit volume of binder, less water and non-precursor organic compounds. The amounts of each binder formulation used, including make-up formulations, shall be recorded at the end of each mold-making shift. The daily-weighted average expressed in grams VOC per liter of binder (or lb/gal), less water and non-precursor organic compounds, shall be computed and recorded no later than 12 hours after the end of each workday.
- 504 RECORDS RETENTION:** Any person subject to this rule shall retain records and information required by this rule for at least three years. Such person shall retain copies of reports and supporting documentation required by the Control Officer for at least three years after the date of submittal.
- 505 COMPLIANCE DETERMINATION - TEST METHODS:** When more than one test method is permitted for a determination, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation of this rule.
- 505.1** Quantification of VOC and solids content of binders, required in order to comply with Subsections 301.2 and 301.3, shall be determined using the EPA Reference Method 24 (40 CFR, Part 60, Appendix A). The owner or operator shall sample each binder formulation at least once per year and record the VOC content.
- 505.2** Calculations pursuant to Subsections 301.2 and 301.3, of the VOC content of binders containing water and/or non-precursor organic compounds shall be performed in accordance with ASTM Designation: D3960-93, "Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings."
- 505.3** Control efficiency of an emission control device required by Section 301.1 shall be determined according to EPA Reference Method 25 or an applicable submethod of Method 25 (Title 40, CFR Part 60, Appendix A).
- 505.4** Capture efficiency of an emission control device required by Section 301.1 shall be determined by mass balance in combination with ventilation/draft rate determinations referenced in Subsection 505.5, or by a Control Officer approved method set forth in the EPA document, "Using a Temporary Total Enclosure For Capture Efficiency Testing," EPA-450/4-91-020.

505.5 Ventilation/draft rates of an emission control device required by Section 301.1 shall be determined by EPA Reference Methods 2, 2A, 2C, or 2D (40 CFR Part 60, Appendix A).

505.6 **Daily-Weighted Average:** The daily-weighted average VOC content of all the binders used in a day facility-wide, a quantification required in order to comply with Subsection 301.3, shall be calculated using the following equation and be expressed in units of mass of VOC per unit volume of binder excluding any water and any non-precursor organic compounds (non-precursors).

$$\text{VOC}_w = \frac{V_1 C_1 + V_2 C_2 + \dots + V_n C_n + M_{va}}{V_1 + V_2 + \dots + V_n + V_{va} + V_{sa}}$$

where:

VOC_w = The daily-weighted average VOC content of all "n" binder formulations ("a" through "n") used during a day throughout the facility expressed in grams of VOC per liter of binder (or lb/gal) after water and non-precursors are excluded.

C_1 = The VOC content of the first formulation used on a production day in grams per liter of binder (lb/gal), excluding water and non-precursors.

C_2 = The VOC content of the second binder-formulation used on a production day, in grams per liter of binder (or lb/gal), excluding water and non-precursors.

C_n = The VOC content of the very last binder formulation used on a production day when a total of "n" formulations were used, and the only formulation remaining to be accounted for. It is expressed in grams VOC per liter of binder-formulation "n" (or lb/gal), excluding water and non-precursors.

M_{va} = The total mass of VOC added to any previously formulated binder used during the course of this day expressed in grams (or lbs). This includes the VOC portion of added materials which also contain non-VOC components.

V_1 = The total volume used throughout the day of the first binder formulation used that day, expressed in liters (or gal), excluding the volume of any water and the volume of any non-precursors.

V_2 = The total volume used throughout the day of the second binder formulation used that day, in liters (or gal), excluding the volume of water and non-precursors.

V_n = The total volume used throughout the day of the very last binder formulation used that day, when a total of "n" formulations were used. It is expressed in liters (or gal) of formulation "n" not including the volume of any water and non-precursors.

V_{va} = The total volume of VOC in liters (or gal) added to any and all previously formulated binders during the course of this day for make-up, viscosity reducing, or other purpose(s). If such VOC is used in a mixture containing non-VOC components, the volume of the non-VOC portion is excluded when making calculations.

V_{sa} = The total volume of solids in liters (or gal) added during a day to any already formulated binders used during the day such solids are added. Such volume shall be equivalent to the volume of solid material remaining after any volatile material has been removed by the drying oven under the conditions specified in a Method 24 test, as referenced in Subsection 505.1.

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AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 342
COATING WOOD FURNITURE AND FIXTURES**

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 342
COATING WOOD FURNITURE AND FIXTURES**

SECTION 100 – GENERAL

- 101 PURPOSE:** To limit emissions of volatile organic compounds (VOC) from the surface preparation and coating of wood furniture and fixtures.
- 102 APPLICABILITY:** The provisions of this rule apply to any facility in Maricopa County applying finishing material to furniture or fixtures made of wood or wood derived material. Simplified provisions of Appendix B in this rule may be used by facilities which agree to a permit limit of less than 10 tons (9.1 megagrams (Mg)) of VOC emissions per year. For sources emitting less than 2 tons (1.8 Mg) of VOC per year, refer to Section 103.2(d) of this rule. This rule does not apply to the coating of any millwork included under SIC code #2431 (Millwork).

**Table 342-1
APPLICABLE STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES***

Standard Industrial Classification (SIC) code	SIC Title
2434	Wood Kitchen Cabinets
2511	Wood Household Furniture, Except Upholstered
2512	Wood Household Furniture, Upholstered
2517	Wood Television, Radio, Phonograph, and Sewing Machine Cabinets
2519	Household Furniture, Not Elsewhere Classified
2521	Wood Office Furniture
2531	Public Building and Related Furniture
2541	Wood Office and Store Fixtures, Partitions, Shelving, and Lockers
2599	Furniture and Fixtures, Not Elsewhere Classified
2515	Mattresses, Foundations, and Convertible Beds

*Per the United States Department of Labor Occupational Safety and Health Administration. Web access at <https://osha.gov/index.html>

103 EXEMPTIONS:

103.1 Total Exemptions:

- a. This rule does not apply to the coating of any millwork included under SIC code 2431 Millwork.
- b. The following materials are exempt from this rule:
 - (1) Adhesives.

- (2) Architectural coatings.
- (3) Printing ink.
- (4) Coatings that are not applied on or over a wood product substrate.
- c. Sources subject to Rule 342 are exempt from the following Maricopa County Air Pollution Control Regulations:
 - (1) Rule 330 (Volatile Organic Compounds)
 - (2) Rule 336 (Surface Coating Operations)

103.2 Partial Exemptions:

- a. **Aerosol Spray Can Coating:** Coatings in aerosol spray cans not exceeding 22 fl. oz. (0.66 liter) capacity and used exclusively for touch-up and/or repairs are subject to only the reporting requirements in Section 500 of this rule.
- b. The following are exempt from the VOC limits in Section 301.1 of this rule, but shall comply with all other provisions of this rule:
 - (1) The use of the following coating types when the annual total use of all such types together is less than 250 gallons (948 liters):
 - (a) Prepackaged aerosol spray cans which are not used for touch-up or repair;
 - (b) Metal leaf finishes; and
 - (c) Faux finishes.
 - (2) Refinishing, Replacement, and Custom Replica Furniture Operations:
 - (a) Any refinishing operation necessary for preservation;
 - (b) To return the furniture or fixture to original condition;
 - (c) To replace missing furniture to produce a matching set; or
 - (d) To produce custom replica furniture.
 - (3) Stains, washcoats, glazes, toners, inks, and other coatings not specified in Section 301.1 of this rule.
- c. The coating for a single resin-layer finish which does not exceed a VOC limit of 3 lb VOC/lb solids (3 kg VOC/kg solids) for completed finishes up to 3 dry mils thickness or does not exceed 2.3 lb VOC/lb solids (2.3 kg VOC/kg solids) for finishes over 3 dry mils is exempt from the VOC limits of Section 301.1 of this rule if all of the following conditions are met:
 - (1) The containers are clearly marked "FOR USE IN SINGLE RESIN LAYER FINISH";
 - (2) Facility records clearly identify this material: "DOES NOT MEET THE VOC LIMITS OF SECTION 301, RULE 342. FOR USE ONLY IN SINGLE RESIN-LAYER FINISHES"; and

- (3) The booth used to apply a single resin-layer finish above 2.3lb VOC/lb solids (2.3 kg VOC/kg solids) is dedicated to that operation only, and is clearly labeled "FOR SINGLE RESIN-LAYER FINISHES ONLY".
- d. **Small Source Status:** A furniture coating facility which at any time demonstrates that it currently meets all the requirements in Sections 103.2(d)(1) of this rule is exempt from all provisions of this rule except for the sections listed in Section 103.2(d)(2) of this rule.
- (1) **Small Source Status Requirements:**
- (a) Facility records demonstrate that no more than a total of 55 gallons (209 liters) of VOC-containing wood-product coatings and VOC-containing solvent are used in any consecutive 12-month period; and
 - (b) The monthly total usage of VOC-containing wood-product coatings and VOC-containing solvent divided by that month's number of working days of coating application does not exceed 3.0 gallons (11.4 liters) per working day; and
 - (c) The facility emits less than 4000 pounds (1814 kg) VOC, facility-wide per year from all wood-product coating operations, all VOC-containing diluent added to coatings, all VOC-containing solvent cleaning and stripping, and VOC-containing solvent used for coating equipment cleanup.
- (2) Small Sources shall comply with all of the following sections of Rule 342:
- (a) Section 303: OPERATION AND MAINTENANCE;
 - (b) Section 304: LEAK DETECTION AND REPAIR;
 - (c) Section 306: HANDLING AND DISPOSAL OF VOC-CONTAINING MATERIAL;
 - (d) Section 400: ADMINISTRATIVE REQUIREMENTS; and
 - (e) Section 500: MONITORING AND RECORDS.
- e. **Using Conventional and other Restricted Use Guns:** In addition to the uses of restricted-use guns allowed under Sections 302.2(a), (b), and (c) of this rule, an owner or operator may use a conventional air-atomized or other restricted use gun to apply coatings exceeding 1 lb VOC/1 lb solids (1kg VOC/1 kg solids) if both of the following conditions are met:
- (1) The volume of such coating applied in this way is less than five percent (5%) of the total semi-annual volume of coating applied at the facility; and
 - (2) A log is kept pursuant to Section 501.2(c) of this rule of the amount of coating used by each such gun. This shall be done daily or each time coating is added to the gun's coating reservoir; and semi-annual calculation shall be made pursuant to Section 501.2 of this rule.

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of

these rules. In the event of any inconsistency between any of the Maricopa County Air Pollution Control Rules, the definitions in this rule take precedence.

- 201 ADHESIVE:** Any substance, usually having a fluid phase during application, used principally to bond two or more surfaces into close proximity with one another.
- 202 AEROSOL SPRAY COATING:** A coating which is sold in a hand-held, pressurized, non-refillable container, of less than 22 fluid ounces (0.66 liter) capacity, and which is expelled from the container in a finely divided form when a valve on the container is depressed.
- 203 AIR-ATOMIZED SPRAY (GUN):** Equipment used to apply coatings in which the chief means of atomizing the coating is via pressurized air which also mixes into the cloud of coating particles after expulsion from a spray nozzle.
- 204 ARCHITECTURAL COATING:** Any coating applied to stationary structures and their appurtenances, to mobile homes, to pavements or to curbs.
- 205 BASECOAT:** A coat of colored material, usually opaque, that is applied before graining inks, glazing coats, or other high-hiding finishing materials. A basecoated surface usually receives a topcoat.
- 206 COATING:** Any liquid, fluid, or mastic composition which is converted to a solid (or semi-solid) protective, decorative, or adherent film or deposit after application to a substrate as a thin layer.
- 207 CONVENTIONAL AIR-ATOMIZED SPRAY:** Any spray coating method in which the coating is atomized principally by mixing it with compressed air at an air pressure greater than 10 pounds per square inch (gauge) at the point of atomization, and which is not used with an electrostatic transfer system. Airless and air-assisted airless spray technologies are not conventional air-atomized spray because the principal means of atomizing the coating is via hydraulic pressure and not by mixing the coating with compressed air.
- 208 CUSTOM REPLICA FURNITURE:** Furniture individually produced or repaired after an order has been received from a client specifying a particular style and period, using both the style and the methods of construction, including materials, joinery, and finishes, which are authentic to the period.
- 209 DAY:** A period of 24 consecutive hours beginning at midnight.
- 210 DILUENT:** For the purpose of this rule, any fluid in or added to a coating such as thinner, retarder, reducer, solvent, or drying accelerator which solubilizes, adjusts concentration, viscosity, flow, or drying rates and which evaporates as the coating film solidifies and cures.
- 211 ELECTROSTATIC APPLICATION:** A method of applying coating by electrically charging coating droplets or particles causing their deposition onto a substrate by electrostatic attraction.
- 212 EMISSION CONTROL SYSTEM (ECS):** A system for reducing emissions of organic compounds, consisting of both collection and control devices which are approved in writing

by the Control Officer and are designed and operated in accordance with good engineering practice.

- 213 FACILITY:** For the purpose of this rule, all the pollutant-emitting activities located on one or more contiguous or adjacent properties, under the control of the same person or persons under common control, and described by one or more of the industrial groupings listed in Section 236 of this rule.
- 214 FAUX FINISH:** A finish intended to simulate a surface other than wood, including, but not limited to, stone, sand, metal, fur and leather.
- 215 FINISHING MATERIAL:** A coating other than one designed solely or principally as an adhesive, temporary maskant, and/or preservative. For wood furniture and fixtures, finishing materials include, but are not limited to, topcoats, sealers, primers, stains, basecoats, washcoats, enamels, toners, glazes, and graining inks.
- 216 HIGH SOLIDS STAINS:** Stains which are formulated to enhance wood grain and change wood color, but not conceal surface grain. For the purpose of this rule, high solids stains are stains that contain at least 120 grams of solids per liter (1 lb/gal) of stain as applied, and can include wiping stains and glazes.
- 217 HIGH-VOLUME, LOW PRESSURE (HVLP) SPRAY GUN:** Spray equipment that is used to apply coating by means of a spray gun that operates at 10 psig of atomizing air pressure or less at the center of the air cap. A permanently affixed manufacturer's gun identification or manufacturer's gun literature shall identify and be proof of an HVLP gun.
- 218 KILOGRAMS VOC PER KILOGRAM OF COATING SOLIDS:** A measurement that is used in this rule to express the VOC content of a coating. For any coating, kilograms VOC per kilogram coating solids is numerically identical to both pounds of VOC per pound of coating solids and to grams VOC per gram of coating solids.
- 219 LOW PRESSURE SPRAY GUN:** An air-atomized spray gun which by design functions best at air cap pressures below 10 psig (0.7 bar) measured according to Section 502.2 of this rule, and for which the manufacturer makes no public claims that the gun can be used effectively above 12 psig (0.8 bar).
- 220 LOW SOLIDS STAINS:** Stains which are formulated to enhance wood grain and change wood color, but not conceal surface grain. For the purpose of this rule, low solids stains are stains that contain up to one (1) pound of solids per one gallon (120 grams of solids per liter) (1 lb/gal) of stain as applied, and include sap stain, toner, and non-grain-raising (NGR) stains.
- 221 NONPERMANENT FINAL FINISH:** A material such as wax, polish, non-oxidizing oil or similar substance which retains its effect only temporarily and must be periodically reapplied to a surface to maintain or restore the material's intended effect.
- 222 POUNDS VOC PER POUND OF COATING SOLIDS:** A measurement of a coating's VOC content identical with kilograms VOC per kilogram of coating solids.

- 223 REPAIR COATING:** A coating used to recoat portions of a previously coated product to cover mechanical damage to that previous coating following normal painting operations.
- 224 RESTRICTED-USE GUN:** Any spray gun which atomizes coating using compressed air, such that in normal use or a use advertised by the manufacturer or distributor, the air cap pressure exceeds 12 psig (0.8 bar) in measurements done pursuant to Section 500 of this rule. Restricted-use gun also includes, but is not limited to, all conventional air-atomized spray guns.
- 225 SEALER OR PRIMER:** A film-building finishing material used to seal the pores of wood or wood-derived material before additional coats of finishing material are applied. Finishing materials used primarily to alter the appearance or color of the substrate, such as stains, washcoats, glazes, inks, and toners, are not sealers.
- 226 SINGLE RESIN-LAYER FINISH:** A completed, consumer ready finish, which has received only one application of resin-based coating serving as both sealer and topcoat, and having a total average dry finish thickness from the top of the finish to the surface of the wood-product substrate not exceeding 3 mils (0.076 mm) before sanding, as determined pursuant to the test method in Section 500 of this rule. If a washcoat is also used, the finish is not a single resin-layer finish.
- 227 STAIN:** A coating, excluding sealers and topcoats, that is formulated to enhance wood grain and change wood color, but not conceal surface grain. Stain includes all high solids stains and all low solids stains.
- 228 STRIPPABLE BOOTH COATING:** A coating which is applied to spray booth surfaces to receive the overspray and protect the substrate, and which is designed to be readily pulled off in strips or sheets and disposed of.
- 229 STRIPPING OPERATION:** Any operation in which organic VOC-containing solvent is used to remove coating from a substrate.
- 230 TOPCOAT:** The last permanent, functional film-building finishing material applied to a manufactured wood product. When the wood-product substrate is already sealed with sealer, any further coats that build a functional film are topcoats. Finishing materials used primarily to alter the appearance or color of the substrate, such as stains, washcoats, glazes, inks, and toners are not topcoats. A nonpermanent final finish is not a topcoat.
- 231 TOUCH UP COATING:** A coating used to cover minor coating imperfections after the main coating operation.
- 232 TRANSFER EFFICIENCY:** The ratio of the weight of coating solids deposited on an object to the total weight of coating solids used in a coating application step or series of such steps, expressed as a percentage.
- 233 VOC-BORNE COATING:** A coating in which the volatile portion contains, by weight, more VOC than water.

- 234 VOC-CONTAINING SOLVENT:** A solvent or diluent, used to solvate, dilute, reduce, thin, clean or strip, in which the weight-percent of VOC exceeds the weight percent of water.
- 235 WASHCOAT:** A transparent special purpose coating having a solids content by mass of 12.0 percent (12.0%) or less, and which is used to seal wood-product surfaces for any of the following purposes: to prevent undesired staining, to control penetration of subsequent finishes, to provide a barrier when paper laminates are applied to the wood-product, to seal glazes, and to improve adhesion of a waterborne topcoat.
- 236 WOOD FURNITURE AND FIXTURES:** All furnishings made of wood-product that are included in Standard Industrial Classification (SIC) code 2434, 2511, 2512, 2515, 2517, 2519, 2521, 2531, or 2541.¹
- 237 WOOD-PRODUCT:** Wood or wood-derived material, such as chipboard, particle board, fiberboard, pressed board, paper, and any other material derived from wood, bamboo, cane, or rattan, that retains some of the physical structure(s) of such original material(s), even if only at a microscopic level.
- 238 WORKING DAY:** A day, or any part of a day, in which a facility is engaged in the application of VOC-containing finishing material to wood furniture or fixtures.

SECTION 300 – STANDARDS

301 LIMITATIONS – VOC CONTENT:

- 301.1** An owner or operator shall not apply a topcoat or sealer to wood furniture or fixtures or shall not apply a strippable booth coating unless VOC content is limited to the VOC limits in one of the columns in Table 342-2 below:

**Table 342-2
General VOC Limits of Coatings**

Coating Type	Lb VOC/lb solids is equivalent to kg VOC/kg solids	lb VOC /Gallon*	Grams VOC/liter*
Sealer	1.9	5.38 lb/gal	645 g/l
Topcoat	1.8	5.29 lb/gal	635 g/l
Acid-Cured Alkyd Amino Vinyl Sealer	2.3	5.67 lb/gal	680 g/l
Acid-Cured Alkyd Amino Conversion Varnish Topcoat	2.0	5.46 lb/gal	655 g/l
Strippable Booth Coating	0.8	3.0 lb/gal	360 g/l
Low VOC Topcoat (No VOC limit for Sealer when used with low VOC topcoat)	0.8	3.0 lb/gal	360 g/l

¹ This errata note is not part of Rule 342. For the reader’s convenience, Standard Industrial Classification code 2599 was inadvertently omitted from the definition of “Wood Furniture and Fixtures”. The code will be included in the definition for the next revision of this rule.

Coating Type	Lb VOC/lb solids is equivalent to kg VOC/kg solids	lb VOC /Gallon*	Grams VOC/liter*
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*less non-precursor compounds and water

301.2 Emission Control System (ECS) as an Alternative Control: A facility may meet the VOC limits of Section 301.1 of this rule if the owner or operator complies with all provisions in this rule’s Appendix C: ALTERNATIVE COMPLIANCE WITH SECTION 301 VOC LIMITS AND/OR SECTION 302 SPRAY-METHOD RESTRICTIONS BY USING AN EMISSIONS CONTROL DEVICE and with the other applicable provisions of this rule.

301.3 Averaging: An owner or operator of a larger furniture coating facility meeting the applicability requirements of subsection b., in this rule’s Appendix A: AN AVERAGING ALTERNATIVE, may comply with Section 301.1 of this rule by complying with Averaging-Formula 1 or Averaging-Formula 2 in Appendix A and by complying with all other applicable provisions of Appendix A.

301.4 Smaller Source Option: The owner or operator of a facility that has emitted two (2) or more tons (1.8 Mg) but less than ten (10) tons (9.1 Mg) per year of VOC from all wood coating and associated operations is exempted from all provisions under Sections 300, 400, and 501 (but not Sections 100, 200, and 502) if all provisions are complied with in this rule’s Appendix B: A SHORT-FORM OPTION. Sources emitting less than two (2) tons (1.8 Mg) of VOC per year may be allowed exemptions pursuant to Section 103.2(d) of this rule.

302 LIMITATION OF CONVENTIONAL AIR-ATOMIZED SPRAY AND OTHER SPRAY METHODS ATOMIZING WITH HIGH-PRESSURE AIR:

302.1 Evidence of Transfer-Efficient Spray Equipment: An owner or operator shall not spray wood furniture with coating exceeding 1 lb VOC/lb solids (1 kg VOC/kg solids) without providing evidence or manufacturer’s specifications of a low pressure spray gun or system; an HVLP spray gun; an electrostatic system; or a system in which the energy for atomization is provided principally via hydraulic pressure; this includes air assisted airless and ultra-low-volume-air assisted technologies. Such requirement does not apply to any facility, activity or person specifically exempted by Section 103 of this rule, or to any specific system which is approved by the Administrator as HVLP-equivalent.

302.2 Limitation of Air-Atomized Spray Gun other than Low Pressure or HVLP Spray Guns: An owner or operator shall not use a conventional air-atomized spray gun or other restricted use gun, except:

- a. To apply finishing materials that have a VOC content not exceeding 1.0 lb VOC/lb solids (1.0 kg/kg).
- b. If VOC emissions from the finishing application station, employing such a gun, are captured and directed to an ECS, pursuant to the provisions of Appendix C: ALTERNATIVE COMPLIANCE WITH SECTION 301 VOC LIMITS

AND/OR SECTION 302 SPRAY-METHOD RESTRICTIONS BY USING AN EMISSIONS CONTROL DEVICE.

- c. For touch-up and repair under either of the following conditions:
 - (1) The application is performed after completion of the entire finishing operation; or
 - (2) The application is performed after applying stain, and before any further coating, by equipment having a total capacity not exceeding 2.1 gallons (8 liters).
- d. To apply less than five percent (5%) of all coating pursuant to Section 103.2(e)(1) of this rule.

303 OPERATION AND MAINTENANCE: An owner or operator subject to this rule shall operate and maintain in proper working order all process equipment in which VOC-containing materials are used or stored.

304 VOC LEAK DETECTION AND REPAIR:

304.1 Leak Inspection: An owner or operator shall conduct a visual inspection once per month of pumps, valves, flanges, or other equipment used to transfer or apply VOC-containing finishing materials or VOC-containing solvents.

304.2 Leak Repair: The owner or operator shall repair a leak within the time frames listed below:

- a. A first attempt to repair a leak shall be made no later than five (5) working days after the leak was first detected.
- b. Final repairs shall be made within fifteen (15) working days after the leak was first detected unless the leaking equipment is to be either:
 - (1) Removed from service within three (3) months after the leak was first detected; or
 - (2) Replaced by a new purchase within three (3) months after the leak was first detected.

305 CLEANUP AND CLEANING SUPPLY AND APPLICATION EQUIPMENT:

305.1 Booth Cleaning: An owner or operator shall not clean spray booth components using a VOC-containing solvent containing more than eight percent (8.0%) by weight of VOC, including water and non-precursor compounds, except for: conveyors; continuous coaters and their enclosures; and metal filters and while refurbishing spray booths. If the strippable booth coating is being replaced, an owner or operator shall not use more than 1.0 gallon (3.8 liters) VOC-containing solvent per booth to clean the spray booth.

305.2 Cleaning Guns and Lines: An owner or operator shall collect all VOC-containing solvent used to clean spray guns and shall pump or drain all VOC-containing solvent used for line cleaning into non-leaking container(s). Such containers shall be closed or covered after all the VOC-containing solvent has been collected, and shall remain so except when in use.

306 HANDLING AND DISPOSAL OF VOC-CONTAINING MATERIALS:

306.1 Use and Storage: An owner or operator shall cover and keep covered each VOC-containing material intended for the day's production, which is not currently in use. An owner or operator shall store VOC-containing finishing and cleaning materials in closed containers.

306.2 Disposal of VOC and VOC-Containing Material: An owner or operator shall store all VOC-containing materials intended for disposal, including, but not limited to, rags, waste coatings, waste solvents and their residues, in closed containers which shall remain covered except when contents are being added or removed.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE FOR APPENDIX C: The following schedule applies, with exceptions for an Emission Control System provided in Appendix C.

401.1 Sources Emitting 50 TPY: Each facility which has applied for or received a Title V permit, or a permit with an annual VOC limit of 50 tons (45.35 Mg) or more, or which has had an aggregate VOC emission to atmosphere after December 31, 1989, of 50.0 tons (45.35 Mg) or more in any calendar year or 300 pounds (136 kg) or more in any working day, emitted in compliance with all requirements of this rule must submit a Control Plan. The Control Plan shall set forth the maximum VOC content of each coating-as-applied and provide documentation showing how these values were determined.

401.2 Other Sources: Any wood furniture and/or fixture facility with total VOC emissions to atmosphere in each of the years 1990 through 1995 of no more than 300 pounds (136 kg) in any working day and 50.0 tons (45.35 Mg) in any calendar year, emitted from wood coating operations and associated cleaning processes, which has emitted more than 25 tons (22.7 Mg) of VOC from coating operations in any of the years 1993 through 1995 must submit a Control Plan, setting forth the maximum VOC content and copies of the documentation showing how the coating-as-applied values were determined.

402 REGULATORY CLARIFICATION:

402.1 Status with Respect to Rules 330 (Volatile Organic Compounds) and 336 (Surface Coating Operations): A wood furniture or fixture coating operation is not subject to Rule 330 or to Rule 336 of these rules.

402.2 Component Materials that were Subject to Prior Regulation: The regulatory status of facilities, owners or operators is not affected by the fact that component materials, such as wood composites or paneling, may have been subject to Reasonably Available Control Technology (RACT) or other regulatory requirements in their original manufacture, before their subsequent use by a facility in Maricopa County.

402.3 Other Rules: Nothing in this rule exempts a person from complying with the NESHAP (National Emission Standards for Hazardous Air Pollutants) for coating wood furniture and fixtures or from complying with any other applicable Federal, states, and local laws or regulations.

402.4 Coating over Wood Coating(s) the same as Coating onto Wood: The VOC limits for finishing materials given in Section 301.1 of this rule apply to such coatings whether applied directly onto any area of wood-product substrate or on any intermediate layer(s) of coating on the wood-product substrate.

403 ANNUAL OPERATOR TRAINING REQUIREMENTS TO REDUCE VOC EMISSIONS:

403.1 An owner or operator shall train new and existing employees in the coating application, cleanup, and finish equipment operation if the employee uses VOC-containing materials. Training must include the following information:

- a. Proper coating application;
- b. Cleaning, washoff, and waste procedures;
- c. Proper finish equipment operation; and
- d. Methods to reduce solvent usage.

403.2 Employees hired after November 2, 2016, shall be trained upon hiring, unless previously trained within the past year.

403.3 Employees hired prior to November 2, 2016, shall be trained by May 2, 2017.

403.4 Employees shall be given refresher training annually.

403.5 Training records shall be maintained per Section 500 of this rule.

SECTION 500 – MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING: An owner or operator shall keep the following records and lists in a consistent and complete manner and shall make them available to the Control Officer without delay during normal business hours. Each record shall be maintained a minimum of five (5) years.

501.1 Current List:

- a. **VOC-Containing Materials:** A current list of all VOC-containing material shall be maintained which contains their name or code and their VOC content. Any qualified single resin-layer finish shall be identified as such. VOC-containing material list shall be updated by the end of the following month.
- b. **Mix Ratios:** A current list of VOC-containing mix ratios for catalyst/hardeners shall be maintained if the manufacturer's recommended mix ratio is not followed or when the manufacturer has no recommendations.

501.2 Schedule for Recording Material Usage:

- a. **Daily Updates for Non-Compliant Material:** The amount of each working day's use of each topcoat, sealer or booth material that exceeds applicable VOC limits of Section 301 or Section 305 of this rule shall be totaled and logged by the end of the following working day. VOC content shall be entered for each such material.

b. Monthly Update for Materials Compliant with Sections 301 and 305 of this Rule: By the end of the following month, an owner or operator shall update the following records for each month:

- (1) For each topcoat and sealer to which reducer is added at any time after its arrival at a facility, enter the VOC content in lb VOC/lb solids (kg VOC/kg solids) or in lb VOC/gal (grams VOC/liter), less water and non-precursor organic compounds. This requirement shall not apply if the reducer is itself compliant with respective topcoat's and sealer's VOC limit in Table 342-2 of this rule.
- (2) The amount of coating, the amount of catalyst/hardener, and the amount of reducer/coating diluent used.
- (3) The quantity and name of VOC-containing solvent used each month for stripping and cleaning.
- (4) The quantity of VOC-containing solvent disposed of offsite during the month just ended.
- (5) **Exception:** Update yearly the totals of the usage of each VOC-containing material known to be used in amounts less than 15 gallons (57 liters) per year.

c. Semi-Annual Updates of Coatings Applied with Restricted Use Gun:

Records associated with the Section 302 limitations on the use of conventional air-atomized spray equipment and other restricted-use guns shall be kept. These records shall show for each semi-annual period the volume (VR) of finishing materials exceeding solids (1 lb VOC/ lb solids) (1 kg VOC/kg solids) applied with conventional air-atomized spray guns and other restricted use guns. In addition, the total volume of all finishing material (AMV) used throughout the facility shall be determined. The total volume (VR) so applied over the previous six-months is divided by the total of all coatings used in the same period (AMV) and these calculations and the result are entered in the log.

501.3 Disposal/Recovery: An owner or operator shall keep records of disposal/recovery of all VOC-containing materials.

501.4 Monthly VOC Leak Detection Inspection and Repair Records: The owner or operator shall maintain monthly leak detection and repair records that document, at a minimum, the following:

- a. Name of person conducting the leak detection inspection.
- b. The date the inspection was conducted.
- c. The equipment inspected.
- d. Any leaks that were detected or, note if no leaks were detected.
- e. If a leak was detected, then include all of the following information on the inspection record:
 - (1) The date the leak was detected.
 - (2) The date of the first attempt of repair.

- (3) The results of the first attempt of repair.
- (4) The date and results of subsequent repairs, if necessary.
- (5) The results and date of the final repair.

501.5 Annual Operator Training Records Required by Section 403 of this Rule: The owner or operator shall maintain a copy of the training program and shall include, at a minimum, the following:

- a. A list of employees trained and date trained; and
- b. Training material used for training.

502 COMPLIANCE DETERMINATION – TEST METHODS INCORPORATED BY REFERENCE: The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods are incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. Alternative test methods as approved by the Administrator or other EPA-approved test methods may be used upon prior written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method will constitute a violation.

502.1 Measurement of VOC Content: EPA TEST METHOD 24—DETERMINATION OF VOLATILE MATTER CONTENT, WATER CONTENT, DENSITY, VOLUME SOLIDS, AND WEIGHT SOLIDS OF SURFACE COATINGS (40 CFR 60, Appendix A-7) shall be used to determine the VOC content and the solids content by weight of the coating materials.

502.2 Measurement of air pressure at the center of the spray gun air cap of a conventional air-atomized spray gun (reference Section 302) shall be performed using a device in proper working order supplied by the gun's manufacturer for performing such a measurement.

502.3 Measurement of mil thickness to determine compliance with single resin-layer finish parameters in Section 227 of this rule and Section 103.2(c) of this rule shall be performed by draw bar and calculations using the weight and area of the film and the density of the cured coating solids, by a Tooke Inspection Gage according to the instructions of its manufacturer, or by other means used for the purpose by a major coating manufacturer's laboratory or quality control.

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 342
COATING WOOD FURNITURE AND FIXTURES**

**APPENDIX A
AN AVERAGING ALTERNATIVE**

- a. **Purpose:** The averaging provisions of this Appendix to Rule 342 allow the owner or operator of a furniture coating facility, which meets eligibility requirements, increased options in choosing coating types. These provisions expand the range of the allowable VOC contents of coatings while limiting overall VOC emissions to amounts less than would be emitted at the VOC-content limits of Section 301.1 of this rule.
- b. **Eligibility to Apply:** The owner or operator of any furniture coating operation, reasonably capable of annually emitting more than 25 tons (22.7 Mg) of VOC and having at least one of the following four statuses with respect to VOC emissions, may apply to average:
- (1) Has emitted more than 25 tons (22.7 Mg) of VOC in any year since 1989 and has a Maricopa County Air Quality Permit or is under consideration for such permit by the Control Officer;
 - (2) Has in its permit a VOC-emissions limit of 50 tons (45.4 Mg) or more;
 - (3) Has applied for or received Title V status.
- c. **How to Apply:** An applicant shall submit a request for eligibility to the Control Officer. This request shall include a summary of the chief reasons for requesting eligibility for averaging.
- (1) The Control Officer shall provide a brief questionnaire eliciting responses intended to reveal whether the operator has sufficient understanding and preparation to successfully average. This questionnaire shall require a sample of their intended recordkeeping format along with calculations containing the expected amount and VOC-contents of coatings intended to be used in averaging.
 - (2) The Control Officer may request confirmation, correction, or clarification from the owner or operator for responses to the questionnaire that are questionable; that appear unclear, erroneous, incomplete, or non-pertinent, or for which there is contrary evidence.
 - (3) The owner or operator shall submit a correctly completed questionnaire, signed by a responsible officer of the facility, no later than 14 calendar days prior to the first day of averaging.
 - (4) Control Officer approval of the completed questionnaire shall constitute an acceptance of application for minor permit revision. The Control Officer may request additional information characteristically required for minor revisions to the permits of wood furniture coaters as a class.
 - (5) Control Officer approval does not necessarily constitute satisfaction of all federal requirements nor preempt the EPA Administrator's asserting a right of approval.

d. Definitions of Terms used in an Averaging Regime, for the Purposes of the Provisions of this Appendix to Rule 342:

- (1) CERTIFIED PRODUCT DATA SHEET:** A document provided by a coating supplier stating precisely the maximum VOC content of a particular coating as supplied. The maximum VOC content of a particular coating may be expressed as the VOC content by percent weight or VOC content Pounds per Gallon and Solid Content by percent weight or percent Non-Volatile and Density; or for any of these described expressions, equivalent information is acceptable.
- (2) CREDIT CONSUMING COATING (EXCEEDING COATING):** In an averaging regime, coating with average VOC content exceeding the neutral point for its particular coating type, such as topcoat, sealer, etc. A credit consuming coating requires the use of credit generating coating(s) in order that the combination of all coatings in use will not exceed the limit set by the left side of the averaging formula.
- (3) CREDIT CONSUMING PIECE/EXCEEDING PIECE:** In an averaging regime, a piece of furniture which is a member of a model-line of furniture receiving such a high proportion of credit-consuming coating that when the VOC contents and coating quantities received by the model-line, are entered into an averaging formula of Section i., the sum yielded by the right side of the formula is consistently larger than the sum yielded by the left side of the formula.
- (4) CREDIT GENERATING COATING:** A coating which has VOC content well below the neutral point and, thus, is used in an averaging regime to create surplus VOC credit(s) to offset the excess emissions of particular credit consuming coating(s).
- (5) CREDIT GENERATING PIECE:** In an averaging regime, a piece of furniture which is a member of a model-line of furniture receiving so much credit generating coating that when the VOC contents and coating quantities, received by the model-line, are entered into an averaging formula, the sum yielded by the right side of the formula is consistently less than the sum yielded by the left side of the formula.
- (6) NEUTRAL POINT:** The particular number representing the VOC content of a particular coating type having the mathematical property that if it is included in an averaging formula it has no effect on the numerical results of the formula, regardless of how much of the coating is used. The neutral point VOC content for each affected coating-type is as follows:

Using Formula 1:

Topcoat neutral point - 0.72 pound VOC per pound coating solids (0.72 kg VOC/kg solids).
(Stains, sealers, etc. do not appear in Formula 1)

Using Formula 2:

The neutral point VOC content for each of the 5 types of coating in Formula 2 is as follows:

**Table 342-3
Formula 2 Neutral Point VOC Content of Coating**

Coating Type	VOC Content Neutral Point	VOC Content Neutral Point
Topcoat	1.62 lb VOC/lb solids	1.62 kg VOC/kg solids
Sealer coat	1.71 lb VOC/lb solids	1.71 kg VOC/kg solids
Washcoat	8.1 lb VOC/lb solids	8.1 kg VOC/kg solids

Coating Type	VOC Content Neutral Point	VOC Content Neutral Point
Basecoat	1.08 lb VOC/lb solids	1.08 kg VOC/kg solids
Stain	5.942 lb VOC/gallon	0.712 kg VOC/liter

e. Basic Requirements for all Averaging Regimes:

- (1) **Entire Working Days:** Averaging regimes must be in place for no less than an entire 24 hour period and at all times during such 24-hour period. Normally, a working day will be the calendar day in which work commences. However, an owner or operator may designate in writing a working day schedule beginning and ending at a specific time between 12 midnight and 4:30 AM if the last shift normally ends between midnight and 4:30 AM, unless the Control Officer issues written disapproval. The times of the averaging working day may be changed if written notification has been given the Control Officer at least five working days before the start of the intended new schedule, and no communication of disapproval has been issued within this time by the Control Officer.
- (2) **Averaging Applies Plant-Wide:** An averaging regime applies throughout a facility to all production furniture coating occurring during all 24 hours of a working day for which an averaging regime is declared.
- (3) **No Exemption for Single Resin-Layer Finishes or Acid-Cured, Alkyd Amino Coatings:**
 - (a) In averaging regimes using Formula 2, for surfaces which receive in total only one application of film building coating, the neutral point for that coating shall be the same as that for a sealer, 1.71 lb VOC/lb solids (1.71 kg VOC/kg solids), and it shall be totaled with sealers in the averaging formula.
 - (b) Acid-cured, alkyd amino coatings, with or without vinyl chemistry, shall have the same neutral points in Formula 2 as do other sealers (1.71 lb VOC/lb solids or 1.71 kg VOC/kg solids) and topcoats (1.62 lb VOC/lb solids or 1.62 kg VOC/kg solids) and shall be totaled in with the other sealers and topcoats in Formula 2.
- (4) **Identifying Credit Consuming Models:** Each furniture/finish model must be identified which on average does not by itself (i.e., by the combination of all coatings it receives) meet the applicable averaging formula (and must be offset by models whose coatings generate VOC credits). The model name and/or code of each credit consuming model must be identified in a permanent record for that purpose, along with a designation indicating that the model produces excess emissions. This designation can be the average grams of VOC above the formula limit, the maximum grams above the limit, number of exceeding grams at the first standard deviation, relative risk, or other term(s) created by the owner or operator that fulfill this purpose for the facility.
- (5) **Exemption for Physically Separated Lines:**
 - (a) At the Control Officer's discretion, an exemption from the requirement that the entire facility participate when an averaging regime is in effect can be granted for an additional coating line if: Such a coating line is both physically separate from the operations involving averaging and all monitoring, recordkeeping, and coating equipment including coating reservoirs are kept separate from the monitoring, recordkeeping and coating equipment participating in an averaging regime. The burden of demonstration is on the

owner or operator that there is no significant risk of confounding enforcement, monitoring, recordkeeping, and equipment activities between the lines.

(b) Dual Averaging Regimes: A facility which has received such a subsection e.(5)(a) exemption has the option of running each separated line using an averaging regime. However, all requirements of this rule must be complied with by each separated line.

(6) Declaration of Averaging: On any working day of a Control Officer presence at a facility permitted to average, the owner or operator shall correctly announce without delay whether an averaging regime is currently in effect, and on an averaging working day shall also forthwith supply a listing of each coating participating in the averaging formula, along with the VOC content and the coating category of each.

f. Recordkeeping and Monitoring: In addition to the requirements of Section 501 of this rule, an owner or operator shall do the following:

(1) Daily List the Components: Prior to applying any coating on an averaging working day, a list shall be made of each coating name/code to be used that working day in the averaging formula and its expected VOC content as applied. This list shall be available to the Control Officer without delay.

(2) Daily calculation Deadline: After each working day using averaging, an owner or operator shall determine the results of averaging for that completed working day by midday on the next working day. These results shall be put into hardcopy in the same format that the owner or operator used in the approved application questionnaire. Some other format may be used if the Control Officer has given the format approval before beginning averaging.

(3) Log in: An owner or operator shall arrange and keep the hardcopy results of each working day's averaging in a form that allows the results of each averaging working day within the 13 months prior to a Control Officer visit to be accessed by the Control Officer without delay.

(4) Content of Weekly Summary of Production-Coating: By the end of the first shift of the workweek, totals for the workweek just completed shall be compiled as follows:

(a) For each model and color, the total number of furniture pieces coated;

(b) The name and quantity applied for each stain, washcoat, basecoat, sealer, topcoat, and diluent recorded. The quantity of stain shall be expressed in liters; the quantity of the other coatings expressed in kilograms;

(c) The VOC content for each such coating and diluent, expressed in lb VOC/lb solids or kg VOC/kg solids; and the non-precursor organic compound (NP) content of each, expressed either in kg NP/kg solids or kg NP/kg coating-including-NP shall be recorded, except that the VOC content of each stain shall be expressed in kg VOC per liter of coating, including any water or non-precursors.

(d) Monthly Totals for Non-Averaged Coatings: For coatings that do not participate in the averaging formulas, the total kilograms used shall be updated monthly. Coatings of the same type may be totaled together under a single VOC-content value if their VOC contents are within $\pm 2\%$ of that value.

(5) Handling Unavoidable Data Loss and Data Processing Equipment Malfunctions: An owner or operator shall put an accounting system in continual effect that allows the retrieval or reconstruction of data. When data required by this rule is lost, the Control Officer shall be

notified forthwith and such data shall be reconstructed and due calculations completed within two working days. The Control Officer may request that a hardcopy of the retrieved information be provided him/her by the same clock time, two working days hence.

(6) Report Submittal Schedule:

(a) Semi-Annual Reports: An owner or operator shall submit a summary of the records, including all exceedances, by July 20 for the first half of the year and by January 20 of the following year for the second half. Included shall be certified product data sheets for coatings whose VOC content is determined by the supplier and not directly by the facility, and a statement that the coatings for which certified product data sheets are submitted were the coatings actually used. All the foregoing shall be certified to and signed by a responsible official of the facility.

(b) Initial Compliance Report: Within 60 days after the third working day ever of averaging, an owner or operator shall submit a report to the Control Officer containing all the elements required by subsection f.(6)(a) above.

g. Test Procedures and Requirements:

(1) An owner or operator shall cause to be performed EPA Test Method 24 - Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings, tests on a sample of each coating intended to be used in an averaging regime, prior to using such coating in any averaging regime. These samples shall be taken at three levels of dilution: prior to adding any diluent; with the minimum weight of VOC-containing solvent/diluent typically used; and with the maximum weight of VOC-containing solvent/diluent expected ever to be needed.

(2) An acetone determination shall be made in conjunction with Method 24 using EPA Test Method 311 - Analysis of Hazardous Air Pollutant Compounds in Paints and Coatings by Direct Injection into a Gas Chromatograph; or other method approved by EPA at the three dilution levels stipulated in subsection g.(1).

(3) The Status of Certified Product Data Sheets: After the initial Method 24 tests pursuant to subsection g.(1), an owner or operator may substitute the specific certified product data sheet, based on Method 24, for any coating for any of the three levels of dilution stipulated in subsection g.(1), in lieu of directly overseeing the Method 24 tests.

(a) However, a certified product data sheet is not valid and shall not be submitted if it is neither for a dilution level in subsection g.(1) nor for the actual dilution level of a coating as applied during averaging.

(b) When the results of a Method 24 test, performed pursuant to a Control Officer initiative or directive, differ from the certified product data sheet, the Control Officer may require an owner or operator to have Method 24 tests conducted at a testing facility agreed to by the Control Officer and may require that the results of such tests be the values used in calculating averages.

h. Sanctions:

(1) If an exceedance of the limits of an averaging formula is determined to be in violation of this rule, at least two violations may be charged: at least one violation for exceeding the limits in Section 301.1 and a separate violation for exceeding the limit determined by the averaging

formula in Section i. of this Appendix. Unless the Control Officer chooses otherwise, the number of violations issued for an exceedance of an averaging limit shall be one greater than the number of exceeding coatings participating in the averaging formula. Each working day the average is exceeded will be counted as a separate incident.

(2) Continuance: The Control Officer may disallow an owner or operator the continuance of averaging at a facility which has failed to comply with one or more provisions of this Appendix on three separate working days in any period of 12 consecutive months, or which has been found guilty of a major violation of such provisions, except as prohibited by other rule or statute.

i. Two Averaging Formulas: The following are the two mathematical formulas from which one may be chosen to be used for an averaging regime.

(1) If topcoats consistently average less than 0.72 kg VOC per kg solids on a mass solid basis, an owner or operator may use Formula 1.

$$\sum_{i=1}^n 0.72(TC_i) \geq \sum_{i=1}^n ER_{TC_i}(TC_i) \quad \text{Formula 1}$$

(2) For other coating systems using averaging, Formula 2 shall be used.

$$\sum_{i=1}^n 1.62(TC_i) + 1.71(SE_i) + 8.1(WC_i) + 1.08(BC_i) + 0.712(ST_i) \geq \sum_{i=1}^n ER_{TC_i}(TC_i) + ER_{SE_i}(SE_i) + ER_{WC_i}(WC_i) + ER_{BC_i}(BC_i) + ER_{ST_i}(ST_i) \quad \text{Formula 2}$$

where:

- N = number of finishing materials participating in averaging;
- TC_i = kilograms of solids of topcoat i used;
- SE_i = kilograms of solids of sealer i used;
- WC_i = kilograms of solids of washcoat i used;
- BC_i = kilograms of solids of basecoat i used;
- ST_i = liters of stain i used (water and any non-precursor content are not subtracted);
- ER_{TC_i} = VOC content of topcoat i in kg VOC/kg solids, as applied;
- ER_{SE_i} = VOC content of sealer i in kg VOC/kg solids, as applied;
- ER_{WC_i} = VOC content of washcoat i in kg VOC/kg solids, as applied;
- ER_{BC_i} = VOC content of basecoat i in kg VOC/kg solids, as applied; and
- ER_{ST_i} = VOC content of stain i in kg VOC/liter, as applied.

j. Pre-RACT Coating use is Limited: If a coating was used before 1993, and is still used for the same purposes, and it had a VOC content then which is lower than the neutral point for that coating type, then that coating may only be used in the averaging equation if the coating is now lower in VOC than before 1993. If that coating is used in averaging, the left side of the averaging formula must reflect the pre-RACT VOC content and not the current RACT neutral point for

that type of coating. To effect this, additional mathematical terms must be added, one on the left and one on the right side of the formula. For example, if one can prove one used a high solids topcoat at 1.5 kg VOC/kg solids before 1993 (the year regulation negotiations began) and now thin the same product less so that it is consistently less than 1.5 kg/kg, one can enter it as a separate term. It appears in the formula below as “1.5(TU)” where “TU” stands for the total kilograms of solids of this unique topcoat used during an averaging working day. “TU” appears on both sides of the inequality sign. ER_U is the actual VOC content that was in this unique topcoat on a particular averaging working day. Along with this, the meaning of the term (TC_i) becomes slightly altered to mean the total topcoat solids used of every other topcoat beside the unique topcoat “U”:

$$\sum_{i=1}^n 1.62(TC_i) + 1.5(TU) + 1.71(SE_i) + 8.1(WC_i) + 1.08(BC_i) + 0.712(ST_i) \geq$$

$$\sum_{i=1}^n ER_{TC_i}(TC_i) + ER_U(TU) + ER_{SE_i}(SE_i) + ER_{WC_i}(WC_i) + ER_{BC_i}(BC_i) + ER_{ST_i}(ST_i)$$

Similarly, any other unique coatings that meet such requirements and are used in averaging must each have its own set of two terms inserted into the averaging formula. Moreover, once a pre-RACT coating is used in averaging, the term for its VOC content must stay in the equation as long as that pre-RACT coating is used, even if one later needs to raise the VOC content of the pre-RACT coating to a level above its historical VOC content.

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 342
COATING WOOD FURNITURE AND FIXTURES**

**APPENDIX B
A SHORT-FORM OPTION**

- a. **Applicability:** This Appendix B to Rule 342 only applies to operators of facilities which have a permit or permit modification limiting VOC emissions from all wood furniture and millwork coating to less than 10 tons (9.1 Mg), and the permit or Control Officer states in writing that this Appendix B applies. For those facilities for which this Appendix B does apply, no provisions within Sections 301 through 501, inclusive, shall be used to substitute for provisions in this Appendix B. Facilities subject to this Appendix B are also subject to all of Sections 100, 200, and 502.
- b. **Definitions:** For the purposes of this Appendix B, the following definition shall apply:
- (1) **MINUS EXEMPT MATERIALS (MINUS EXEMPTS):** Means the same as “less water and non-precursor organic compounds” in specifying VOC content.
- c. **VOC Limits for Topcoats and Sealers**
- (1) **The Principal VOC Limits:** Meet either the lbs VOC/lb solids limit or the lbs VOC/gal, minus exempts, limit: All sealers and topcoats: 2 lbs VOC/lb solids (2 kg VOC/kg solids) or 5.45 lb VOC/gal (653 g/l).
- (2) **VOC Tradeoff Options:** These 2 options each require special conditions.
- (a) **Low VOC topcoat with Higher VOC Sealer:**
- Low VOC topcoat: 0.8 lb VOC/lb solids (0.8 kg VOC/kg solids) or 3.83 lb/gal (455 g/l) limit for topcoat.
- Higher VOC sealer: no VOC limit for sealer under such topcoat.
- (b) **One-Step Finish:**
- Higher VOC combination sealer and topcoat: 3 lb VOC/lb solids (3 kg VOC/kg solids) or 6.0 lb/gal limit (719 g/l).
- The 2 Conditions:
- I. A single wet application of either sealer or topcoat (not both)
- II. Thickness of the dry finish cannot exceed 3 dry mils, as determined by the test method in Section 502.3 of this rule.
- d. **Spray Method Requirements:**
- (1) **Have Guns with Higher Transfer:** If you spray coating having over 1 lb VOC/lb solids (1 kg VOC/kg solids) you must use and have in evidence for an inspector at least one of the following onsite:

- Low pressure gun with less than 12 psig at air cap.
- An HVLP gun or a turbine gun with 10 psig or less at air cap.
- Airless; includes air-assisted airless.
- An electrostatic system.

(2) Conventional Spray Gun Restriction: No coating over 1lb VOC/lb solids (1 kg VOC/kg solids) may be applied with a conventional air-atomized or other restricted use gun unless the coating meets the requirements of Section 103.2.e of this rule. This prohibition includes, but is not limited to, traditional lacquers, washcoats, and low-solids stains.

(3) Exemptions from VOC and Spray-Method Limits: Prepackaged aerosol spray in cans under 22 fl. oz. (0.66 liter), faux and metal-leaf finish are exempt from Appendix B's subsections c.(1) and (2) and d.(1) and (2) as is any refinishing operation necessary for preservation, to return furniture to original condition, to replace missing furniture items to complete a matching set, or to produce custom replica furniture. But nothing exempted by the previous sentence is exempt from inventory of VOC emissions or from other provisions of this Appendix B.

e. Housekeeping Functions:

(1) Keep VOC-Containing Materials, Cleaners, & Waste-Materials Covered: An owner or operator shall cover and keep covered each VOC-containing material intended for the day's production, which is not currently in use. An owner or operator shall store VOC-containing finishing and cleaning materials in closed containers. An owner or operator shall store all VOC-containing materials intended for disposal, including, but not limited to, rags, waste coatings, waste solvents and their residues, in closed containers, which shall remain covered except when contents are being added or removed.

(2) Booth Cleaning: An owner or operator shall not clean spray booth components using a VOC-containing solvent containing more than eight percent (8.0%) by weight of VOC, including water and non-precursor compounds, except for: conveyors; continuous coaters and their enclosures; and metal filters and while refurbishing spray booths. If the strippable booth coating is being replaced, an owner or operator shall not use more than 1.0 gallon (3.8 liters) VOC-containing solvent per booth to clean the spray booth.

f. Records: Keep a list of all VOC-containing material with the name and amount of VOC in each: Express VOC content either as lb VOC/lb solids (kg VOC/kg solids) or lb VOC/gal (g VOC/l). For topcoat and sealer contents which are expressed in lb VOC/gal, this must be minus water and non-precursors.

(1) If you ever do your own Reducing or Thinning of a Sealer or Topcoat:

Keep a list of the maximum VOC content of any material after you thin it or add any additives at your facility.

(2) Keep Receipts for 5 Years of the amount received for each VOC containing material and of the amount of all VOC containing waste materials sent for recycling or hazardous waste collection.

(3) What to Record and How often: Record the amount in the following 4 categories, (a) to (d), noting either the amount “used” or the amount “received” since your last records update:

- (a)** All coatings including topcoats, sealers, stains, etc., including all parts, catalysts, activators, additives, hardeners; (not reducers). If you use conventional guns at all, total separately the coatings having less than 1 lb VOC/lb solids;
 - (b)** All VOC-containing reducers and diluents to be used for reducing or diluting coatings (not cleaning);
 - (c)** All VOC-containing solvents, strippers, thinners, and VOC-containing materials used for cleaning and cleanup (not reducing); and
 - (d)** All other VOC-containing materials connected with wood coating. Omit janitorial and building maintenance.
- (e) How often to Update your Records:** Update the above items in (a), (b), (c), and (d) weekly if your total monthly use of all coatings and diluents [(a) + (b)] is 250 gallons (946 liters) or more. Otherwise, update monthly. You may record just once a year those types of materials of which you use less than 15 gallons (57 l).

Example: I use 5 kinds of graining ink. Added all together, I use 14 gallons of all graining ink combined: I only have to update my graining inks once a year.

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 342
COATING WOOD FURNITURE AND FIXTURES**

**APPENDIX C
ALTERNATIVE COMPLIANCE WITH SECTION 301 VOC LIMITS AND/OR
SECTION 302 SPRAY-METHOD RESTRICTIONS BY USING AN EMISSIONS
CONTROL DEVICE**

- a. **Eligibility:** A person is allowed to meet the VOC limits of either or both Sections 301.1 and 301.2 of this rule by using an ECS which reduces VOC emissions overall, including capture and processing, by at least 81 percent by weight. Such an ECS may also be used to comply with Section 302.2 of this rule spray method provisions.
- b. **Operation and Maintenance (O&M) Plan Required for ECS:**
- (1) The owner or operator of an emission control system (ECS) used to meet the requirements of Section 301 of this rule shall provide the Control Officer with an Operation and Maintenance (O&M) Plan. This O&M Plan shall specify key system operating parameters, such as temperatures, pressures and/or flow rates, necessary to determine compliance with this rule, and describe in detail procedures and their frequency of implementation needed to maintain the ECS.
 - (2) The Control Officer's written approval of the O&M Plan is required. The owner or operator shall consistently implement all provisions of the O&M Plan.
 - (3) **Changes in Frequency:** Changes involving reduction in the frequency or extent of procedures or parameters in a Control Officer-approved O&M Plan shall have the written consent of the Control Officer prior to being implemented.
 - (4) **Other Changes:** An updated O&M Plan must be submitted to the Control Officer for review within ten (10) days of any changes not involving reduction in frequency or extent of procedures or parameters of an approved O&M Plan. Within five (5) working days of a written disapproval of such changes, either the original O&M Plan shall be reinstated or an alternative plan, negotiated with the affected facility and approved in writing by the Control Officer, shall be instituted.
- c. **Providing and Maintaining ECS Monitoring Devices:** Any person operating an emission control system (ECS) pursuant to Section 301.3 of this rule shall install, maintain, and calibrate monitoring devices described in the O&M Plan submitted to the Control Officer pursuant to subsection b. of this appendix. The monitoring devices shall measure temperatures, pressures, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly.
- (1) **ECS Operation and Maintenance Records:** On each working day that an ECS is used to comply with Section 301 of this rule, an owner or operator shall make a permanent record of the operating parameters of the key systems described in the O&M Plan. For each working day or period in which the O&M Plan requires that maintenance be performed, a permanent

record shall be made of the maintenance actions taken, within 24 hours of maintenance completion. An explanation shall be entered for scheduled maintenance that is not performed during the period designated in the O&M Plan.

(2) Other Records Required when Complying Via ECS: An owner or operator choosing to meet the requirements of Section 301 through the use of an ECS shall maintain, in addition to the monthly records required by Section 501.2 of this rule:

(a) Daily documentation showing the VOC content of the finishing material, as applied, in pounds VOC/pound solids when VOC-containing solvent or other VOC is added to the finishing material before application.

(b) Daily records showing the amount of coating, the amount of catalyst/hardener, and the amount of VOC-containing solvent, reducer, and/or diluent used.

d. Compliance Schedule for ECS: An owner or operator of a wood furniture coating facility shall have such facility in compliance per the following schedule. Total VOC emissions are the total facility-wide VOC from all operations that are vented to the ECS.

(1) Sources Emitting 50 TPY: The owner or operator of a wood furniture coating facility shall be in full compliance with all applicable requirements of this rule if such facility has applied for or received a Title V permit, its permit has a VOC-emissions limit of 50 tons (45.35 Mg) or more, or which has had an aggregate VOC emission to atmosphere after December 31, 1989, of 50.0 tons (45.35 Mg) or more in any calendar year or 300 pounds (136 kg) or more in any working day. In addition, an owner or operator shall provide the Control Officer with:

(a) Both proof of a binding contract for an ECS and a compliance plan listing dates of completion of increments of progress toward meeting the requirements of Section 301.2 of this rule.

(b) An O&M Plan for the ECS.

(2) Other Sources: The owner or operator of a wood furniture coating facility shall be in compliance with Section 301 and Section 302 of this rule, if the total VOC in each of the years 1990 through 1995 is less than 300 pounds (136 kg) in any working day and 50.0 tons (45.35 Mg) in any calendar year. In addition, the owner or operator shall provide the Control Officer with:

(a) Both proof of a binding contract for an ECS and a compliance plan, listing the dates of completing the increments of progress toward meeting the requirements of the Section 301.3 of this rule; and

(b) An O&M Plan for the ECS.

e. Test Methods for an ECS

(1) Control efficiency of an emission control device used to meet the requirements of Section 301 shall be determined according to EPA Test Method 25 - Determination of Total Gaseous Nonmethane Organic Emissions as Carbon or an applicable submethod of Method 25 (Title 40, CFR Part 60, Appendix A).

(2) EPA Test Method 18- Measurement of Gaseous Organic Compound Emissions by Gas Chromatography shall be used if specified by the Control Officer when a non-precursor

organic compound is present in the input of a control device used to meet the requirement of Section 301 of this rule.

- (3)** Capture efficiency of an emission control device used to meet the requirements of Section 301 shall be determined by mass balance in combination with ventilation/draft rate determinations done in accordance with subsection e.(4), following, or according to "Guidelines for Determining Capture Efficiency" January 9, 1995, Candace Sorrell, Source Characterization Group A, Office of Air Quality Planning and Standards, US EPA. This EPA document is available at the Maricopa County Air Quality Department.
- (4)** Ventilation/draft rates of an emission control device used to meet the requirements of Section 301 of this rule shall be determined by one or more of the following EPA Test Methods:

 - (a)** EPA Test Method 2 - Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)
 - (b)** EPA Test Method 2A - Direct Measurement of Gas Volume Through Pipes and Small Ducts
 - (c)** EPA Test Method 2C - Determination of Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts (Standard Pitot Tube)
 - (d)** EPA Test Method 2D - Measurement of Gas Volume Flow Rates in Small Pipes and Ducts

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 343
COMMERCIAL BREAD BAKERIES**

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 343
COMMERCIAL BREAD BAKERIES**

SECTION 100 - GENERAL

- 101 PURPOSE:** To limit the emission of volatile organic compounds (VOCs) from bread ovens at commercial bread bakeries.
- 102 APPLICABILITY:** The provisions of this rule shall apply only to commercial bread bakeries whose total VOC emissions exceed 25 tons per year after December 31, 1989. This rule shall not apply to any facility or equipment used exclusively for the production of bakery products leavened chemically in the absence of yeast.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply:

- 201 AFFECTED FACILITY -** With reference to a stationary source, any apparatus to which a standard is applicable.
- 202 APPROVED EMISSION CONTROL SYSTEM -** A system for reducing emissions of organic compounds, consisting of both collection and control devices which are approved in writing by the Control Officer and are designed and operated in accordance with good engineering practice.
- 203 AVERAGE DAILY EMISSIONS -** The product of the total calendar year emissions divided by the number of days the oven was employed for production during that year.
- 204 BASE YEAR -** The calendar year 1990 or any subsequent calendar year in which the average daily emissions equal or exceed 192 lbs. or more per day.
- 205 BREAD -** A perishable foodstuff prepared from yeast-leavened dough whose primary ingredients are flour, water, and yeast which is baked into loaves, buns, or rolls.

- 206 CONTROL PLAN** - A written report describing the method to be used to achieve full compliance. The control plan shall, at a minimum, contain all information required in Section 402 of this rule.
- 207 EXISTING OVEN** - Any oven which was installed before May 1, 1995.
- 208 LEAVEN** - To raise a dough by causing gas to thoroughly permeate it through the use of a fermentation-producing agent such as yeast or baking powder.
- 209 NEW OVEN** - Any oven which was installed on or after May 1, 1995.
- 210 OVEN** - A chamber used to bake by means of heat, typically from the combustion of natural gas or propane. This does not include proof boxes.
- 211 PROOF BOXES** - A warm, typically 100° Fahrenheit, humid chamber where yeast-leavened dough is allowed to rise to the volume desired for baking.
- 212 VOLATILE ORGANIC COMPOUND (VOC)** - Any organic compound, excluding the following organic compounds which have been designated by the EPA as having negligible photochemical reactivity: methane; ethane; methylene chloride (dichloromethane); 1,1,1-trichloroethane; trichlorofluoromethane (CFC-11); dichlorodifluoromethane (CFC-12); chlorodifluoromethane (CFC-22); 1,1,2-trichlorotrifluoroethane (CFC-113); 1,2-dichlorotetrafluoro ethane (CFC-114); chloropentafluoroethane (CFC-115); trifluoromethane (CFC-23); 2,2-dichloro-1,1,1-trifluoroethane (HCFC-123); 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124); 1,1-dichloro-1-fluoroethane (HCFC-141b); 1-chloro-1,1-difluoroethane (HCFC-142b); pentafluoroethane (HFC-125); 1,1,2,2-tetrafluoroethane (HFC-134); 1,1,1,2-tetrafluoroethane (HFC-134a); 1,1,1-trifluoroethane (HFC-143a); 1,1-difluoroethane (HFC-152a); parachlorobenzotrifluoride (PCBTf); cyclic, branched, or linear completely methylated siloxanes; all completely fluorinated, completely saturated: alkanes, ethers and tertiary amines; sulfur-containing perfluorocarbons with no unsaturations, no hydrogen, and with sulfur bonds only to carbon and fluorine.

Note¹

¹ This note is not part of Rule 343, but is included for the reader's convenience. The current list of exempt organic compounds is in Rule 100, Section 200, in the definition of Non-Precursor Organic Compound.

SECTION 300 - STANDARDS

- 301 LIMITATIONS - EXISTING BAKERY OVENS:** On or after November 15, 1995, no person shall use an existing oven, with annual VOC emissions of 25 tons and/or a base year average daily VOC emissions of greater than 192 lbs., unless the VOC emissions from the oven are reduced by at least 81 percent. This may be accomplished through the use of an approved emission control device or bread-making and/or baking process changes.
- 302 LIMITATIONS - NEW OR MODIFIED BAKERY OVENS:** No person shall operate a new or modified oven with potential, annual VOC emissions of 25 tons and/or average daily VOC emissions of 192 lbs., unless the VOC emissions from the oven are reduced by at least 81 percent. This may be accomplished through the use of an approved emission control device or bread-making and/or baking process changes. A person choosing to comply with this rule through the use of bakery process changes shall use a VOC E.F. value of 5.5 pounds per ton (Reference Figure 1.)
- 303 OPERATION AND MAINTENANCE (O&M) PLAN:** The owners or operators of an approved emission control system used to meet the requirements of this rule shall provide the Control Officer with an O&M Plan. This Plan shall specify key system operating parameters, such as temperatures, pressures and/or flow rates, necessary to determine compliance with this rule and describe in detail procedures to maintain the approved emission control system. The Control Officer's written approval of this Plan and the implementation of this Plan shall be required for compliance with this rule to be achieved.

Note²

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

Note³

- 401 COMPLIANCE SCHEDULE:**
- 401.2** By May 1, 1995, any person subject to Section 301 shall submit for the Control Officer's approval an emission control plan describing the method to be used to achieve full compliance by November 15, 1995. The plan shall, at a minimum, include all information required in Section 402 of this rule. The Control Officer may require a person submitting such emission control plan to submit subsequent reports on progress in achieving compliance.
- 402 INFORMATION REQUIRED TO BE INCLUDED IN AN EMISSION CONTROL PLAN:**

² This note is not part of Rule 343, but is included for the reader's convenience. An "approved emission control device" is the same as an "approved emission control system" as defined in Section 202 of this rule. The abbreviation "E.F." means "emission factor".

³ This note is not part of Rule 343, but is included for the reader's convenience. There is a formatting error: there is no subsection 401.1; subsection 401.2 should be simply Section 401.

- 402.1** Name(s), address(es), and phone number(s) of the owner of the bakery, of person(s) responsible for the preparation, submittal and implementation of the emission control plan and of person(s) responsible for the baking operations; and
- 402.2** Complete and accurate calculations of the bakery's base year total VOC emissions from each affected oven by following emissions inventory calculations provided by the equation in Figure 1; and
- 402.3** Complete and accurate calculations of the bakery's total VOC emissions from each affected oven after the proposed breadmaking and/or baking process changes found in the emission control plan. These calculations shall be done by following the emissions inventory estimation provided by the equation in Figure 1. The emission control plan shall demonstrate that the reduction in emissions is a result of the breadmaking and/or proposed baking process changes' effect on the variables in the equation in Figure 1; or
- 402.4** Complete and accurate calculations of the bakery's total VOC emissions from each affected oven based on the proposed emission control system described in the emission control plan. The emission control plan shall also specify dates for completing increments of progress, such as the contractual arrival date of new control equipment.
- 403 EFFECTIVE DATE:** The provisions of this rule shall become effective on May 1, 1995.

SECTION 500 - MONITORING AND RECORDS

- 501 PROVIDING AND MAINTAINING MONITORING DEVICES:** Any person operating an approved emission control system pursuant to this rule shall properly install and maintain in calibration, in good working order and in operation, devices described in an approved O&M Plan for indicating temperatures, pressures, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly and is properly maintained.
- 502 RECORDKEEPING AND REPORTING:** Any person subject to this rule shall maintain records which comply with the following requirements. Any records required by this rule shall be kept in a legible, consistent and complete manner.
- 502.1** Records for operation and maintenance of an approved emission control system shall include a record of the times an approved emission control system is operating, daily records of the O&M Plan's key system operating parameters and a log of all maintenance performed according to the O&M Plan.

502.2 Records for the institution shall include:

- a. Formula number;
- b. Initial baker's percent of yeast, Y_i (nearest one-tenth of a percent);
- c. Total ferment time (in hours, nearest one-tenth of an hour - begins with first mixing of yeast with the dough or sponge);
- d. Yeast spike as baker's percent of yeast (nearest one-tenth of a percent);
- e. Spike time (in hours, nearest one-tenth of an hour);
- f. Ethanol emission factor (lbs/ton);
- g. Daily records of production (tons) and corresponding formula;
- h. Quarterly records of ethanol emissions (tons).

Note⁴

503 RECORDS RETENTION: Copies of control plans, operation and maintenance records and any other documentation required by this rule shall be retained by the permittee for at least three years.

504 COMPLIANCE DETERMINATION - TEST METHODS: When more than one test method is permitted for a determination, an exceedance of the limits established in the rule determined by any of the applicable test methods constitutes a violation of this rule.

504.1 Measurements of VOC emissions subject to Section 301 and 302 of this rule shall be conducted in accordance with EPA Methods 18 and/or 25 and/or its submethods (40 CFR 60, Appendix A).

504.2 Ventilation/draft rates shall be determined by EPA Methods 2, 2a, 2c, and 2d.

Figure 1

$$\text{VOC E.F.} = .95Y_i + .195t_i - .51S - .86t_s + 1.90$$

where VOC E.F. = pounds of VOC per ton of baked bread

⁴ This note is not part of Rule 343, but is included for the reader's convenience. Total ferment time ends at the time the bread enters the oven, as does spike time, also.

Y_i = initial baker's percent of yeast to the nearest tenth of a percent

t_i = total yeast action time in hours to the nearest tenth of an hour

S = final (spike) baker's percent of yeast to the nearest tenth of a percent

t_s = spiking time in hours to the nearest tenth of an hour

Last Formatted - Fall 1997

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 344
AUTOMOTIVE WINDSHIELD WASHER FLUID**

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MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 344
AUTOMOTIVE WINDSHIELD WASHER FLUID

SECTION 100 - GENERAL

- 101 PURPOSE:** To limit the emission of volatile organic compounds (VOCs) into the ambient air from automotive windshield washer fluid products.
- 102 APPLICABILITY:** This rule applies to any automotive windshield washer fluid product sold or otherwise distributed within Maricopa County.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply:

- 201 AUTOMOTIVE WINDSHIELD WASHER FLUID (WINDSHIELD FLUID)** - Any liquid designed for use in a motor vehicle windshield washer fluid system either as an anti-freeze or for the purpose of cleaning, washing, or wetting windshield(s), except any such liquid which is placed in a new motor vehicle at the time the vehicle is manufactured.
- 202 LABEL** - Any written, printed, or graphic matter affixed to, applied to, blown into, formed, molded into, embossed on, or appearing upon any product container or package, for purposes of branding, identifying, or giving information with respect to the product or the contents of the package.
- 203 NON-PRECURSOR ORGANIC COMPOUND** - Any of the organic compounds which have been designated by the EPA as having negligible photochemical reactivity. EPA designates such compounds as "exempt." A listing of these compounds is found in Rule 100.
- 204 PERCENT BY WEIGHT** - The total weight of a substance expressed as a percentage of the net weight of the product exclusive of the container or package as calculated according to the following equation:

$$\text{Percent by Weight} = \frac{B \times 100}{A}$$

Where:

A = net weight of unit (excluding container and packaging).

B = weight of VOCs, as defined in Section 205 of this rule.

- 205 VOLATILE ORGANIC COMPOUND (VOC)** - Any organic compound which participates in atmospheric photochemical reactions, except non-precursor organic compounds.

SECTION 300 - STANDARDS

- 301 LIMITATIONS - PERCENT VOC BY WEIGHT:** No person shall sell, offer for sale, or supply in Maricopa County, Arizona any automotive windshield washer fluid product which, at the time of sale, offering, or supply, contains VOCs in excess of ten percent by weight, unless the person can demonstrate that the windshield fluid meets the exemption in Section 302, or the fluid is destined for use outside Maricopa County, as provided for by the exemption in Section 303.

- 302 EXEMPTION - CONCENTRATED WINDSHIELD FLUID PRODUCTS:** A concentrated windshield fluid (concentrate) is exempt from Section 301 of this rule if the label provides all of the following information:

- a. That the windshield washer fluid is a concentrate;
- b. That the contents must be diluted prior to use;
- c. Specific, clearly designated dilution directions;
- d. That the freezing point of the undiluted product is not described on the label; and,
- e. That the dilution ratio of the concentrate shall yield a solution that never exceeds ten percent VOC by weight.

- 303 EXEMPTION - OUTSIDE OF MARICOPA COUNTY:** A person may demonstrate that windshield fluid sold, offered for sale or supplied within Maricopa County is destined for use outside Maricopa County by providing the following documents or information:

- a. A bill of lading, or
- b. A properly executed, signed transfer agreement, such as a warehouse receipt, orders for the delivery of goods, and any other documents common in such transactions which in the regular course of business or financing are treated as adequately evidencing that the person in possession of it is entitled to receive, hold and dispose of the document and the goods it covers.

SECTION-400 - ADMINISTRATIVE REQUIREMENTS (RESERVED)

SECTION 500 - MONITORING AND RECORDS

- 501 COMPLIANCE DETERMINATION:** Compliance determination may be demonstrated by either one of the options listed below. Copies of the test method listed in subsection 501.2 and found in Appendix A are available at the Maricopa County Environmental Services Department, 1001 North Central Avenue, Phoenix, AZ, 85004-1942.
- 501.1** Formulation data based upon written certification from the manufacturer specifying the actual weight percentage of VOCs in the windshield washer fluid.
- 501.2 Test Method:** Maricopa County Reference Method #100, which is entitled: "Total Organic Carbon for Windshield Washer Fluids," as found in Appendix A of this rule.
- 501.3 Contested Results:** The Control Officer may direct the owner or operator to perform the testing method listed in subsection 501.2 if there is reason to believe that the formulation information is incorrect. If there is an inconsistency between the formulation certification and the actual test method results, the test method shall prevail as the definitive method in all cases.

APPENDIX A

Test Method #100 for Determining Total Organic Carbon for Windshield Washer Fluids:

1.0 APPLICABILITY AND PRINCIPLE

1.1 Applicability. This method is applicable for the determination of organic carbon in diluted windshield washer fluids.

1.2 Principle. Organic carbon in a sample is converted to carbon dioxide (CO₂) by catalytic combustion or wet chemical oxidation. The CO₂ formed can be measured directly by an infrared detector or converted to methane (CH₄) and measured by a flame ionization detector. The amount of CO₂ or CH₄ is directly proportional to the concentration of carbonaceous material in the sample.

2.0 SENSITIVITY AND INTERFERENCES

2.1 Sensitivity. The method is most applicable to measurement of organic carbon above 1mg/L.

2.2 Interferences. All distilled water used in making and/or diluting the samples must be acidified with concentrated phosphoric acid H₃PO₄ (1 mL of H₃PO₄/1 L of water) and purged with inert gas (He, N₂...) for at least 30 minutes. Inject this water into the Total Organic Carbon analyzer and determine the total concentration (ppm C) of the blank. This method is sufficient for removing most interferences due to inorganic carbon in the water. Do not purge the sample with an inert gas since purging may result in the loss of volatile organic substances.

3.0 APPARATUS

3.1 Blender. Waring-type or similar, for blending or homogenizing samples.

3.2 Total Organic Analyzer. An analyzer capable of measuring carbonaceous material in liquid samples. Consideration should be given to the types of samples to be analyzed, the expected concentration range, and forms of carbon to be measured.

3.3 Volumetric Flasks And Volumetric Pipets. For preparing standard solutions and the windshield washer fluid solutions.

3.4 Glass Bottles. For sample collection and storage.

4.0 REAGENTS

4.1 Water (H₂O). Distilled water used in preparation of standards and for dilution of samples should be ultra pure to reduce the carbon concentration of the blank. Carbon dioxide-free, double distilled water is recommended. Ion exchanged waters are not recommended because of the possibilities of contamination with organic materials from the resins.

4.2 Potassium Hydrogen Phthalate (HOOC₆H₄COOK), Stock Solution. 1000 mg carbon/L. Dissolve 0.2128g of potassium hydrogen phthalate (Primary Standard Grade) in distilled water and dilute to 100.0 mL.

4.3 Potassium Hydrogen Phthalate, Standard Solutions. Prepare standard solutions from the stock solution by dilution with distilled water.

4.4 Blank Solution. Use the same distilled water (or similar quality water) used for the preparation of the standard solutions.

5.0 SAMPLE PREPARATION

5.1 Prepare the windshield washer fluid according to the manufacturer's directions.

5.2 Dilute the windshield washer fluids with H₂O to be within the calibrated range of the instrument before analyzing. Dilutions of 1 to 100 or greater may be necessary before windshield washer solutions can be analyzed.

6.0 PROCEDURE

6.1 Follow instrument manufacturer's instructions for calibration, procedure, and calculations.

6.2 Calibrate using at least 3 standards. The set of calibration standards should consist of one below the expected concentration, one above the expected concentration, and approximately at the expected concentration.

6.3 Calculate and report the results as mg C/g sample.

8.0 BIBLIOGRAPHY OF REFERENCE DOCUMENTS: The Control Officer will rely on the following background materials when questions arise in the review and implementation of the test method listed in subsection 501.2:

1. Annual Book of ASTM Standards, Part 31, "Water", Standard D 2574-79, p469, (1976).
2. Standard Methods for the Examination of Water and Wastewater, 14th Edition, p 532, Method 505, (1975).
3. Method 415.1, Methods for Chemical Analysis of Water and Wastes, Environmental Monitoring and Support Laboratory, USEPA, Cincinnati, OH 45268, EPA 600/4-79-020.
4. Evaluation of Method 415.1 for Off-set Lithographic Solutions, September, 1992.

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 346 COATING WOOD MILLWORK

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 346
COATING WOOD MILLWORK**

SECTION 100 - GENERAL

- 101 PURPOSE:** To limit emissions of volatile organic compounds from the surface preparation and coating of wood millwork.
- 102 APPLICABILITY:** The provisions of this rule apply to any facility in Maricopa County applying finishing material to millwork included under SIC code 2431 made of wood or wood-derived material. Simplified provisions of Appendix B in this rule may be used by facilities which agree to a permit limit of less than 10 tons of VOC emissions per year. Sources emitting less than 2 tons of VOC per year may be allowed exemptions pursuant to subsection 307.2c.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply:

- 201 ADHESIVE -** Any substance, usually having a fluid phase during application, used principally to bond two or more surfaces into close proximity with one another.
- 202 AEROSOL-SPRAY COATING -** A coating which is sold in a hand-held, pressurized, non-refillable container, usually of less than 22 fluid ounces (0.66 liter) capacity, and which is expelled from the container in a finely divided form when a valve on the container is depressed.
- 203 AIR-ATOMIZED SPRAY (GUN) -** Equipment used to apply coatings in which the chief means of atomizing the coating is via pressurized air which also mixes into the cloud of coating particles after expulsion from a spray nozzle.
- 204 ARCHITECTURAL COATING -** Any coating applied to stationary structures and their appurtenances, to mobile homes, to pavements or to curbs.

- 205 BASECOAT** - A coat of colored material, usually opaque, that is applied before graining inks, glazing coats, or other high-hiding finishing materials. A basecoated surface usually receives a topcoat also.
- 206 COATING** - Any liquid, fluid, or mastic composition which is converted to a solid (or semi-solid) protective, decorative, or adherent film or deposit after application to a substrate as a thin layer.
- 207 CONVENTIONAL AIR-ATOMIZED SPRAY (SYSTEM)** - A spray which is atomized with air in a system designed to exceed 25 psig (1.7 Bar), as measured according to subsection 502.2, and which is not used with an electrostatic transfer system.
- 208 CUSTOM REPLICA MILLWORK** - Millwork products individually produced or repaired after an order has been received from a client specifying a particular style and period, using both the style and the methods of construction, including materials, joinery, and finishes, which are authentic to the period.
- 209 DAY** - A period of 24 consecutive hours beginning at midnight.
- 210 DILUENT** - For the purpose of this rule, any fluid in or added to a coating such as thinner, retarder, reducer, solvent, or drying accelerator which solubilizes, adjusts concentration, viscosity, flow, or drying rates and which evaporates as the coating film solidifies and cures.
- 211 ELECTROSTATIC APPLICATION** - A method of applying coating by electrically charging coating droplets or particles causing their deposition onto a substrate by electrostatic attraction.
- 212 EMISSION CONTROL SYSTEM (ECS)** - A system for reducing emissions of organic compounds, consisting of both collection and control devices which are approved in writing by the Control Officer and are designed and operated in accordance with good engineering practice.
- 213 FACILITY** - For the purpose of this rule, all the pollutant-emitting activities belonging to SIC code 2431, which are located on one or more contiguous or adjacent properties, and under the control of the same person or persons under common control.
- 214 FAUX FINISH** - A finish intended to simulate a surface other than wood, including, but not limited to, stone, sand, metal, fur and leather.
- 215 FINISHING MATERIAL** - A coating other than one designed solely or principally as an adhesive, temporary maskant, and/or preservative. For millwork, finishing

materials include, but are not limited to, topcoats, sealers, primers, stains, basecoats, groundcoats, washcoats, enamels, toners, glazes, and graining inks.

- 216 GROUNDCOAT** - A colored coating applied to wood-product substrate, which completely hides the color of the substrate in a single coat.
- 217 LOW PRESSURE SPRAY GUN** - An air-atomized spray gun which by design functions best at tip pressures below 10 psig (0.7 bar) measured according to subsection 502.2 of this rule, and for which the manufacturer makes no claims to the public that the gun can be used effectively above 12 psig (0.8 bar).
- 218 NON-OPAQUE** - A finish or coating which does not meet the definition of opaque as found in Section 221 of this rule. This includes coatings called "clear" by the wood-products coating industry.
- 219 NONPERMANENT FINAL FINISH** - A material such as wax, polish, non-oxidizing oil or similar substance which retains its effect only temporarily and must be periodically reapplied to a surface to maintain or restore the material's intended effect.
- 220 NON-PRECURSOR ORGANIC COMPOUND** - Any of the following organic compounds which have been designated by the EPA as having negligible photochemical reactivity: acetone; methane; ethane; methylene chloride (dichloromethane); 1,1,1-trichloroethane; trichlorofluoromethane (CFC-11); dichlorodifluoromethane (CFC-12); chlorodifluoromethane (HCFC-22); 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113); 1,2-dichlorotetrafluoroethane (CFC-114); chloropentafluoroethane (CFC-115); trifluoromethane (HFC-23); 2,2-dichloro-1,1,1-trifluoroethane (HCFC-123); 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124); 1,1-dichloro-1-fluoroethane (HCFC-141b); 1-chloro-1,1-difluoroethane (HCFC-142b); pentafluoroethane (HFC-125); 1,1,2,2-tetrafluoroethane (HFC-134); 1,1,1,2-tetrafluoroethane (HFC-134a); 1,1,1-trifluoroethane (HFC-143a); 1,1-difluoroethane (HFC-152a); parachlorobenzotrifluoride (PCBTF); perchloroethylene (tetrachloroethylene); 3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca); 1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb); 1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43-10mee); cyclic, branched or linear completely methylated siloxanes; all completely fluorinated, completely saturated: alkanes, ethers and tertiary amines; sulfur-containing perfluorocarbons with no unsaturations, no hydrogen, and with sulfur bonds only to carbon and fluorine.
- 221 OPAQUE COATING** - Any functional film building coating which completely hides all grain, marking, shade, and color of the substrate under all lighting conditions including the brightest, direct sunlight.

- 222 REPAIR COATING** - A coating used to recoat portions of a previously coated product to cover mechanical damage to that previous coating following normal painting operations.
- 223 RESTRICTED-USE GUN** - Any spray gun which atomizes coating using compressed air, such that in normal use or a use advertised by the manufacturer or distributor, the tip pressure exceeds 12 psig (0.8 bar) in measurements done pursuant to subsection 502.2. Restricted-use gun also includes, but is not limited to, all conventional air-atomized spray guns.
- 224 SEALER, PRIMER, OR GROUNDCOAT** - A film-building finishing material used to seal the pores of wood or wood-derived material before additional coats of finishing material are applied. Finishing materials used primarily to alter the appearance or color of the substrate, such as stains, washcoats, glazes, inks, and toners, are not sealers.
- 225 SINGLE RESIN-LAYER FINISH** - A completed, consumer-ready finish, which has received only one application of resin-based coating serving as both sealer and topcoat, and having a total average dry finish thickness from the top of the finish to the surface of the wood-product substrate not exceeding 3 mils (0.076 mm) before sanding, as determined pursuant to the test method in subsection 502.3. If a washcoat is also used, the finish is not a single resin-layer finish.
- 226 STAIN** - A coating, formulated to enhance wood grain and change wood color without concealing surface grain. Stain includes sap stain, toner, non-grain-raising (NGR) stain, equalizer stain, no wipe stain, penetrating stain, wiping stain, and glaze. Stain excludes sealers and topcoats.
- 227 STRIPPABLE COATING** - A coating which is applied to spray booth surfaces to receive the overspray and protect the substrate, and which is designed to be readily pulled off in strips or sheets and disposed of.
- 228 STRIPPING OPERATION** - Any operation in which organic solvent is used to remove coating from a substrate.
- 229 TOPCOAT** - The last permanent, functional film-building finishing material applied to a manufactured wood-product. When the wood-product substrate is already sealed with sealer, any further coats that build a functional film are topcoats. Finishing materials used primarily to alter the appearance or color of the substrate, such as stains, washcoats, glazes, inks, and toners are not topcoats. A nonpermanent final finish is not a topcoat.
- 230 TOUCH UP COATING** - A coating used to cover minor coating imperfections after the main coating operation.

- 231 TRANSFER EFFICIENCY** - The ratio of the weight of coating solids deposited on an object to the total weight of coating solids used in a coating application step or series of such steps, expressed as a percentage.
- 232 VOC-BORNE COATING** - A coating in which the volatile portion contains, by weight, more VOC than water.
- 233 VOC-SOLVENT** - A solvent or diluent, used to solvate, dilute, reduce, thin, clean or strip, in which the weight-percent of VOC exceeds the weight percent of water.
- 234 VOLATILE ORGANIC COMPOUND (VOC)** - Any organic compound which participates in atmospheric photochemical reactions, except a non-precursor organic compound.
- 235 WASHCOAT** - A transparent special purpose coating having a solids content by mass of 12.0 percent or less, and which is used to seal wood-product surfaces for any of the following purposes: to prevent undesired staining, to control penetration of subsequent finishes, to provide a barrier when paper laminates are applied to the wood-product, to seal glazes, and to improve adhesion of a waterborne topcoat.
- 236 WOOD MILLWORK** - All millwork made of wood-product that is included in Standard Industrial Classification (SIC) industry number 2431. This includes, but is not limited to, shutters, doors, windows and their associated woodwork.
- 237 WOOD-PRODUCT** - Wood or wood-derived material, such as chipboard, particle board, fiberboard, pressed board, paper, and any other material derived from wood, bamboo, cane, or rattan, that retains some of the physical structure(s) of such original material(s), even if only at a microscopic level.
- 238 WORKING DAY** - A day, or any part of a day, in which a facility is engaged in manufacturing.

SECTION 300 - STANDARDS

301 VOC CONTENT:

301.1 Coating VOC Limits: No person shall apply topcoats, sealers or opaque coatings to wood-product surfaces on millwork unless VOC content is limited to the following, less water and non-precursor organic compounds:

a. General VOC Limits of Coatings

5.45

<u>CATEGORY</u>	<u>g/l</u>	<u>lb/gal</u>
Non-opaque topcoat	635	5.29
Non-opaque sealer	645	5.38
Non-opaque acid-cured, alkyd amino topcoat	655	
Non-opaque acid-cured, alkyd amino vinyl sealer	680	5.66
Opaque: Topcoat, Sealer, Primer, Groundcoat, Basecoat, or Stain.	610	5.10

b. VOC Tradeoff Options: (Acid-cured, alkyd amino coatings are exempt from gun tagging requirements.)

- (1) **Lower VOC Topcoat And Unlimited Sealer:** A sealer has no VOC limit if all of its topcoat(s) have no more than 3.83 lb VOC/gal (460 g/l).
- (2) **Lower VOC Sealer and Higher VOC Topcoat:** A sealer containing no more than 275 g VOC/liter (2.3 lb/gal) may be covered by a topcoat over 635 g/l containing up to 680 g VOC/liter (5.66 lb/gal), if the gun applying the topcoat is properly tagged. Requirements for gun tagging are in Section 403.
- (3) **Single Application Finish:** A coating over 645 g/l which qualifies as a single resin-layer finish pursuant to Section 225 may contain up to 680 g VOC/liter (5.66 lb/gal) if the gun applying the coating is properly tagged. Requirements for gun tagging are in Section 403.

c. Coatings with no VOC limits: Non-opaque stains, washcoats, glazes, toners, inks and other non-opaque coatings not specified in subsection 301.1 have no VOC limits.

301.2 Strippable Booth Coatings: No person shall use a strippable booth coating containing more than 360 g VOC/liter (3.0 lb VOC/gal), as applied.

301.3 Emission Control System (ECS) As An Alternative Control: A facility may meet the VOC limits of either or both Subsections 301.1 and 301.2 if the owner or operator complies with all provisions in this rule's Appendix A and with the other applicable provisions of this rule.

301.4 Smaller Source Option: The owner or operator of a facility that has emitted 2 or more tons but less than 10 tons per year of VOC from all wood coating and associated operations is exempted from all provisions of Sections 300, 400, and 501 (but not Sections 100, 200, and 502) if all provisions are complied with in this rule's Appendix B. Sources emitting less than 2 tons of VOC per year may be allowed exemptions pursuant to subsection 307.2c.

302 LIMITATION OF CONVENTIONAL AIR-ATOMIZED SPRAY AND OTHER SPRAY METHODS ATOMIZING WITH HIGH-PRESSURE AIR:

302.1 Evidence of Transfer-Efficient Spray Equipment: A person shall not spray millwork with coating exceeding 4.29 lb VOC/gal (515 g VOC/liter) without providing evidence of possession and use of a low pressure spray gun or system, an electrostatic system, or a system that atomizes principally via hydraulic pressure, including air assisted airless and ultra-low-volume-air assisted technologies. Such requirement does not apply to any facility, activity, or person exempted by Section 307 of this rule nor to any specific system which is approved by the Administrator as having a transfer efficiency consistently exceeding 64%.

302.2 Limitation Of Air-Atomized Spray Other Than Low Pressure: No person shall use a conventional air-atomized spray gun or other restricted use gun, except:

- a. To apply finishing materials that have a VOC content not exceeding 4.29 lb/gal (515 g/liter).
- b. If VOC emissions from the finishing application station, employing such a gun, are captured and directed to an ECS complying with the provisions of Appendix A.
- c. For touch-up and repair only under either of the following conditions:
 - (1) such application is performed after completion of the entire finishing operation; or

- (2) such application is performed after applying stain, and before any further coating, by equipment having a total capacity not exceeding 2.1 gallons (8 liters).

d. To apply less than 5% of all coating, pursuant to subsection 307.2d.

303 OPERATION AND MAINTENANCE: Any person subject to this rule shall operate and maintain in proper working order all process equipment in which VOC-containing materials are used or stored.

304 CLEANUP AND CLEANING OF SUPPLY AND APPLICATION EQUIPMENT:

304.1 Booth cleaning: No person shall clean spray booth components using a solvent containing more than 8.0 percent by weight of VOC (including water and non-precursor compounds) except for conveyors, continuous coaters and their enclosures, and metal filters. If the spray booth coating is being replaced, a person shall use no more than 1.0 gallon (3.8 liters) VOC-solvent to clean the booth.

304.2 A person shall collect all solvent(s) used to clean spray guns and shall pump or drain all solvent used for line cleaning into non-leaking container(s). Such containers shall be immediately closed or covered after all the solvent has been collected, and shall remain so except when in use.

305 HANDLING AND DISPOSAL OF VOC:

305.1 Use and Storage: A person shall cover and keep covered each VOC-containing material which is not currently in use. A person shall store finishing and cleaning materials in closed or covered containers.

305.2 Disposal Of VOC And VOC-Containing Material: A person shall store all VOC-containing materials intended for disposal including, but not limited to, rags, waste coatings, waste solvents and their residues, in closed containers which are legibly labeled with their contents and which remain covered when not in use.

306 STATEMENT OF VOC CONTENT: Effective May 3, 1996, a manufacturer of wood coatings which are subject to this rule shall provide on each coating container or as an accompanying specification of each coating container a designation of VOC content in grams of VOC per liter (g/l) of coating or pounds of VOC per gallon (lb/gal) of coating, less water and non-precursor organic compounds. This requirement shall not apply to containers having a capacity of one liter (1.05 quart) or less.

307 EXEMPTIONS:

307.1 Total Exemption: The following materials are exempt from this rule: adhesives, architectural coatings, printing ink, and coatings not applied on or over a wood-product substrate.

307.2 Partial exemptions

a. Touch-up cans: Coatings in aerosol spray cans not exceeding 22 fl. oz. (0.66 liter) capacity used exclusively for touch-up and/or repairs are subject only to the recording requirements of subsections 501.a, b., and c.¹

b. VOC and Spray Exclusions: The following shall be exempt from subsection 301.1 and Section 302 of this rule:

(1) Refinishing, Replacement, And Custom Replica Millwork Operations: Any refinishing operation necessary for preservation, to return millwork to original condition, to replace missing millwork items to produce a matching set, or to produce custom replica millwork.

(2) Limited Amounts: The use of the following coating types when the annual total use of all such types together is less than 948 liters (250 gal): prepackaged aerosol spray cans which are not used for touch-up or repair; metal leaf finishes; and faux finishes.

c. Small Source Status: A millwork coating facility which at any time demonstrates that it currently meets both of the following requirements is exempt from all provisions of this rule except for Section 303 "Operation and Maintenance" and Section 305 "Handling and Disposal of VOC". An operator of such an exempted facility shall keep on the premises current records of all coating related materials currently used, and their VOC content. For this purpose, a complete, updated set of receipts/invoices and Material Safety Data Sheets (MSDSs) will suffice if each receipt/invoice is retained on the premises at least two years.

(1) Facility records demonstrate that no more than a total of 55 gallons (209 liters) of VOC-borne wood-product coatings plus

¹ This errata note is not part of Rule 346. For the reader's convenience, the reference to "subsections 501.a., b., and c." is incomplete. The correct reference should be "subsections 501.1a., 501.1b.(2), 501.1c., 501.2b.(2), 501.2b.(5), and 501.3." The reference will be corrected for the next revision of this rule.

VOC-solvent, including wood furniture coating operations, are used in any month and that such monthly total divided by that month's number of days of coating application does not exceed 3.0 gallons (11.4 liters); and

- (2) The facility emits less than 1814 kg (4000 lb) VOC, facility-wide per year from all wood-product coating operations including VOC in both solvent-borne and water-borne coatings, all VOC diluent added to coatings, all solvent cleaning and stripping, and VOC-solvent used for coating equipment cleanup.

d. Using Restricted Use Guns; Red Tag: In addition to the uses of restricted-use guns allowed under subsections 302.2 a., b., and c., a person may use a conventional air-atomized or other restricted use gun to apply coatings exceeding 4.29 lb VOC/gal (515 g/l) if all the following conditions are met:

- (1) The volume of such coating applied in this way is less than 5% of the total volume of coating applied at the facility;
- (2) Each gun has a red tag when spraying materials exceeding 4.29 lb VOC/gal. Requirements for gun tagging are in Section 403;
- (3) A log shall be kept pursuant to subsection 501.2c. of the amount of coating used by each such gun. This shall be done daily or each time coating is added to the gun's coating reservoir; and semi-annual calculation shall be made, pursuant to subsection 501.2.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE: The following schedule applies, with exceptions for operations using an Emission Control System provided in Appendix A.

401.1 Sources Emitting 50 TPY: Any facility which has applied for or received Title V status, has in its permit an annual VOC limit of 50 tons or more, or which has had an aggregate VOC emission to atmosphere after December 31, 1989, of 50.0 tons (45.35 Mg) or more in any calendar year or 300 pounds (136 kg) or more in any day, emitted from wood coating operations, including coating wood furniture, and from associated cleaning processes shall by May 3, 1996, be in compliance with all requirements of this rule and

have submitted a Control Plan. The Control Plan shall set forth the maximum VOC contents and provide a copy of the documentation showing how the coating-as-applied values were determined.:

- 401.2 Other Sources:** The schedule follows for any wood millwork facility with total VOC emissions to atmosphere in each of the years 1990 through 1995 of less than 300 pounds (136 kg) in any day and 50.0 tons (45.35 MG) in any calendar year, emitted from wood coating operations, including coating wood furniture, and from associated cleaning processes:
- a. A facility, for which an owner or operator chooses to meet the requirements of Section 301 by using compliant coatings, shall be in compliance with all applicable provisions of this rule, except for Section 301 and Section 302 by May 3, 1996. Such facility shall be in compliance with Section 301 and Section 302 of this rule by November 15, 1996.
 - b. **Control Plan:** A facility which has emitted more than 25 tons of VOC from coating operations in any of the years 1993 through 1995 must submit a Control Plan by August 1, 1996, setting forth the maximum VOC content and copies of the documentation showing how the coating-as-applied values were determined.

402 REGULATORY CLARIFICATION

- 402.1 Status With Respect To Rules 330 And 336:** No wood millwork coating operation is subject to Rule 330 or to Rule 336.
- 402.2 Component Materials That Were Subject To Prior Regulation:** The regulatory status of facilities, owners or operators is not affected by the fact that component materials, such as wood composites or paneling, may have been subject to Reasonably Available Control Technology (RACT) or other regulatory requirements in their original manufacture, before their subsequent use by a facility in Maricopa County.
- 402.3 Other Rules:** Nothing in this rule exempts a person from complying with the NESHAP (National Emission Standards for Hazardous Air Pollutants) for coating wood furniture and fixtures or from complying with any other applicable Federal, states, and local laws or regulations.
- 402.4 Coating Over Wood Coating(s) The Same As Coating Onto Wood:** The VOC-limits for finishing materials given in subsection 301.1 of this rule apply to such coatings whether applied directly onto any area of wood-

product substrate or on any intermediate layer(s) of coating on the wood-product substrate.

402.5 Opaque Coatings:

- a. Anti-circumvention:** If a completed finish is opaque but, by themselves, neither the topcoat nor the basecoat nor the primer/sealer is opaque, at least one of such coatings shall not exceed 5.1 lb VOC/gal (610 g VOC/liter) as applied.
- b. Confirmation of opaqueness:** In a dispute between the Control Officer and an owner or operator as to whether a coating, which visually appears opaque to the Control Officer on a particular millwork surface, is opaque and therefore shall not exceed 5.1 lb VOC/gal (610 g VOC/liter) as applied, the finish shall be judged opaque if either the coating is described as opaque by the manufacturer or the material has a contrast ratio exceeding 84% at 1 dry mil (0.025 mm) of coating thickness.

403 GUN TAGGING REQUIREMENTS

403.1 An owner or operator shall use a correctly colored 4 square-inch vivid, durable tag, sticker, or painted emblem/label visible on the gun or within 3 ft of the gun on the gun's hose to meet the tagging/labeling requirements of subsections 301.1b. and 307.2d.

403.2 Tagging Summary: Guns shall be tagged with the designated color for the following coating content or gun-type situations; (each VOC content is less water and non-precursor organic compounds):

- a. A Red Tag Or Label For VOC Tradeoff Option in Subsection 301.1b.** (Acid-cured, alkyd amino conversion varnishes are exempt from this subsection 403.2a.)
 - (1)** On the gun applying topcoat above 5.29 lb VOC/gal (635 g/l) over sealer not exceeding 2.30 lb VOC/gal (275 g/l). [Reference subsection 301.1b.(2)].
 - (2)** On the gun applying a single application finish exceeding 5.38 lb VOC/gal (645 g/l). [Reference subsection 301.1b.(3)].
- b. Using a Conventional or other Restricted Use Gun:** A red tag when applying coating over 4.29 lb VOC/gal (515 g/l) that is not for repair or touch-up. (Ref. subsection 307.2d.)

SECTION 500 - MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING: An owner or operator subject to this rule shall keep the following records and lists in a consistent and complete manner and shall make them available to the Control Officer without delay during normal business hours. Each record shall be maintained for a minimum of five years.

501.1 Current List:

- a. **VOC-containing materials:** A current list of all VOC-containing materials shall be maintained which contains the name or code and the VOC content of each. Any qualified single resin-layer finish shall be identified as such.
- b. **How to express VOC content:**
 - (1) **Topcoats, Sealers, and Strippable Booth Coatings:** Two VOC-content values must appear for each topcoat, sealer, and booth coating: both grams VOC/liter (lb VOC/gal) *including* water and non-precursor organic compounds, *and* grams/liter *less* water and non-precursor organic compounds.
 - (2) **Other:** Use grams/liter (or lb/gal) for both coatings that are not sealers, topcoats, nor booth coatings and for non-coatings such as reducers, thinners, cleaners, etc.
- c. **Acceptable Format:** VOC-containing materials shall be listed legibly and completely. The following is an example of an acceptable method:
Example: Identify and list each VOC-containing material in the following 6 categories: 1. topcoats; 2. sealers; 3. catalyst/hardeners; 4. diluents, such as reducers, coating solvents and thinners; 5. cleaning and stripping solvents; and 6. other VOC-containing materials. Next to each, record the VOC-content found on the container, an MSDS, an invoice, or other source.
- d. **Mix ratios:** A current list shall be maintained of the manufacturer's recommended mix ratio of components, including but not limited to adding reducers and catalyst/hardeners, except when the manufacturer has no recommendations for any additions.

501.2 Schedule For Recording Material Usage:

- a. **Daily Updates For Non-Compliant Material:** Daily usage quantities of each topcoat, sealer or booth material that exceeds applicable VOC limits of subsection 301.1 or subsection 301.2 or subsection 304.1 shall be totaled and logged by the end of the following workday. VOC content shall be entered for each such material.

- b. **Monthly Update For Materials Compliant with Sections 301 and 304:** By the end of the following month, an owner or operator shall update the following records for each month:
 - (1) **Diluted Coatings:** For each topcoat and sealer to which reducer or other VOC-containing diluent is added at any time after its arrival at a facility, enter its highest VOC content in lbs/gal (or g/l) less water and non-precursor organic compounds.
 - (2) The amount of coating, the amount of catalyst/hardener, and the amount of reducer/coating diluent used.
 - (3) The quantity and type of organic solvent used each month for stripping and cleaning;
 - (4) The quantity of organic solvent disposed of offsite.
 - (5) **Exception:** Update yearly the totals of the usage of each VOC-containing material known to be used in amounts less than 15 gallons (57 liters) per year.

- c. **Semi-Annual Updates of Coatings Applied with Restricted-Use Guns:** Records associated with the Section 302 limitations on the use of conventional air-atomized spray guns and other restricted-use guns shall be kept. These records shall show for each semi-annual period the volume (VR) of finishing materials exceeding 515 g VOC/liter (4.29 lb VOC/gal) applied with conventional air-atomized spray guns and other restricted use guns. In addition, the total volume of all finishing material (AMV) used throughout the facility shall be determined. The total volume (VR) so applied over the previous six-months is divided by the total of all coatings used in the same period (AMV) and these calculations and the result are entered in the log.

501.3 Disposal/Recovery: An owner or operator shall keep records of disposal/recovery of all VOC-containing materials.

502 COMPLIANCE DETERMINATION - TEST METHODS: When more than one test method is permitted for a determination, an exceedance of the limits established in this rule, as determined by any of the applicable test methods, constitutes a violation of this rule.

502.1 Measurement of VOC content, pursuant to the VOC-limits of subsections 301.1, 301.2 and 304.1, shall be conducted and reported in accordance with EPA Test Method 24 (40 CFR 60, Appendix A). Acetone content shall be determined within the context of Method 24 by EPA Method 311 or other method acceptable to EPA. Multi-part coatings including those with reactive diluent(s) shall be tested by Method 24 procedures.

502.2 Measurement of air pressure at the center of the spray gun tip and air horns of a conventional air-atomized spray gun (reference Section 302 and subsection 307.2d.) shall be performed using an attachable device in proper working order supplied by the gun's manufacturer for performing such a measurement.

502.3 Determination of mil thickness for determining compliance with subsection 301.1b.(3) shall be performed by draw bar and calculations using the weight and area of the film and the density of the cured coating solids, by a Tooke Inspection Gage according to the instructions of its manufacturer, or by other means used for the purpose by a major coating manufacturer's laboratory or quality control.

502.4 Contrast ratio determinations pursuant to subsection 402.5b shall be done using American Society for Testing and Materials (ASTM) Method D-2805-80.

APPENDIX A TO RULE 346

Appendix A is the first of two appendices to Rule 346.

Appendix A includes all requirements for an Emission Control Device

- a. Eligibility:** A person is allowed to meet the VOC limits of either or both subsections 301.1 and 301.2, and meet the spray gun provisions of subsection 302.2 of this rule by using an ECS which reduces VOC emissions overall, including capture and processing, by at least 81 percent by weight.
- b. Compliance Schedule For ECS:** An owner or operator of a millwork coating facility shall have such facility in compliance per the following schedule. Total VOC emissions is the total VOC from all wood coating operations and associated cleaning processes. This includes furniture coating.

- (1) **Sources Emitting 50 TPY:** Full compliance with all applicable requirements of this rule shall be by November 15, 1996, if such facility has applied for or received a Title V permit, has a permit with a VOC-emission limit of 50 tons or more, or which has had an aggregate VOC emission to atmosphere after December 31, 1989, of 50.0 tons (45.35 Mg) or more in any calendar year or 300 pounds (136 kg) or more in any day. In addition, an owner or operator shall provide the Control Officer with:
 - (a) Both proof of a binding contract for an ECS and a compliance plan by June 3, 1996, listing the dates of completion of increments of progress toward meeting the requirements of the subsection 301.3.
 - (b) An O&M Plan for the ECS by November 15, 1996.
- (2) **Other Sources:** A facility shall be in compliance with the VOC limits of subsection 301.1 and 301.2 by January 15, 1997, if the facility's total VOC emission in each of the years 1990 through 1995 is less than 300 pounds (136 kg) in any day and 50.0 tons (45.35 MG) in any calendar year. In addition, the owner or operator shall provide the Control Officer with:
 - (a) Both proof of a binding contract for an ECS and a compliance plan by June 3, 1996, listing the dates of completing the increments of progress toward meeting the requirements of subsection 301.3; and
 - (b) An O&M Plan for the ECS by January 2, 1997.
- c. **Providing And Maintaining ECS Monitoring Devices:** Any person operating an emission control system (ECS) pursuant to subsection 301.3 of this rule shall install, maintain, and calibrate monitoring devices described in an O&M Plan submitted to the Control Officer pursuant to subsection d.(1). The monitoring devices shall measure temperatures, pressures, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly.
- d. **Operation and Maintenance (O&M) Plan Required for ECS:**
 - (1) The owner or operator of an emission control system (ECS) used to meet the requirements of Section 301 of this rule shall provide the Control Officer with an Operation and Maintenance (O&M) Plan. This O&M Plan shall specify key system operating parameters, such as temperatures, pressures and/or flow rates, necessary to determine compliance with this rule, and describe in detail procedures and their frequency of implementation needed to maintain the ECS.
 - (2) The Control Officer's written approval of the O&M Plan is required. The owner or operator shall consistently implement all provisions of the O&M Plan.

- (3) **Changes in frequency:** Changes involving reduction in the frequency or extent of procedures or parameters in a Control-Officer approved O&M Plan shall have the written consent of the Control Officer prior to being implemented.
- (4) **Other changes:** An updated O&M Plan must be submitted to the Control Officer for review within 10 days of any changes not involving reduction in frequency or extent of procedures or parameters of an approved O&M Plan. Within five working days of a written disapproval of such changes, either the original O&M Plan shall be reinstated or an alternative plan, negotiated with the affected facility and approved in writing by the Control Officer, shall be instituted.

e. Recordkeeping

- (1) **ECS Operation and Maintenance Records:** On each day that an ECS is used to comply with Section 301 of this rule, an owner or operator shall make a permanent record of the operating parameters of the key systems described in the O&M Plan. For each day or period in which the O&M Plan requires that maintenance be performed, a permanent record shall be made of the maintenance actions taken, within 24 hours of maintenance completion. An explanation shall be entered for scheduled maintenance that is not performed during the period designated in the O&M Plan.
- (2) **Other Records Required When Complying Via ECS:** An owner or operator choosing to meet the requirements of Section 301 through the use of an ECS shall maintain, in addition to the records required by subsection 501.2:
 - (a) Daily documentation showing the VOC content of the finishing material, as applied, in pounds VOC/gallon (g/l) when solvent or other VOC is added to the finishing material before application.
 - (b) Daily records showing the amount of coating, the amount of catalyst/hardener, and the amount of solvent, reducer, and/or diluent used.

f. Compliance Determination - Test Methods: When more than one test method is permitted for a determination, an exceedance of the limits established in this rule, as determined by any of the applicable test methods, constitutes a violation of this rule.

- (1) Measurement of VOC content, pursuant to the VOC-limits of subsections 301.1, 301.2 and subsection 304.1, shall be conducted and reported in accordance with EPA Test Method 24 (40 CFR 60, Appendix A). Acetone content shall be determined within the context of Method 24 by EPA Method 311 or other method acceptable to EPA. Multi-part coatings including those with reactive diluent(s) shall be tested by Method 24 procedures.

- (2) Control efficiency of an emission control device used to meet the requirements of Section 301 shall be determined according to EPA Reference Method 25 or an applicable submethod of Method 25 (Title 40, CFR Part 60, Appendix A).
- (3) When an unknown quantity of non-precursor organic compound is present in the input to a control device, EPA Method 18 shall be used to meet the requirement of Section 301. The Control Officer may specify an alternative EPA test method or other method approved by EPA.
- (4) Capture efficiency of an emission control device used to meet the requirements of Section 301 shall be determined by mass balance in combination with ventilation/draft rate determinations done in accordance with subsection f.(5), or according to "Guidelines for Determining Capture Efficiency" January 9, 1995, Candace Sorrell, Source Characterization Group A, Office of Air Quality Planning and Standards, US EPA. This EPA document is available at 2406 South 24 Street, Suite E-214, Phoenix, Arizona, 85034, or call (602) 506-6700 for information.
- (5) Ventilation/draft rates of an emission control device used to meet the requirements of Section 301 shall be determined by EPA Methods 2, 2A, 2C, or 2D.

APPENDIX B -- 2nd of two appendices to Rule 346

A SHORT-FORM OPTION

- a. **Applicability:** This Appendix B to Rule 346 only applies to operators of facilities which have a permit or permit modification limiting VOC emissions from all wood millwork and furniture coating to less than 10 tons, and the permit or Control Officer states in writing that this Appendix B applies. For those facilities for which this Appendix B does apply, no provisions within Sections 301 through 501, inclusive, shall be used to substitute for provisions in this Appendix B. Facilities subject to this Appendix B are also subject to all of Sections 100, 200, and 502.
- b. **Definitions:** For the purposes of this Appendix B, the following definition shall apply:
 - (1) **MINUS EXEMPT MATERIALS (MINUS EXEMPTS)** - Means the same as “less water and non-precursor organic compounds” in specifying VOC content.
- c. **Two Principal VOC Limits:** You must meet the limit of pounds of VOC per gallon of coating (grams VOC/liter) after all blending and reducing is completed. All VOC limits are minus exempt materials.
 - (1) **All Non-opaque sealers, primers, & topcoats:** 5.45 lb VOC/gal or 655 g/liter.

- (2) **All Opaque sealers, primers, basecoats & topcoats:** 5.10 lb VOC/gal or 610 g/liter.

d. VOC Tradeoff Options:

(1) **Low VOC topcoat with unlimited Sealer:**

Low VOC topcoat: limit of 3.83 lb/gal topcoat (460 g/liter) &
Higher VOC sealer: no VOC limit for sealer under such topcoat.

(2) **Low VOC sealer with higher VOC Topcoat**

Low VOC sealer: limit of 2.30 lb/gal sealer (275 g/liter)
Higher VOC topcoat: Topcoat over such sealer may have up to 5.66 lb/gal (680 g/l).

(3) **One-step Finish:** The operation must meet 2 conditions.

Higher VOC combination sealer & topcoat: up to 5.66 lb/gal (680 g/liter)

The 2 Conditions:

- I. A single wet application of either sealer or topcoat (not both).
- II. Thickness of the dry finish cannot exceed 3 dry mils, as determined by the test method in subsection 502.3.

e. Spray Method Requirements:

(1) **Guns with higher transfer:** If you spray coating having over 4.30 lb VOC/gal (515 g/l), you must use and have in evidence for an inspector at least one of the following onsite:

- Low pressure gun with less than 12 psig at tip. Examples: solely HVLP gun; a turbine gun.
- Airless; includes air-assisted airless.
- An electrostatic system.

(2) **Green Tag Option – Restriction on conventional guns and other restricted-use guns:**

(a) **Green Tag Requirements:** A conventional air-atomized or other restricted-use gun shall have a durable and visible tag, sticker, or painted emblem, no less than 4 square inches in area on the gun or within 3 ft of the gun on the gun's hose, or the facility is in violation. *But*, such a tag is not required at a facility having and using only coatings which contain less than 4.30 lbs VOC/gal (515 g/l), as applied.

(b) **Prohibition:** No coating over 4.30 lb VOC/gal (515 g/liter) may be applied with a *conventional* air-atomized or other *restricted-use gun*. This

prohibition includes, but is not limited to, traditional lacquers, washcoats, and low-solids stains. (“Conventional air-atomized gun” is defined in Section 207. “Restricted-use gun” is defined in Section 223.)

- (3) **Exemptions From VOC and Spray-Method Limits:** Prepackaged aerosol spray in cans under 22 fl. oz.; faux & metal-leaf finish are exempt from Appendix B subsections c., d., e.(1) and e.(2), as is any refinishing operation necessary for preservation, to return millwork to original condition, to replace missing millwork items to complete a matching set, or to produce custom replica millwork. But nothing exempted by the previous sentence is exempt from the annual inventory of VOC emissions or from other provisions of this Appendix B.

f. Housekeeping Functions:

- (1) **Keep Coatings, Cleaners, & Waste-materials Covered:** Coatings and cleaners not in use, as well as waste coatings, cleaning materials including solvent-dipped rags, and solvent used to clean spray equipment must be collected into a closed container or a container which is closed immediately after receiving such material.
- (2) **Booth Cleaning:** If booth/components other than *metal* filters are cleaned with solvent, no solvent which is more than 3.8 lb/VOC per gallon (455 g/l) shall be used. However, up to 1 gallon of solvent over 3.8 lb VOC/gal may be used for cleaning a booth as part of replacing coating on the booth.

g. Records: Keep a list of all VOC containing material with the name and amount of VOC in each. Express VOC content in pounds of VOC per gallon or grams of VOC per liter. For topcoats and sealers, use the VOC-content listed as “less ‘exempt’ materials” or “EPA” or “EPA Method”.

- (1) **If you ever do your own reducing or thinning of a sealer or topcoat:** Keep a list of the maximum VOC content of any material after you thin it or add additives at your facility.
- (2) **Keep receipts for 5 years** of the amount received for each VOC-containing material and of the amount of all VOC-waste materials sent for recycling or hazardous waste collection.
- (3) **What To Record And How Often:** Record the amount in the following 4 categories, (a) to (d), noting either the amount “used” or the amount “received” since your last records update:

- (a) All coatings including topcoats, sealers, stains, etc., including all parts, catalysts, activators, additives, hardeners (*not* reducers). If you use conventional or other restricted-use guns at all, total *separately* the coatings having less than 4.3 lb VOC/gal (515 g/l);
- (b) All reducers and diluents to be used for reducing or diluting coatings (not cleaning);
- (c) All solvents, strippers, thinners, and VOC-containing materials used for cleaning and cleanup (not reducing); and
- (d) All other VOC containing materials connected with wood coating. Omit janitorial & building maintenance.
- (e) **How Often to Update Your Records:**
 - (1) Update the above items in (a), (b), (c), and (d) weekly if your total monthly *use* of all coatings and diluents [(a) + (b)] is 250 gallons or more. Otherwise, update monthly.
 - (2) You may record just once a year those types of materials you use less than 15 gallons of.
Example: I use 5 kinds of graining ink. Added all together, I use 14 gallons of all graining ink combined: I only have to update my graining inks once a year.

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 347 FERROUS SAND CASTING

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 347
FERROUS SAND CASTING**

SECTION 100 - GENERAL

- 101 PURPOSE:** This rule is to limit the amount of volatile organic compounds (VOCs) emitted by organic binder materials and other organic materials used in molds made of sand or other finely divided refractory material, in which ferrous metals are cast.
- 102 APPLICABILITY:** This rule applies to the sand-casting of ferrous metal and does not apply to investment casting.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply:

- 201 BINDER -** Any material which is used to bind molding sand or other refractory particles into a cohesive mold or part of a mold used for metal casting. The term, binder, includes any catalysts and any additives incorporated or mixed into the binding material, unless such catalyst or additive is excluded in writing by the Control Officer.
- 202 CERTIFIED PRODUCT DATA SHEET -** A document, signed by an officer of a binder or coating-supplying operation, that states the maximum organic content or VOC content of a particular product as supplied.
- 203 DAY -** A period of 24 consecutive hours beginning at midnight.
- 204 EMISSION CONTROL DEVICE -** A system, approved in writing by the Control Officer, which reduces emissions of organic compounds and consists of collection and control devices which are designed and operated in accordance with good engineering practice.
- 205 EXEMPT COMPOUNDS -** The non-VOC, evaporating portion of a formulation; this necessarily includes all non-precursor organic compounds and all volatile inorganic compounds such as water.
- 206 FACILITY-SPECIFIED WORKDAY -** The regular starting time (and ending time) chosen by a facility operator to designate the facility's own workday of 24 consecutive hours.

- 207 **FERROUS METAL** - Iron, steel, or a metal alloy in which iron is the greatest constituent.
- 208 **INVESTMENT CASTING** - A type of metal casting otherwise known as "lost-wax process" in which a mold, later used to receive molten metal, is built up around a fusible model. When the mold attains sufficient size, the model is melted out of the mold.
- 209 **MOLD-WASH** - A liquid coating or surfacing agent, containing refractory particles and binding agent(s), which is applied to the heat-receiving surfaces of a mold to impart desired casting properties.
- 210 **NON-PRECURSOR ORGANIC COMPOUND** - Any of the organic compounds which have been designated by the EPA as having negligible photochemical reactivity and that are set forth in the definition of non-precursor organic compound in Rule 100.
- 211 **ORGANIC BINDER MATERIAL** - The organic-compound portion of those binders that contain more than 5% organic compound(s) by weight.
- 212 **ORGANIC COMPOUND** - Any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides and carbonates, and ammonium carbonate.
- 213 **SAND** - Granular, non-flammable, mineral material which lacks an organic component and has refractory properties.
- 214 **SAND CASTING** - A type of metal casting in which molten metal is poured into a mold made primarily of sand or other finely divided refractory material, bound together by binder material. For the purposes of this rule, sand casting does not include investment casting.
- 215 **VOC CONTENT (POUNDS OF VOC PER GALLON OF MATERIAL)** - The weight of VOC per volume of material that can be calculated by:

$$\text{Pounds of VOC per Gallon of Material} = \frac{W_s - W_{es}}{V_m}$$

Where:

- W_s = weight of all volatile (evaporating) material, in pounds
- W_{es} = weight of water and all other exempt components, in pounds
- V_m = volume of material, in gallons.

- 216 **VOLATILE ORGANIC COMPOUND (VOC)** - Any organic compound which participates in atmospheric photochemical reactions, except non-precursor organic compounds.

SECTION 300 - STANDARDS

301 LIMITS: No person shall operate a ferrous sand-casting facility with an aggregate emission to atmosphere of 150 pounds (68 kg) or more of VOC in any day or 25 tons (22.7 Mg) or more of VOC in any year from ferrous sand-casting operations, unless VOC emissions from mold binders are controlled either pursuant to subsection 301.1 or pursuant to subsection 301.2.

301.1 Control Device: (An) Emission Control System(s) which through capture and control reduces the total, facility-wide VOC emissions from binder by at least 81% as determined by the test methods referred to in Section 503 of this rule. VOC emissions from binders shall include but not be limited to VOC emitted from binders during mold-making, metal casting, and offgassing from residual binder adhering to granules of mold sand.

- a. Such System shall be operated whenever VOC emissions from binder can exceed 7 pounds (3.2 kg) per day, facility-wide.
- b. The requirement for 81% control in subsection 301.1 does not apply to those clock hours during which the operator can demonstrate that such mold-binder VOC-emissions are less than 1 pound per hour, facility-wide.

301.2 Alternative Compliance Method: For each facility-specified workday in which molds are made, the ratio of organic binder-material in all binder used to all sand receiving binder shall not exceed 1.35 to 100, by weight, as determined by the formula in subsection 503.6 of this rule.

- a. The organic material in binders that contain no more than 5% organic compound(s) by weight is excluded from inclusion in the formula.
- b. Failure to obtain the sand ordinarily used for molding shall not be an excuse to exceed the binder-to-sand ratio limit pursuant to subsection 301.2, except as is provided in Rule 100, Section 501 of these rules.

301.3 Surfacing Materials: A person shall comply with the following limits when using mold-wash or other mold surfacer:

a. **VOC content:**

- (1) Prior to 12:01 AM, January 1, 1999, neither mold wash nor other mold surfacing product shall contain more than 2.5 lb VOC/gal (300 g/l).
- (2) After 12:01 AM, January 1, 1999, neither mold wash nor other mold surfacing product shall contain more than 1.0 lb VOC/gal (120 g/l).

b. **Averaging option:** In lieu of observing the mold-wash VOC limit in subsection 301.3a, a person may choose to average mold-wash VOC

content over each completed facility-specified workday, pursuant to all provisions in (1) and (2) as follows:

- (1) For each facility-specified workday, the average is recorded within 13 hours after the start of the following facility-specified workday, using the formula in subsection 503.7 of this rule; and
- (2) Such average does not exceed a VOC content of 0.90 pounds VOC per gallon.

301.4 Gassing Operations: If a binder system that includes the injection of a reactive gas, can without controls emit more than 1 pound per hour of VOCs, its emissions shall be controlled by an emission control device that attains one of the following levels of control.

- a. 85% overall control (capture and processing) of such VOC.
- b. 90% capture and a maximum of 3.5 pounds per hour VOC emission from the control device at any and all production levels.

302 OPERATION AND MAINTENANCE:

302.1 General Maintenance: Any person subject to this rule shall operate and maintain in proper working order all process equipment in which VOC-containing materials are used or stored.

302.2 A Systematic Program To Establish Compliance With Subsection 301.2: The owner/operator, complying with this rule pursuant to subsection 301.2 of this rule, shall have a systematic program as follows:

- a. The program shall consist of devices and/or other effective means, which each day accurately indicates the amount of sand and the amount of binder, catalyst and any other additive that contains organic compound(s) and is incorporated into the molding sand.
- b. Such program shall be in effect continuously during the mixing of binder with molding sand, and shall be of sufficient accuracy and consistency as to determine compliance with subsection 301.2 of this rule.
- c. Any devices that are part of the program and are resettable shall be so protected as to preclude resetting by personnel not designated by the operator.
- d. The systematic program shall include a complete, written description of its correct functioning, and shall be subject to the Control Officer's approval.

302.3 Operation and Maintenance (O&M) Plan Required for ECS:

- a. The owner or operator of an emission control system (ECS) operated pursuant to subsection 301.1 or subsection 301.4 of this rule shall

have an Operation and Maintenance (O&M) Plan for each ECS. This O&M Plan shall specify key system operating parameters, such as temperatures, pressures and/or flow rates, necessary to determine compliance with this rule, and describe in detail procedures and their frequency of implementation needed to maintain the ECS. The owner or operator shall provide a copy of the O&M Plan, if so requested by the Control Officer.

- b. The owner or operator shall implement all provisions of the O&M Plan with the frequency specified by the Plan.
- c. **Changes in frequency:** Changes involving reduction in the frequency or extent of procedures or parameters in a Control-Officer approved O&M Plan shall have the written consent of the Control Officer prior to being implemented.
- d. **Other changes:** An updated O&M Plan must be submitted to the Control Officer for review within 10 days of any changes not involving reduction in frequency or extent of procedures or parameters of an approved O&M Plan. Within five working days of a written disapproval of such changes, either the original O&M Plan shall be reinstated or an alternative plan, negotiated with the affected facility and approved in writing by the Control Officer, shall be instituted.

303 STORAGE AND DISPOSAL OF BINDERS, SOLVENTS, AND OTHER VOC-CONTAINING MATERIAL:

303.1 Storage: A person shall cover and keep covered or enclosed each uncured binder material, any solvents, and any other VOC-containing material which are not in use. A person shall store binder materials and cleaning materials in closed or covered containers.

303.2 Disposal Of VOC And VOC-Containing Material: A person shall store all waste materials containing any VOC in fluid form, including but not limited to uncured binder components, rags, waste coatings, waste solvents and their residues, in closed containers. Such containers shall have labels that legibly identify their contents and shall remain covered except when contents are being added or removed.

304 EXEMPTIONS: Each calendar year an owner or operator is allowed to claim a total of 55 gallons of mold-wash that is exempt from all requirements pursuant to subsection 301.3 of this rule if all such mold-wash is separately identified, logged, and each month is cumulatively totaled for the year.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE: This rule is effective September 1, 1998.

402 OTHER REGULATORY MATTERS:

- 402.1** Nothing in this rule shall relieve a person from complying with other applicable environmental statutes and rules.
- 402.2** Rule 331 of these rules applies to cleaning, degreasing, and stripping processes which can emit VOC. Rule 336 applies to the coating of castings.

SECTION 500 - MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING: An owner or operator subject to this rule shall keep the following records and lists in a consistent and complete manner, and shall make them available to the Control Officer upon request. Records of the previous 12 months, requested during normal business hours, shall be made available without delay. Each of the following records shall be maintained for a minimum of five years:

501.1 Current List:

- a.** Maintain a current list of all VOC-containing fluid materials as received by the facility such as binders and/or binder components, coatings, cleaning solvents, lubricants and any other VOC-containing substances.
- b.** List the name or designation of each and include next to it the VOC content of each in pounds per gallon or grams per liter.
- c.** This requirement does not apply to materials having less than 2 percent organic content by volume as received.

501.2 Monthly Schedule: By the end of the following month, an owner or operator shall update the following records for each completed month:

- a.** The amount of each binder constituent used.
- b.** The amount of each mold-wash and surfacer used.
- c.** The quantity and type of VOC-containing solvent added each month as a diluent in binders, mold-wash, surfacer, or as a diluent in some other production capacity.
- d.** The quantity of fluid VOC or material containing any fluid VOC disposed of offsite. This includes VOC on rags, sand, and other materials.
- e.** Annual Exception: Yearly, update the totals of the usage of each fluid, VOC-containing material that is known to be used in amounts totaling less than 15 gallons (57 liters) per year for all that type of material.

501.3 Frequency Of Computing The Binder-To-Sand Ratio: The following provisions apply to a facility complying with VOC limits pursuant to subsection 301.2 of this rule:

- a. **Monthly:** Computations of mass balance for the month shall be made according to the period-weighted average formula in subsection 503.6 of this rule within 7 workdays after the end of the month.
- b. **Daily From Meter Readings:** Such calculations for each day, determined with the numerical output(s) of the system run pursuant to subsection 302.2 of this rule shall be completed and entered in a log by 12:01 PM of the following workday or by the middle of the first shift of the following facility-specific workday.
- c. **Reduced Frequency of Determination for Ratios Below Limits:**
 - (1) **Earning weekly determinations:** If no daily ratios exceed 1.27 : 100 for forty consecutive workdays and no weekly ratio is above 1.25 : 100 during the same period, then weekly averaging may be instituted in place of daily calculations of the daily average, until such time as that weekly ratio is exceeded. Following such an exceedance, daily determinations shall be resumed.
 - (2) If there is no weekly average ratio above 1.20 : 100 for 10 consecutive weeks, then the following schedule may be followed:
 - (A) Determine each month's average by the middle of the first full, facility-specified workday of the following month; and
 - (B) In each month, determine the weekly average-ratio of a single, selected week in that month by the middle of the first full workday of the following week. The selected week shall be either the week specified in (i) or shall be the week specified by the Control Officer pursuant to (ii):
 - (i) Determine the weekly average ratio for the week that falls immediately after the 3rd full work-week of the month..
 - (ii) The Control Officer may from time to time designate to the operator a random work-week of the month for determination of that week's average organic-compound to sand ratio. The Control Officer shall notify the operator prior to the commencement of production activities for the designated work-week.
 - (C) Determine the weekly average ratio by the middle of the first full workday of the following week. If any monthly average ratio exceeds 1.19 : 100 or if any weekly average exceeds 1.20 : 100, then weekly averaging shall be resumed, unless the daily ratio maximum in 501.3c(1) of this rule is also exceeded, in which case daily determinations shall be resumed pursuant to subsection 501.3b.

(3) The schedule of determinations pursuant to subsections 501.3c(1) and (2) is disallowed if any exceedance or violation occurs of said schedule or of subsection 301.2 requirements. In either case, the operator shall then resume each schedule in subsections 501.3a and 501.3b.

(4) **Reinstatement:** Should an operator desire to reinstate a schedule provided in subsection 501.3c, the operator shall make such a request, in writing, to the Control Officer. The request shall state changes or improvements that make meeting the schedule's requirements reasonably certain. The Control Officer shall approve or deny such a request in writing.

502 INSTALLING AND MAINTAINING ECS MONITORING DEVICES: Any person operating an Emission Control System (ECS) pursuant to subsection 301.1 of this rule shall install, maintain, and calibrate monitoring devices described in an O&M Plan submitted to the Control Officer pursuant to subsection 302.3. The monitoring devices shall measure temperatures, pressures, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly.

502.1 ECS Operation and Maintenance Records: On each day that an ECS is used to comply with Section 301 of this rule, an owner or operator shall make a record, retained for 5 years, of the operating parameters of the key systems described in the O&M Plan. For each day or period in which the O&M Plan requires that maintenance be performed, a permanent record shall be made of the maintenance actions taken, within 24 hours of maintenance completion. An explanation shall be entered for scheduled maintenance that is not performed during the period designated in the O&M Plan.

502.2 Other Records Required When Complying Via ECS: An owner or operator choosing to meet the requirements of Section 301 through the use of an ECS shall maintain, in addition to the monthly records required by subsection 501.2 of this rule, daily records showing the amount of binder, wash, and diluent used.

503 COMPLIANCE DETERMINATION - TEST METHODS: When more than one test method is permitted for a determination, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation of this rule.

503.1 Calibration of Metering Equipment on the Sand/Resin Mixer:

a. Each month or as often as calibration is prescribed by the operating instructions supplied by the manufacturer, whichever is more frequent, the amount of sand delivered per minute at each different sand-supply rate for each different sand-supply equipment-configuration in current use shall be determined prior to any

adjustment, and recorded. The same shall be done for the binder at each resin ratio setting and for the catalyst flowmeter if one is used pursuant to required calculations.

- b. If adjustment is made to any device of which such adjustment can affect the flow rate, a flow rate test shall be performed subsequent to completion of adjustment, and the result recorded.

503.2 VOC and Organic Content – Laboratory Methods:

- a. **Washes:** The VOC content of mold-washes and surfacers, as applied, shall be determined by a certified product data sheet or EPA Test Method 24 of 40 CFR Part 60, Appendix A. If there is a discrepancy between the information on the certified product data sheet and the results of the Method 24 analysis, compliance status shall be based on the Method 24 results.
- b. **Binders:** The organic-compound content of binders, as used, shall be determined by a certified product data sheet or EPA Test Method 415.1, Total Organic Carbon. If there is a discrepancy between the information on the certified product data sheet and the results of the EPA Test Method 415.1, compliance status shall be based on the Method 415.1 results.
- c. **Molds:** The following are laboratory methods for determining the organic content of sand in a cured mold. Using these methods requires that an initial determination be made of the total organic carbon or the amount of loss on ignition (LOI) of the sand before the sand is combined with binder and formed into a mold.
 - (1) EPA Test Method 415.1, Total Organic Carbon, or by another Control-Officer approved, standard test-method for determining total carbon that is either an EPA-approved method or is a submethod included by an EPA test-method.
 - (2) When the percentage of organic compounds in a binder has been established to the satisfaction of the Control Officer, American Foundry Society Procedure 117-87-S, Loss On Ignition, may be used.

503.3 Control efficiency of an emission control device required by Section 301.1 shall be determined according to EPA Reference Method 25 or an applicable submethod of Method 25, 25A, or 25 B (Title 40, CFR Part 60, Appendix A).

503.4 Capture efficiency of an emission control device required by Section 301.1 shall be determined by mass balance in combination with ventilation/draft rate determinations referenced in subsection 503.5, or shall be done in accordance with US EPA Test Methods 204, 204a, 204b, 204c, 204d,

204e, and 204f, Appendix M, 40 CFR 51. This EPA document is incorporated by reference and is available at 1001 North Central Avenue, Phoenix, Arizona, 85004, or by calling (602) 506-6700 for information.

503.5 Ventilation/draft rates of an emission control device required by Section 301.1 shall be determined by EPA Reference Methods 2, 2A, 2C, or 2D (40 CFR Part 60, Appendix A).

503.6 Calculations Determining Compliance With Alternative Compliance Method, Subsection 301.2: Subsection 301.2 requires a determination of the facility-wide, period-weighted average-ratio of the organic mass of all the binders used as compared to the mass of sand receiving the binders during an averaging period. This shall be calculated using the following equation:

$$\text{Organics to binder-sand ratio} = \frac{M_1O_1 + M_2O_2 + \dots + M_nO_n}{S_{D1} + S_{D2} + \dots + S_{DL} + M_1(1-O_1) + M_2(1-O_2) + \dots + M_n(1-O_n)}$$

$$O_T \text{ (Total Organic Content)} = M_1O_1 + M_2O_2 + \dots + M_nO_n$$

where:

O_T = Total organic material in the binder system(s) used during the averaging period, in kilograms (or lbs).

O_1 = The organic ratio of the first binder formulation used during the averaging period, expressed in kilograms organic compounds per kg. of binder (lb/lb).

O_2 = The organic ratio of the second binder formulation used during the averaging period, expressed in kilograms organic compounds per kg. of binder (lb/lb).

O_n = The organic ratio of the very last binder formulation used during the averaging period, expressed in kilograms organic compounds per kg. of binder (lb/lb) when a total of "n" formulations were used.

M_1 = The total mass, used throughout the period, of the first binder formulation used that period, expressed in kg. or lb.

M_2 = The total mass used throughout the period, of the second binder formulation used that period, in kg. or lb.

M_n = The total mass, used throughout the period, of the very last binder formulation used that period, when a total of "n" formulations were used, expressed in kg. or lb.

S_{D1} = The mass of sand used in day one of the averaging period.

S_{D2} = The mass of sand used in day two of the averaging period.

S_{DL} = The mass of sand used on the last day of the averaging period.

503.7 Daily-Weighted Average VOC Content of Mold Washes: The daily-weighted average VOC content of all the mold-wash used facility-wide during a facility-specified workday, a quantification required in order to comply with subsection 301.3b, shall be calculated using the following equation and be expressed in grams of VOC per liter of mold-wash (or lbs./gal).

$$\text{VOC}_w = \frac{V_1C_1 + V_2C_2 + \dots + V_nC_n + M_{va}}{V_1 + V_2 + \dots + V_n + V_{va} + V_{sa}}$$

where:

VOC_w = The daily-weighted average VOC content of all "n" mold-wash formulations ("a" through "n") used during a workday throughout the facility expressed in grams of VOC per liter of mold-wash (or lb/gal).

C_1 = The VOC content of the first mold-wash formulation used during a workday in grams per liter of mold-wash (lb/gal).

C_2 = The VOC content of the second mold-wash formulation used during a workday, in grams per liter of mold-wash (or lb/gal).

C_n = The VOC content of the very last mold-wash formulation used during a workday when a total of "n" formulations were used, and the only formulation remaining to be accounted for. It is expressed in grams VOC per liter of mold-wash-formulation "n" (or lb/gal).

M_{va} = The total mass of VOC added to any previously formulated mold-wash used during the course of this workday not otherwise accounted for in VOC-content of formulations (expressed in grams or lbs). This includes the VOC portion of added materials which also contain non-VOC components.

V_1 = The total volume used throughout the workday of the first mold-wash formulation used that day, expressed in liters (or gal).

V_2 = The total volume used throughout the workday of the second mold-wash formulation used that day, in liters (or gal).

V_n = The total volume used throughout the workday of the very last mold-wash formulation used that workday, when a total of "n" formulations were used. It is expressed in liters (or gal) of formulation "n".

V_{va} = The total volume of VOC in liters (or gal) added to any and all previously formulated mold-wash during the course of this workday for make-up, viscosity reducing, or other purpose(s), not otherwise accounted for in the VOC-content of formulations.

V_{sa} = The total volume of solids in liters (or gal) added during a workday to any already formulated mold-washes used during the workday such solids are added.

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 348

AEROSPACE MANUFACTURING AND REWORK OPERATIONS

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 348
AEROSPACE MANUFACTURING AND REWORK OPERATIONS**

SECTION 100 - GENERAL

- 101 PURPOSE:** To limit the emission of volatile organic compounds (VOCs) from the manufacture and rework of aerospace vehicles and their components.
- 102 APPLICABILITY:** This rule applies to the manufacture or rework of commercial, civil, or military aerospace vehicles. This rule does not apply to research and development, quality control, laboratory testing, electronic parts and assemblies (except for cleaning and coating of completed assemblies) and to rework operations performed on antique aerospace vehicles or components or space vehicles.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply:

- 201 ABLATIVE COATING** - A coating that chars when exposed to open flame or extreme temperatures, as would occur during the failure of an engine casing or during aerodynamic heating. The ablative char surface serves as an insulative barrier, protecting adjacent components from the heat or open flame.
- 202 ADHESION PROMOTER** - A very thin coating applied to a substrate to promote wetting and form a chemical bond with the subsequently applied material.
- 203 ADHESIVE BONDING PRIMER** - A primer applied in a thin film to aerospace components for the purpose of corrosion inhibition and increased adhesive bond strength by attachment. There are two categories of adhesive bonding primers, primers with a design cure at 250°F or below and primers with a design cure above 250°F.
- 204 AEROSOL COATING** - A hand-held, pressurized, nonrefillable container that expels an adhesive or a coating in a finely divided spray when a valve on the container is depressed.
- 205 AEROSPACE VEHICLE OR COMPONENT** - Any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components,

of any aircraft, including but not limited to airplanes, helicopters, missiles, rockets, and space vehicles.

- 206 AIRCRAFT FLUID SYSTEMS** - Those systems that handle hydraulic fluids, fuel, cooling fluids, or oils.
- 207 AIRCRAFT TRANSPARENCY** – The aircraft windshield, canopy, passenger windows, lenses and other components which are constructed of transparent materials.
- 208 ANTICHAFE COATING** - A coating applied to areas of moving aerospace components that may rub during normal operations or installation.
- 209 ANTIQUE AEROSPACE VEHICLE OR COMPONENT** - An antique aircraft, as defined by 14 CFR Part 45, or components thereof. An antique aerospace vehicle would not routinely be in commercial or military service in the capacity for which it was designed.
- 210 AQUEOUS CLEANING SOLVENT** - A solvent in which water is at least 80 percent of the solvent as applied.
- 211 BONDING MASKANT** - A temporary coating used to protect selected areas of aerospace parts from strong acid or alkaline solutions during processing for bonding.
- 212 CHEMICAL AGENT-RESISTANT COATING (CARC)** - An exterior topcoat designed to withstand exposure to chemical warfare agents or the decontaminates used in these agents.
- 213 CHEMICAL MILLING MASKANT** - A coating that is applied directly to aluminum components to protect surface areas when chemical milling the component with a Type I or II etchant. This does not include bonding maskants, line sealers, and critical use and seal coat maskants. Additionally, maskants that must be used on an individual part or subassembly with a combination of Type I or II etchants and any of the above types of maskants (e.g., bonding, line sealers, and critical use and seal coat) are not included. Maskants that are defined as specialty coatings are not included under this definition.
- 214 CLEANING OPERATION** - Any operation that removes dirt or impurities from aerospace vehicles, components, or coating equipment. This may include spray gun, hand-wipe, and flush cleaning operations.
- 215 CLEANING SOLVENT** - A liquid material used for hand-wipe, spray gun, or flush cleaning. This definition excludes solutions that contain VOCs at a concentration less than 0.1% for carcinogenic VOCs or 1.0% for noncarcinogenic VOCs, as determined from manufacturers' representations.

- 216 CLEAR COATING** - A transparent coating usually applied over a colored opaque coating, metallic substrate, or placard to give improved gloss and protection to the color coat. In some cases, a clearcoat refers to any transparent coating without regard to substrate.
- 217 CLOSED-CYCLE DEPAINTING SYSTEM** - A dust free, automated process that removes permanent coating in small sections at a time, and maintains a continuous vacuum around the area(s) being repainted to capture emissions.
- 218 COATING** - A material that is applied to the surface of an aerospace vehicle or component to form a decorative or functional solid film, or the solid film itself.
- 219 COATING OPERATION** – Using a spray booth, tank, or other enclosure or any area, such as a hangar, for applying a single type of coating (e.g., primer); using the same spray booth for applying another type of coating (e.g., topcoat) constitutes a separate coating operation for which compliance determinations are performed separately.
- 220 COATING UNIT** - A series of one or more coating applicators and any associated drying area and/or oven wherein a coating is applied, dried, and/or cured. A coating unit ends at the point where the coating is dried or cured, or prior to any subsequent application of a different coating. It is not necessary to have an oven or flashoff area to be included in this definition.
- 221 COMMERCIAL EXTERIOR AERODYNAMIC STRUCTURE PRIMER** - A primer used on aerodynamic components and structures that protrude from the fuselage, such as wings and attached components, control surfaces, horizontal stabilizers, vertical fins, wing-to-body fairings, antennae, and landing gear and doors, for the purpose of extended corrosion protection and enhanced adhesion.
- 222 COMMERCIAL INTERIOR ADHESIVE** - Materials used in the bonding of passenger cabin interior components. These components must meet the FAA fireworthiness requirements.
- 223 COMPATIBLE SUBSTRATE PRIMER** - Either compatible Epoxy Primer or Adhesive Primer. Compatible Epoxy Primer is primer that is compatible with the filled elastomeric coating and is epoxy based. The compatible substrate primer is an epoxy-polyamide primer used to promote adhesion of elastomeric coatings such as impact-resistant coatings. Adhesive Primer is a coating that (1) inhibits corrosion and serves as a primer applied to bare metal surfaces or prior to adhesive application, or (2) is applied to surfaces that can be expected to contain fuel. Fuel tank coatings are excluded from this category.
- 224 CONFINED SPACE** - A space that (1) is large enough and so configured that an employee can bodily enter and perform assigned work; (2) is limited or restricted for entry or exit (for example, fuel tanks, fuel vessels, and other spaces that have limited entry); and (3) is not suitable for continuous employee occupancy.

- 225 CORROSION PREVENTION SYSTEM** - A coating system that provides corrosion protection by displacing water and penetrating mating surfaces, forming a protective barrier between the metal surface and moisture. Coatings containing oils or waxes are excluded from this category.
- 226 CRITICAL USE AND LINE SEALER MASKANT** - A temporary coating, not covered under other maskant categories, used to protect selected areas of aerospace parts from strong acid or alkaline solutions such as those used in anodizing, plating, chemical milling and processing of magnesium, titanium, or high strength steel, high precision aluminum chemical milling of deep cuts, and aluminum chemical milling of complex shapes. Materials used for repairs or to bridge gaps left by scribing operations (i.e., line sealer) are also included in this category.
- 227 CRYOGENIC FLEXIBLE PRIMER** - A primer designed to provide corrosion resistance, flexibility, and adhesion of subsequent coating systems when exposed to loads up to and surpassing the yield point of the substrate at cryogenic temperatures (-275°F and below).
- 228 CRYOPROTECTIVE COATING** - A coating that insulates cryogenic or subcooled surfaces to limit propellant boil-off, maintain structural integrity of metallic structures during ascent or re-entry, and prevent ice formation.
- 229 CYANOACRYLATE ADHESIVE** - A fast-setting, single component adhesive that cures at room temperature. Also known as "super glue."
- 230 ELECTRIC OR RADIATION-EFFECT COATING** - A coating or coating system engineered to interact, through absorption or reflection, with specific regions of the electromagnetic energy spectrum, such as the ultraviolet, visible, infrared, or microwave regions. Uses include, but are not limited to, lightning strike protection, electromagnetic pulse (EMP) protection, and radar avoidance. Coatings that have been designated "classified" by the Department of Defense are exempt.
- 231 ELECTROSTATIC DISCHARGE AND ELECTROMAGNETIC INTERFERENCE (EMI) COATING** - A coating applied to space vehicles, missiles, aircraft radomes, and helicopter blades to disperse static energy or reduce electromagnetic interference.
- 232 ELEVATED TEMPERATURE SKYDROL RESISTANT COMMERCIAL PRIMER** - A primer applied primarily to commercial aircraft (or commercial aircraft adapted for military use) that must withstand immersion in phosphate-ester (PE) hydraulic fluid (Skydrol 500b or equivalent) at the elevated temperature of 150°F for 1,000 hours.
- 233 EMISSION CONTROL SYSTEM (ECS)** - A system, approved in writing by the Control Officer, designed and operated in accordance with good engineering practice to reduce emissions of volatile organic compounds. Such system

consists of an emissions collection subsystem and an emissions processing subsystem.

- 234 EPOXY POLYAMIDE TOPCOAT** - A coating used where harder films are required or in some areas where engraving is accomplished in camouflage colors.
- 235 FIRE-RESISTANT (INTERIOR) COATING** - A coating applied to the interior cabin of an airplane that prevents the interior cabin from being easily ignited and from burning with extreme rapidity.
- 236 FLEXIBLE PRIMER** - A primer that meets flexibility requirements such as those needed for adhesive bond primed fastener heads or on surfaces expected to contain fuel.
- 237 FLIGHT TEST COATING** - A coating applied to aircraft other than missiles or single-use aircraft prior to flight testing to protect the aircraft from corrosion and to provide required marking during flight test evaluation.
- 238 FLUSH CLEANING** – Removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component or coating equipment by passing solvent over, into, or through the item being cleaned. The solvent simply may be poured into the item being cleaned and then drained or assisted by air or hydraulic pressure or by pumping. Hand-wipe cleaning operations where wiping, scrubbing, mopping or other hand action are used are not included.
- 239 FUEL TANK ADHESIVE** - An adhesive used to bond components exposed to fuel and must be compatible with fuel tank coatings.
- 240 FUEL TANK COATING** - A coating applied to fuel tank components for the purpose of corrosion and/or bacterial growth inhibition and to assure sealant adhesion in extreme environmental conditions.
- 241 GENERAL AVIATION (GA)** - The segment of civil aviation that encompasses all facets of aviation except air carriers, commuters and military. General aviation includes charter and corporate-executive transportation, instruction, rental, aerial application, aerial observation, business, pleasure and other special uses.
- 242 GENERAL AVIATION REWORK FACILITY** - Any aerospace facility with the majority of its revenues resulting from the reconstruction, repair, maintenance, repainting, conversion, or alteration of general aviation aerospace vehicles or components.
- 243 GRAMS PER LITER VOC** - A weight of VOC per combined volume of VOC and coating solids, less water and exempt compounds, and can be calculated by the following equation:

$$\text{grams per liter} = \frac{W_s - W_w - W_{es}}{V_s - V_w - V_{es}}$$

W_s = weight of volatile organic compounds in grams

W_w = weight of water in grams

W_{es} = weight of exempt compounds in grams

V_s = volume of material in liters

V_w = volume of water in liters

V_{es} = volume of exempt compounds in liters

- 244 HAND-WIPE CLEANING OPERATION** - Removing contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component by physically rubbing it with a material such as a rag, paper, or cotton swab that has been moistened with a cleaning solvent. This definition excludes the use of rags or other material used only to dry excess solvent from a part or product after removal from a vat or any other solvent bath.
- 245 HIGH TEMPERATURE COATING** - A coating designed to withstand temperatures of more than 350°F.
- 246 HIGH VOLUME LOW PRESSURE (HVLP) SPRAY EQUIPMENT** - Spray equipment that is used to apply coating by a spray gun that operates at 10.0 psig of atomizing air pressure or less at the air cap.
- 247 INSULATION COVERING** - Material that is applied to foam insulation to protect the insulation from mechanical or environmental damage.
- 248 INTERMEDIATE RELEASE COATING** - A thin coating applied beneath topcoats to assist in removing the topcoat in repainting operations and generally to allow the use of less hazardous repainting methods.
- 249 LACQUER** - A clear or pigmented coating formulated with a nitrocellulose or synthetic resin to dry by evaporation without a chemical reaction. Lacquers are resolvable in their original solvent.
- 250 LEAK** - A liquid that is allowed to seep or drip or to otherwise enter or escape in either of the following ways:
- a. Three or more drops, including misting and clouding; or
 - b. A puddle greater than one square inch.

- 251 LIMITED ACCESS SPACE** - Internal surfaces or passages of an aerospace vehicle or component that cannot be reached without the aid of an airbrush or a spray gun extension for the application of coatings.
- 252 METALIZED EPOXY COATING** - A coating that contains relatively large quantities of metallic pigmentation for appearance and/or added protection.
- 253 MOLD RELEASE** - A coating applied to a mold surface to prevent the molded piece from sticking to the mold as it is removed.
- 254 NON-PRECURSOR ORGANIC COMPOUNDS** - Any of the organic compounds which have been designated by the EPA as having negligible photochemical reactivity. EPA designates such compounds as "exempt". A listing of these compounds is found in Rule 100.
- 255 NONSTRUCTURAL ADHESIVE** - An adhesive that bonds nonload bearing aerospace components in noncritical applications and is not covered in any other specialty adhesive categories.
- 256 OPERATING PARAMETER VALUE** - A minimum or maximum value established for a control equipment or process parameter that, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limitation.
- 257 OPTICAL ANTI-REFLECTION COATING** - A coating with a low reflectance in the infrared and visible wavelength ranges that is used for antireflection on or near optical and laser hardware.
- 258 PART MARKING COATING** – Coatings or inks used to make identifying markings on materials, components, and/or assemblies. These markings may be either permanent or temporary.
- 259 PRETREATMENT COATING** - An organic coating that contains at least 0.5 percent acids by weight and is applied directly to metal surfaces to provide surface etching, corrosion resistance, adhesion, and ease of stripping.
- 260 PRIMER** – The first layer and any subsequent layers of identically formulated coating applied to the surface of an aerospace vehicle or component. Primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and adhesion of subsequent coatings. Primers that are defined as specialty coatings are not included under this definition.
- 261 RADOME** – The nonmetallic protective housing for electromagnetic transmitters and receivers (e.g., radar, electronic countermeasures, etc.).
- 262 RAIN EROSION-RESISTANT COATING** - A coating or coating system used to protect the leading edges of parts such as flaps, stabilizers, radomes, engine inlet nacelles, etc. against erosion caused by rain impact during flight.

- 263 RESEARCH AND DEVELOPMENT** - An operation whose primary purpose is for research and development of new processes and products and that is conducted under the close supervision of technically trained personnel and is not involved in the manufacture of final or intermediate products for commercial purposes, except in a de minimis manner.
- 264 RESIN SURFACE SEALER** - A coating designed or intended to seal the pores of high porosity cast surfaces of aerospace components composed of magnesium, aluminum or their alloys to prevent corrosion.
- 265 ROCKET MOTOR BONDING ADHESIVE** - An adhesive used in rocket motor bonding applications.
- 266 ROCKET MOTOR NOZZLE COATING** - A catalyzed epoxy coating system used in elevated temperature applications on rocket motor nozzles.
- 267 RUBBER-BASED ADHESIVE** - A quick setting contact cement that provides a strong, yet flexible bond between two mating surfaces that may be of dissimilar materials.
- 268 SCALE INHIBITOR** - A coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of scale.
- 269 SCREEN PRINT INK** - Inks used in screen printing processes during fabrication of decorative laminates and decals.
- 270 SEAL COAT MASKANT** - An overcoat applied over a maskant to improve abrasion and chemical resistance during production operations.
- 271 SEALANT** - A material used to prevent the intrusion of water, fuel, air, or other liquids or solids from certain areas of aerospace vehicles or components. There are two categories of sealants: extrudable/rollable/brushable sealants and sprayable sealants.
- 272 SELF-PRIMING TOPCOAT** - A topcoat that is applied directly to an uncoated aerospace vehicle or component for purposes of corrosion prevention, environmental protection, and functional fluid resistance. More than one layer of identical coating formulation may be applied to the vehicle or component. The coating is not subsequently topcoated with any other product formulation.
- 273 SEMIAQUEOUS CLEANING SOLVENT** - A solvent wherein at least 60% of the solvent solution as applied must be water.
- 274 SILICONE INSULATION MATERIAL** - An insulating material applied to exterior metal surfaces for protection from high temperatures caused by atmospheric friction or engine exhaust. These materials differ from ablative coatings in that they are not "sacrificial."

- 275 SOLID FILM LUBRICANT** - A very thin coating consisting of a binder system containing as its chief pigment material one or more of the following: molybdenum, graphite, polytetrafluoroethylene (PTFE), or other solids that act as a dry lubricant between faying surfaces.
- 276 SOLIDS** – The nonvolatile portion of the coating that after drying makes up the dry film.
- 277 SPACE VEHICLE** - A man-made device, either manned or unmanned, designed for operation beyond earth's atmosphere. This definition includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons. Also included is auxiliary equipment associated with test, transport, and storage that through contamination can compromise the space vehicle performance.
- 278 SPECIALIZED FUNCTION COATING** - A coating that fulfills extremely specific engineering requirements that are limited in application and are characterized by low volume usage. This category excludes coatings covered in other Specialty Coating categories.
- 279 SPECIALTY COATING** - A coating that, even though it meets the definition of a primer, topcoat, or self-priming topcoat, has additional performance criteria beyond those of primers, topcoats, and self-priming topcoats for specific applications. These performance criteria may include, but are not limited to, temperature or fire resistance, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, or enhanced corrosion protection.
- 280 SPRAY GUN** - A device that atomizes a coating or other material and projects the particulates or other material onto a substrate.
- 281 STRUCTURAL AUTOCLAVABLE ADHESIVE** - An adhesive used to bond load carrying aerospace components that is cured by heat and pressure in an autoclave.
- 282 STRUCTURAL NONAUTOCLAVABLE ADHESIVE** - An adhesive cured under ambient conditions that is used to bond load carrying aerospace components or other critical functions, such as nonstructural bonding in the proximity of engines.
- 283 SURFACE PREPARATION** – The removal of contaminants from the surface of an aerospace vehicle or component or the activation or reactivation of the surface in preparation for the application of a coating.
- 284 TEMPORARY PROTECTIVE COATING** - A coating applied to provide scratch or corrosion protection during manufacturing, storage, or transportation. Two types include peelable protective coatings and alkaline removable coatings. These materials are not intended to protect against strong acid or alkaline solutions.

Coatings that provide this type of protection from chemical processing are not included in this category.

- 285 THERMAL CONTROL COATING** - A coating formulated with specific thermal conductive or radiative properties to permit temperature control of the substrate.
- 286 TOPCOAT** - A coating that is applied over a primer on an aerospace vehicle or component for appearance, identification, camouflage, or protection. Topcoats that are defined as specialty coatings are not included under this definition.
- 287 TOUCH-UP AND/OR REPAIR OPERATIONS** - That portion of the coating operation that is the incidental application of coating used to cover minor imperfections in the coating finish or to achieve complete coverage. This definition includes out-of-sequence or out-of-cycle coating.
- 288 VOC COMPOSITE PARTIAL VAPOR PRESSURE** - The sum of the partial pressures of the compounds defined as VOC's and is determined by the following calculation:

$$PP_s = \frac{\sum_{i=1}^n \frac{W_i}{MW_i} \times VP_i}{\frac{W_w}{MW_w} + \frac{W_e}{MW_e} + \sum_{i=1}^n \frac{W_i}{MW_i}}$$

W_i = Weight of the "i"th VOC compound, grams.

W_w = Weight of water, grams.

W_e = Weight of non-HAP, non-VOC compound, grams.

MW_i = Molecular weight of the "i"th VOC compound, g/g-mole.

MW_w = Molecular weight of water, g/g-mole.

MW_e = Molecular weight of exempt compound, g/g-mole.

PP_c = VOC composite partial pressure at 20°C, mm Hg.

VP_i = Vapor pressure of the "i"th VOC compound at 20°, mm Hg.

- 289 VOLATILE ORGANIC COMPOUND (VOC)** - Any organic compound which participates in atmospheric photochemical reactions, except non-precursor organic compounds.
- 290 WATERBORNE (WATER-REDUCIBLE) COATING** - A coating which contains more than 5 percent water by weight as applied in its volatile fraction.

291 WET FASTENER INSTALLATION COATING - A primer or sealant applied by dipping, brushing, or daubing to fasteners that are installed before the coating is cured.

292 WING COATING - A corrosion-resistant topcoat that is resilient enough to withstand the flexing of the wings.

SECTION 300 - STANDARDS

301 LIMITATIONS - VOC EMISSIONS: No person shall apply any surface coating including any VOC-containing materials added to the original coating supplied by the manufacturer, which contain VOC in excess of the limits in Tables 1a and 1b, unless the emissions are controlled in accordance with the provisions of Section 302 of this rule.

Table 1a

PRIMER or TOPCOAT TYPE	VOC LIMITS (g/L)
All Primers (except Specialty or General Aviation Rework Facility Primers)	350 g/l
All Topcoats (except Specialty or General Aviation Rework Facility Topcoats)	420 g/l
General Aviation Rework Facility Primers	540 g/l
General Aviation Rework Facility Topcoats	540 g/l

Table 1b

Type of Specialty Coating	VOC Limits (g/L)
Ablative Coating	600
Adhesion Promoter	890
Adhesive Bonding Primers: Cured at 250°F or below	850
Adhesive Bonding Primers: Cured above 250°F	1030
Adhesives: Commercial Interior	760
Adhesives: Cyanoacrylate	1,020
Adhesives: Fuel Tank	620
Adhesives: Nonstructural	360
Adhesives: Rocket Motor Bonding	890
Adhesives: Rubber-based	850
Adhesives: Structural Autoclavable	60
Adhesives: Structural Nonautoclavable	850
Antichafe Coating	660
Bearing Coating Compounds	620
Caulking and Smoothing Compounds	850
Chemical Agent-Resistant Coating	550
Clear Coating	720
Commercial Exterior Aerodynamic Structure Primer	350
Compatible Substrate Primer	350
Corrosion Prevention Compound	710

Type of Specialty Coating	VOC Limits (g/L)
Cryogenic Flexible Primer	350
Cryoprotective Coating	600
Coatings Related To Electromagnetism And/Or Other Radiation Electric Or Radiation-Effect Coating	600
Electrostatic Discharge and Electromagnetic Interference (EMI) Coating	800
Elevated Temperature Skydrol Resistant Commercial Primer	350
Epoxy Polyamide Topcoat	420
Fire-Resistant (Interior) Coating	800
Flexible Primer	350
Flight-Test Coatings: Missile or Single Use Aircraft	420
Flight-Test Coatings: All Other	840
Fuel-Tank Coating	720
High-Temperature Coating	850
Insulation Covering	740
Intermediate Release Coating	750
Lacquer	830
Maskant: Bonding Maskant	420
Maskant: Critical Use and Line Sealer Maskant	420
Maskant: Seal Coat Maskant	420
Metallized Epoxy Coating	740
Mold Release	780
Optical Anti-Reflective Coating	750
Part Marking Coating	850
Pretreatment Coating	780
Rain Erosion-Resistant Coating	420
Resin Surface Sealer	695
Rocket Motor Nozzle Coating	660
Scale Inhibitor	880
Screen Print Ink	840
Sealants: Extrudable/Rollable/Brushable Sealant	240
Sealants: Sprayable Sealant	600
Self-priming Topcoat	420
Silicone Insulation Material	850
Solid Film Lubricant	880
Specialized Function Coating	890
Temporary Protective Coating	250
Thermal Control Coating	800
Wet Fastener Installation Coating	675
Wing Coating	420

302 EMISSION CONTROL SYSTEM: As an alternative to meeting the applicable coating VOC limits set forth in Section 301, an operator can comply with this rule by operating an Emission Control System (ECS) approved by the Control Officer, provided that the control system has a combined VOC emissions capture and control equipment efficiency of at least 81 percent by weight.

303 REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT:

303.1 Operation And Maintenance (O&M) Plan Required For ECS :

- a. An owner or operator shall provide and maintain (an) O&M Plan(s) for any ECS, any other emission processing equipment, and any ECS monitoring devices that are used pursuant to this rule or to an air pollution control permit.
- b. The owner or operator shall submit to the Control Officer for approval the O&M Plans of each ECS and each ECS monitoring device that is used pursuant to this rule.
- c. An owner or operator of a facility that is required to have an O&M Plan pursuant to this subsection must fully comply with all O&M Plans that the owner or operator has submitted for approval, but which have not yet been approved, unless notified otherwise by the Control Officer in writing.

304 APPLICATION EQUIPMENT: A person shall use one or more of the following application techniques in applying any primer or topcoat to aerospace vehicles or components: flow/curtain coat; dip coat; roll coating; brush coating; cotton-tipped swab application; electrodeposition (DIP) coating; high volume low pressure (HVLP) spraying; electrostatic spray; or other coating application methods that can demonstrate and be approved by the Control Officer as having at least a 65% transfer efficiency, which is equivalent to the transfer efficiency of HVLP or electrostatic spray application methods.

305 SOLVENT CLEANING: The following requirements apply to solvent cleaning operations:

305.1 Hand-Wipe Cleaning. Cleaning solvents used in hand-wipe cleaning operations shall utilize an aqueous cleaning solvent, or have a VOC composite vapor pressure less than or equal to 45 millimeters of mercury (mm Hg) at 20°C.

305.2 Flush Cleaning. For cleaning solvents used in the flush cleaning of parts, assemblies, and coating unit components, the used cleaning solvent (except for semiaqueous cleaning solvents) must be emptied into an enclosed container or collection system that is kept closed when not in use or captured with wipers, provided they comply with the VOC handling requirements of Section 307 of this rule.

305.3 Dip Cleaning. Dip cleaning using solvents is subject to the requirements of Rule 331.

306 SPRAY GUN CLEANING: All spray guns must be cleaned by one or more of the following methods:

306.1 Enclosed spray gun cleaning system, provided that it is kept closed when not in use and leaks are repaired within 14 days from when the leak is first discovered. If the leak is not repaired by the 15th day after detection, the solvent shall be removed and the enclosed cleaner shall be shut down until the leak is repaired or its use is permanently discontinued;

306.2 Unatomized discharge of solvent into a waste container that is kept closed when not in use;

306.3 Disassembly of the spray gun and cleaning in a vat that is kept closed when not in use; or

306.4 Atomized spray into a waste container that is fitted with a device designed to capture atomized solvent emissions.

307 VOC CONTAINMENT AND DISPOSAL: All fresh and used VOC containing material, including but not limited to cleaning solvents, coatings, thinners, rags, and their residues, shall be stored in closed, leak free, legibly labeled containers when not in use. In addition, the owner or operator must implement handling and transfer procedures to minimize spills during filling and transferring the cleaning solvent to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh or used cleaning solvents.

308 EXEMPTIONS:

308.1 Coatings: The following coatings types are exempted from the VOC limits set forth in Tables 1a and 1b in Section 301 of this rule:

a. Touchup coatings;

b. Hand-held aerosol can operations;

c. DOD "classified" coatings;

d. Coating of space vehicles; and

e. Low usage coatings used in separate formulations in volumes of less than 50 gallons per year with a maximum exemption of 200 gallons total for such formulations applied annually.

308.2 Application Equipment: The following operations are exempt from the requirements of Section 304 of this rule:

a. Any situation that normally requires the use of an airbrush or an extension on the spray gun to properly reach limited access spaces;

- b. The application of specialty coatings;
- c. The application of coatings that contain fillers that adversely affect atomization with HVLP spray guns and that the permitting agency has determined cannot be applied by any of the application methods;
- d. The application of coatings that normally have a dried film thickness of less than 0.0013 centimeter (0.0005 in.) and that the permitting agency has determined cannot be applied by any of the application methods;
- e. The use of airbrush application methods for stenciling, lettering, and other identification markings; and
- f. Touch-up and repair operations.

308.3 Solvent Cleaning Operations: The following are exempt from the requirements of Section 305 of this rule:

- a. Cleaning during the manufacture, assembly, installation, maintenance, or testing of components of breathing oxygen systems that are exposed to the breathing oxygen;
- b. Cleaning during the manufacture, assembly, installation, maintenance, or testing of parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, hydrazine);
- c. Cleaning and surface activation prior to adhesive bonding;
- d. Cleaning of electronics parts and assemblies containing electronics parts;
- e. Cleaning of aircraft and ground support equipment fluid systems that are exposed to the fluid, including air-to-air heat exchangers and hydraulic fluid systems;
- f. Cleaning of fuel cells, fuel tanks, and confined spaces;
- g. Surface cleaning of solar cells, coated optics, and thermal control surfaces;
- h. Cleaning during fabrication, assembly, installation, and maintenance of upholstery, curtains, carpet, and other textile materials used on the interior of the aircraft;

- i. Cleaning of metallic and nonmetallic materials used in honeycomb cores during the manufacture or maintenance of these cores, and cleaning of the completed cores used in the manufacture of aerospace vehicles or components;
- j. Cleaning of aircraft transparencies, polycarbonate, or glass substrates;
- k. Cleaning and solvent usage associated with research and development, quality control, or laboratory testing;
- l. Cleaning operations using nonflammable liquids conducted within 5 feet of energized electrical systems. Energized electrical systems means any AC or DC electrical circuit on an assembled aircraft once electrical power is connected, including interior passenger and cargo areas, wheel wells and tail sections; and
- m. Cleaning operations identified in an Essential Use Waiver which has been reviewed and approved by the U.S. EPA and the voting parties of the International Montreal Protocol Committee [sections 604(d)(1) and (g)(2) of the Act].

308.4 General Exemptions: Cotton-tipped swabs used for very small cleaning operations and aqueous cleaning solvents are exempt from the requirements of Section 307 of this rule.

308.5 Small Sources: Sections 301 and 302 of this rule shall not apply to any one facility from which the total VOC emissions from all operations subject to this rule emit less than 15 pounds (6.8 kg) per day and less than two tons (1814 kg) per year of VOCs prior to any controls.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE: All facilities subject to this rule shall meet all applicable provisions of this rule by October 4, 1999. The intention to use an ECS in accordance with Section 302 of this rule shall be announced to the Control Officer in writing by July 6, 1999 and be in use by April 7, 2000.

SECTION 500 - MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING: Any person subject to this rule shall comply with the following requirements. Records shall be retained for five years and shall be made available to the Control Officer upon request.

501.1 Coatings: Each owner or operator using coatings listed in Section 301 of this rule shall maintain a current list of coatings in use, VOC content as

applied and records of the monthly usage of such materials in pounds per gallon or grams per liter.

501.2 Cleaning Solvents: Each owner or operator shall:

- a. Maintain a current list of all aqueous and semiaqueous hand-wipe cleaning solvents used with corresponding water contents.
- b. Maintain a current list of all vapor pressure compliant hand-wipe cleaning solvents in use with their respective vapor pressures or, for blended solvents, VOC composite vapor pressures and records of the monthly usage of such cleaning solvents.
- c. Maintain a current list of all hand-wipe cleaning processes using cleaning solvents with a vapor pressure greater than 45 mm Hg and records of the monthly usage of such cleaning solvents.

501.3 Enclosed Spray Gun Cleaners: Any person using an enclosed spray gun cleaner shall visually inspect the seals and all other potential sources of leaks at least once per month while the spray gun cleaner is in operation. Records of these inspections shall be kept and made available upon request by the Control Officer.

502 COMPLIANCE DETERMINATION: The test methods for those subparts of 40 CFR Part 60, Appendix A adopted as of July 1, 1998, as listed below, are adopted by reference as indicated. These adoptions by reference include no future editions or amendments. Copies of test methods referenced in subsection 502.1 are available at the Maricopa County Environmental Services Department, 1001 North Central Avenue, Phoenix, AZ, 85004-1942. When more than one test method is permitted for a determination, an exceedance of the limits established in the rule determined by any of the applicable test methods constitutes a violation of this rule.

502.1 Test Methods:

- a. **Coatings:** The VOC content of coatings (less water and less non-precursor organic compounds) as applied shall be determined by manufacturer's supplied data or Method 24 of 40 CFR part 60, Appendix A. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis. For waterborne (water-reducible) coatings, only manufacturer's supplied data can be used to determine the VOC content of each formulation.
- b. **Control Equipment:** Measurements of VOC emissions from control equipment shall be conducted in accordance with EPA Methods 18, 25, and/or 25A, 40 CFR 60, Appendix A.

c. Cleaning Solvents:

1. For aqueous and semiaqueous cleaning solvents, manufacturers' supplied data shall be used to determine the water content.
2. For hand-wipe cleaning solvents, manufacturers' supplied data or standard engineering reference texts or other equivalent methods shall be used to determine the vapor pressure or VOC composite vapor pressure for blended cleaning solvents.

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 349

PHARMACEUTICAL, COSMETIC AND VITAMIN MANUFACTURING OPERATIONS

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MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 349
PHARMACEUTICAL, COSMETIC AND VITAMIN MANUFACTURING OPERATIONS

SECTION 100 - GENERAL

- 101 **PURPOSE:** To limit the emission of volatile organic compounds from pharmaceutical, cosmetic and vitamin manufacturing operations.
- 102 **APPLICABILITY:** The provisions of this rule shall apply to the manufacture and/or blending of materials to make pharmaceutical, or cosmetic products or vitamins, including any process that is incidental to such operations, such as tablet coating and finishing.

SECTION 200 - DEFINITIONS: For the purpose of this rule the following definitions shall apply:

- 201 **COATING** - A film or thin layer applied to a base material called a substrate.
- 202 **CONDENSER** - A device that cools a gas stream to a temperature which removes specific organic compounds by condensation.
- 203 **COSMETIC PRODUCTS** - Any material described by the Standard Industrial Classification (SIC) Code 284, as incorporated by reference in subsection 502.1 of this rule.
- 204 **COSMETICS MANUFACTURING FACILITY** - Any plant producing or blending chemicals for use in cosmetic products and/or manufacturing cosmetic products.
- 205 **EMISSION CONTROL SYSTEM (ECS)** - A system for reducing emissions of organic compounds, consisting of both emissions collection and processing devices which are approved in writing by the Control Officer and are designed and operated in accordance with good engineering practice.
- 206 **EXEMPT COMPOUNDS** - For the purpose of this rule, the non-VOC, non-aqueous evaporating portion of a formulation; this necessarily includes all non-precursor organic compounds in addition to inorganic liquids and gases.
- 207 **IN-PROCESS TANK** - Containers used for mixing, blending, heating, reacting, holding, crystallizing, evaporating, or cleaning operations in the manufacture of pharmaceuticals, cosmetics or vitamins.
- 208 **NON-PRECURSOR ORGANIC COMPOUNDS** - Any of the organic compounds which have been designated by the EPA as having negligible photochemical reactivity. EPA designates such compounds as "exempt." A listing of the compounds is found in Rule 100 of these Air Pollution Control Rules and Regulations.

- 209 PHARMACEUTICAL MANUFACTURING FACILITY** - Any plant producing or blending chemicals for use in pharmaceutical products and/or employing chemical processes in the manufacture of pharmaceutical products. This definition includes any and all associated storage tanks, wastewater management units, or components such as pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, and instrumentation systems that are used in the manufacturing of a pharmaceutical product.
- 210 PHARMACEUTICAL PRODUCTS** - Any material described by the Standard Industrial Classification (SIC) Code 283, as incorporated by reference in subsection 502.1 of this rule, or any other fermentation, biological or natural extraction, or chemical synthesis product regulated by the Food and Drug Administration, including components (excluding excipients) of pharmaceutical formulations, or intermediates used in the production of a pharmaceutical product.
- 211 REACTOR** - A device or vessel in which one or more chemicals or reactants, other than air, are combined or decomposed in such a way that their molecular structures are altered and one or more new organic compounds are formed.
- 212 TOTAL VOC-VAPOR PRESSURE (VOC COMPOSITE PARTIAL PRESSURE)** - The sum of the partial pressures of the compounds defined as VOCs calculated according to the formula in Section 504 of this rule.
- 213 VOLATILE ORGANIC COMPOUND (VOC)** - Any organic compound that participates in photochemical reactions, except non-precursor organic compounds.

SECTION 300 - STANDARDS

- 301 REACTORS, DISTILLATION COLUMNS, CRYSTALLIZERS & CENTRIFUGES:** No person shall emit more than 6.8 kg (15 lbs) of VOC compounds per day from any reactor, distillation column, crystallizer or centrifuge unless such emissions are reduced by one of the following:

- 301.1** Surface Condensers designed to reduce VOC emissions and having the outlet gas temperature limited as follows:

TABLE 1

Vapor Pressure of VOC Compounds at 20° C (68° F)	Maximum Condenser Outlet Gas Temp. ° C (°F)
26-52 mmHg (0.5 psi to 1.0 psi)	25 (77)
52-78 mmHg (1.0 psi to 1.5 psi)	10 (50)
78-150 mmHg (1.5 psi to 2.9 psi)	0 (32)
150-300 mmHg (2.9 psi to 5.8 psi)	-15 (5)
over 300 mmHg (over 5.8 psi)	-25 (-13)

- 301.2** Any other emission control system which is approved in writing by the control officer as having a control efficiency greater than or equal to surface

condenser efficiency operated in accordance with subsection 301.1 of this rule.

302 IN-PROCESS TANKS: No person shall use any in-process tank(s) for material containing VOC unless it is fitted with a cover or other device provided for the tank which prevents VOC evaporation. The cover or device shall be closed or in place on the tank at all times except during loading or unloading of the tank.

303 SEPARATION OPERATIONS: No person shall emit more than 15 kg (33 lbs) or more of VOC compounds per day from any rotary vacuum filter or any other filter or separation device having an exposed liquid surface where the liquid contains organic compounds with a "Total VOC-Vapor Pressure" of 26 mm Hg (0.5 psia) or more at 20°C (68° F) unless such emissions are reduced by 90 percent on a mass basis.

304 STERILIZERS: No person shall emit 15 kg (33 lbs) or more per day of VOCs from any chemical sterilizer unless such emissions are reduced by at least 75 percent on a mass basis.

305 AIR DRYERS: No person shall emit 15 kg (33 lbs) or more of VOCs per day from any air dryer unless such emissions are reduced by at least 90 percent by weight.

306 TABLET COATING

306.1 Limitation - VOC Emissions: No person shall apply any coating to a pharmaceutical tablet with a VOC content in excess of 3.5 pounds of VOC per gallon of coating applied (420 g/l), excluding water, unless the emissions are controlled in accordance with the provision of subsection 306.2.

306.2 Emission Control System: As an alternative to meeting the coating limit in subsection 306.1, an owner or operator may comply with this rule by operating an Emissions Control System (ECS) approved by the Control Officer. The ECS shall meet the specifications of either one of the following:

a. The ECS shall have a combined VOC emissions capture and control equipment efficiency of at least 81% by weight, or

b. The ECS shall consist of a surface condenser operated with the outlet gas temperature as specified in Table 1 of subsection 301.1 of this rule.

307 BULK LOADING: A person shall not transfer volatile organic liquids having vapor pressures greater than 212 mm Hg (4.1 psia) at 20°C (68° F) from any rail car or tank truck into any storage tank with a capacity greater than 7,500 liters (2,000 gal.) unless organic compound emissions during transfer are reduced by 90 percent by weight.

308 STORAGE TANKS: All storage tanks that store volatile organic liquids with a vapor pressure greater than 78 mm Hg (1.5 psia) at 20 °C (68° F) shall be equipped with pressure/vacuum vents set at a minimum + 2 mm Hg (+ 0.03 psia).

309 OPERATING REQUIREMENTS: An operator shall repair all leaks from which volatile organic liquids can be observed to be dripping or seeping. The repair shall be

completed the first time the equipment is off-line for a period long enough to complete the repair. The nature of the repair should be recorded in the O&M Plan.

310 SURFACE PREPARATION AND CLEANUP SOLVENT:

310.1 A person shall use closed containers for the storage or disposal of cloth or paper used for solvent surface preparation and cleanup.

310.2 A person shall store fresh or spent solvent in closed containers.

311 STORAGE AND DISPOSAL OF VOC:

311.1 All storage of VOC-containing materials subject to evaporation, including the storage of waste solvent and waste solvent residues, shall at all times be in closed containers except when contents are added or removed.

311.2 Containers shall be legibly labeled with their contents.

312 REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT:

312.1 Operation And Maintenance (O&M) Plan Required For ECS:

a. An owner or operator shall provide and maintain (an) O&M Plan(s) for any ECS, any other emission processing equipment, and any ECS monitoring devices that are used pursuant to this Rule 349 or to an air pollution control permit.

b. The owner or operator shall submit to the Control Officer for approval the O&M Plans of each ECS and each ECS monitoring device that is used pursuant to this rule.

312.2 Providing And Maintaining ECS Monitoring Devices: Any person incinerating, adsorbing, or otherwise processing VOC emissions pursuant to this rule shall provide, properly install and maintain in calibration, in good working order and in operation, devices described in the facility's O&M Plan that indicate temperatures, pressures, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly and is properly maintained.

312.3 O&M Plan Responsibility: An owner or operator of a facility that is required to have an O&M Plan pursuant to subsection 312.1 must fully comply with all O&M Plans that the owner or operator has submitted for approval, but which have not yet been approved, unless notified otherwise by the Control Officer in writing.

313 EXEMPTIONS

313.1 Small Sources: Sections 301, 302, 303, 304, 305 and 306 of this rule shall not apply to any one facility from which the total VOC emissions from all operations subject to this rule emits less than 15 pounds (6.8 kg) per day and less than two tons (1814 kg) per year of volatile organic compounds.

313.2 Condenser Temperature: If the operation of a condenser at the exit temperature specified in Table 1 of subsection 301.1 of this rule results in freezing and consequent plugging of the condenser, the allowable exit temperature may be raised to a maximum of 2°C above the freezing point of the volatile organic compound.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE

401.1 Effective Date: Except as provided in this section, the provisions of this Rule 349 become effective on July 1, 1999. The owner or operator shall notify the Control Officer in writing by March 16, 1999 if an ECS in accordance with subsection 306.2 will be used to comply with this rule. The ECS shall be in use by December 16, 1999.

SECTION 500 - MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING: Records shall be retained for five years and shall be made available to the Control Officer upon request. Any person subject to this rule shall comply with the following requirements:

501.1 Current List

- a. Solvents:** Maintain a current list of solvents; state the VOC content of each in pounds per gallons or grams per liter. The VOC content of solvents and any liquids used as cleaning or degreasing agents shall be stated with exempt compounds such as water and non-precursors included.
- b. Vapor Pressure:** A facility subject to total VOC vapor-pressure limits shall have on site in one of the following forms the identified value of the total VOC vapor-pressure for each subject solvent being used: a manufacturer's technical data sheet, a manufacturer's safety data sheet (MSDS), or actual test results.
- c. Coatings:** Maintain a current list of coatings in use and the amount of VOCs applied.

501.2 Usage Records: Maintain monthly records showing the type and amount of each VOC containing material used and coatings applied except for materials arriving on-site with less than 2% VOC by weight.

502 COMPLIANCE DETERMINATION AND TEST METHODS: When more than one test method is permitted for determination, an exceedance of the limits by any of the applicable test methods constitutes a violation of this rule.

502.1 Compliance Determination: The following methods shall be used to determine compliance with this rule:

- a. Measurement of VOC emissions from a control device shall be conducted in accordance with USEPA Test Method 25 or 25A (40 CFR 60, Appendix A). USEPA Test Method 18 shall be used to determine emissions of exempt compounds if the Control Officer requires that such determinations need to be made.
- b. VOC content of materials having more than 10% solids by volume shall be determined using the applicable EPA Reference Method 24 or 24A (40 CFR Part 60, Appendix A). The Control Officer may use manufacturers' data sheets for routine and uncontested determination of VOC content.
- c. The VOC content of solutions, dispersions, and emulsions that have no solids or less than 5% solids shall be determined by the April 15, 1992 amended Method 31 of California's Bay Area Air Quality Management District, "Determination of Volatile Organic Compounds in Paint Strippers, Solvent Cleaners, and Low Solids Coatings."
- d. Solid-free solutions, in which all organic content is non-exempt and will certainly evaporate under Method 24 oven conditions, may be tested using the adaptation of EPA Method 415.1 as proposed by Sorrell, et. al. of EPA's Emission Measurement Center, Office of Air Quality Planning & Standards (OAQPS): "Total Organic Carbon for Offset Lithographic Solutions."
- e. The VOC content of materials believed to have between 5 and 10% solids shall be determined by either EPA Method 24 or by Bay Area Method 31.
- f. Total absolute vapor-pressure of solvents containing VOC shall be determined in accordance with ASTM Test Method D 2879-83, "Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope," 1983 edition.
- g. Temperature measurements shall be done with an instrument having an accuracy and precision of no less than \pm one (1) degree Celsius.
- h. The U.S. Government Printing Office "Standard Industrial Classification Manual, 1987" (and no future editions) is incorporated by reference and is on file at Maricopa County Environmental Services Department, 1001 N. Central Avenue, Suite 201, Phoenix, Arizona 85004-1942.

502.2 Test Methods Adopted By Reference: The test methods for those subparts of 40 CFR Part 60, Appendix A, adopted as of July 1, 1998, as listed below, are adopted by reference. The other test methods listed in subsection 502.2 are referred to by their specific dates of adoption and are also adopted by reference. These adoptions by reference include no future editions or amendments. Copies of test methods referenced in this section are available at the Maricopa County Environmental Services Department, 1001 North Central Avenue, Suite 201, Phoenix, Arizona 85004-1942.

- a. EPA Method 18 ("Measurement of Gaseous Organic Compound Emissions by Gas Chromatography") and its submethods (40 CFR 60, Appendix A).

- b. EPA Test Method 24 (“Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings”) and its submethods (40 CFR 60, Appendix A).
- c. EPA Method 25 (“Determination of Total Gaseous Nonmethane Organic Emissions as Carbon”) and its submethods (40 CFR 60, Appendix A).
- d. California’s Bay Area Air Quality Management District (BAAQMD) Method 31 (April 15, 1992), “Determination of Volatile Organic Compounds in Paint Strippers, Solvent Cleaners, and Low Solids Coatings”.
- e. EPA Method 415.1 as proposed by Sorrell, et. al. of EPA’s Emission Measurement Center, Office of Air Quality Planning & Standards (OAQPS): “Total Organic Carbon for Offset Lithographic Solutions,” 1992.
- f. ASTM Test Method D 2879-83, "Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope," 1983 edition.

503 CONDENSER TEMPERATURE: In cases where the condenser outlet gas temperature is not readily measurable due to negligible gas flow rate, the temperature of the condenser coolant may be used in lieu of condenser outlet gas temperature. In such cases, an exceedance of coolant temperature is an exceedance of the outlet gas temperature limits in Table 1, subsection 301.1 of this rule.

504 FORMULA FOR TOTAL VOC VAPOR PRESSURE: The sum of the partial pressures of the compounds defined as VOCs may be calculated by using the following formula:

$$P p_c = \frac{\sum_{i=1}^n (W_j)(VP)}{18 + \sum_{j=1}^m \frac{W_{ej}}{MW_{ej}} + \sum_{i=1}^n \frac{W_i}{MW_i}}$$

- W_i = Weight of the “i”th VOC compound in grams
- W_w = Weight of water in grams
- W_{ej} = Weight of the “j”th non-precursor compound in grams
- MW_j = Molecular weight of the “i”th VOC compound in grams per gram mole,
e.g., one gram-mole of isopropyl alcohol weighs 60 grams
- MW_{ej} = Molecular weight of the “j”th non-precursor compound,
e.g., 1 gram-mole of acetone weighs 58 grams
- $P p_c$ = VOC composite partial pressure at 20°C in mm mercury (Hg)
- VP = Vapor pressure of the “i”th VOC compound at 20°C in mm Hg
- 18 = Weight of one gram-mole of water

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- (b) EPA Test Method 2A - Direct Measurement of Gas Volume Through Pipes and Small Ducts
- (c) EPA Test Method 2C - Determination of Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts (Standard Pitot Tube)
- (d) EPA Test Method 2D - Measurement of Gas Volume Flow Rates in Small Pipes and Ducts

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 350
STORAGE AND TRANSFER OF ORGANIC LIQUIDS (NON-GASOLINE) AT AN ORGANIC
LIQUID DISTRIBUTION FACILITY**

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Revised 07/13/1988; Revised 04/06/1992; Revised 11/02/2016

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS REGULATION III –
CONTROL OF AIR CONTAMINANTS**

**RULE 350
STORAGE AND TRANSFER OF ORGANIC LIQUIDS (NON-GASOLINE) AT AN ORGANIC LIQUID
DISTRIBUTION FACILITY**

SECTION 100 – GENERAL

- 101 PURPOSE:** To limit emissions of volatile organic compounds (VOCs) from organic liquids (non-gasoline) under actual storage and transfer conditions at an organic liquid distribution facility.
- 102 APPLICABILITY:** This rule is applicable to the bulk storage and transfer of any organic liquid (non-gasoline) with a true vapor pressure (TVP) greater than 0.5 psia at an organic liquid distribution facility. Compliance with the provisions of this rule shall not relieve any owner or operator subject to the requirements of this rule from complying with any other federally enforceable New Sources Performance Standards (NSPS) and National Emissions Standards for Hazardous Air Pollutants (NESHAP). In such cases, the most stringent standard shall apply.
- 103 EXEMPTIONS:**
 - 103.1 Total Exemptions:** For the purposes of this rule, the following are exempt from this rule:
 - a. Gasoline facilities subject to Rule 351 of these rules;
 - b. Gasoline, including aviation gasoline, kerosene, diesel fuel, asphalt and heavier distillate oils and fuel oils;
 - c. Fuel consumed or dispensed at the facility directly to user such as fleet refueling, that support the operation of the facility;
 - d. Hazardous waste;
 - e. Wastewater or ballast water; and

- f. Any non-crude oil liquid with an annual average TVP less than 0.7 kilopascals (0.1 psia). [40 CFR §63.2406]

103.2 Partial Exemptions:

- a. Stationary storage tanks and containers with a capacity of less than 250 gallons (946.35 L) are exempt from Section 301 and 302 of this rule.
- b. An organic liquid distribution facility built prior to October 2, 1978, is not required to have a vapor loss control system at the transfer rack when all of the following are complied with:
 - (1) The distribution facility transfers less than 120,000 gallons (454,800 l) of organic liquid (non-gasoline) into cargo tanks in any consecutive 30-day period.
 - (2) Any organic liquid distribution facility that becomes subject to all of the provisions of this rule by exceeding the threshold in Section 103.2(b)(1) of this rule, will remain subject to the rule provisions even if its output later falls below the threshold.
 - (3) Keep current records of amount of organic liquid transferred and keep them readily accessible to the Department upon request for at least five (5) years.
 - (4) Transfer organic liquid using submerged fill only.
 - (5) The owner or operator of the organic liquid distribution facility shall observe all parts of the transfer and shall discontinue the transfer if any liquid or vapor leaks are observed.
- c. **Submerged Fill:** An organic liquid (non-gasoline) storage tank is exempt from the requirement that a submerged fill discharge pipe be fully submerged when:
 - (1) The tank is being drained completely.
 - (2) The tank is being initially filled or filled after being completely drained.
- d. A stationary pressure tank maintaining working pressure sufficient at all times to prevent organic vapor loss to the atmosphere is exempt from Section 302 of this rule.
- e. An owner or operator is exempt from the requirement that the roof be floating when the tank is being drained completely and when it is being filled, as long as both processes are accomplished continuously and as rapidly as practicable.
- f. The owner or operator is exempted from the requirements for secondary seals and the secondary seal gap criteria when performing gap measurements or inspections of the primary seal.
- g. **Opening of Hatches, Vent Valves or Other Vapor Sealing Devices:**
 - (1) A hatch, vent valve or other vapor sealing device may be opened for vacuum relief on a cargo tank or rail car when the organic liquid is in the process of being transferred from the cargo tank or rail car into a storage tank. Reclose hatch, vent valve or other vapor sealing device at the completion of the transfer process.
 - (2) When VOC vapors from organic liquids are present within a cargo tank, authorized government agents as well as owners or operators and their contractors may open vapor containment equipment while performing operations required by these Maricopa County Air Pollution Control Regulations or by other statutory entities, but shall be restricted as follows unless otherwise approved in advance by the Control Officer:
 - (a) Wait at least three (3) minutes after transfer is complete or cargo tank has come to

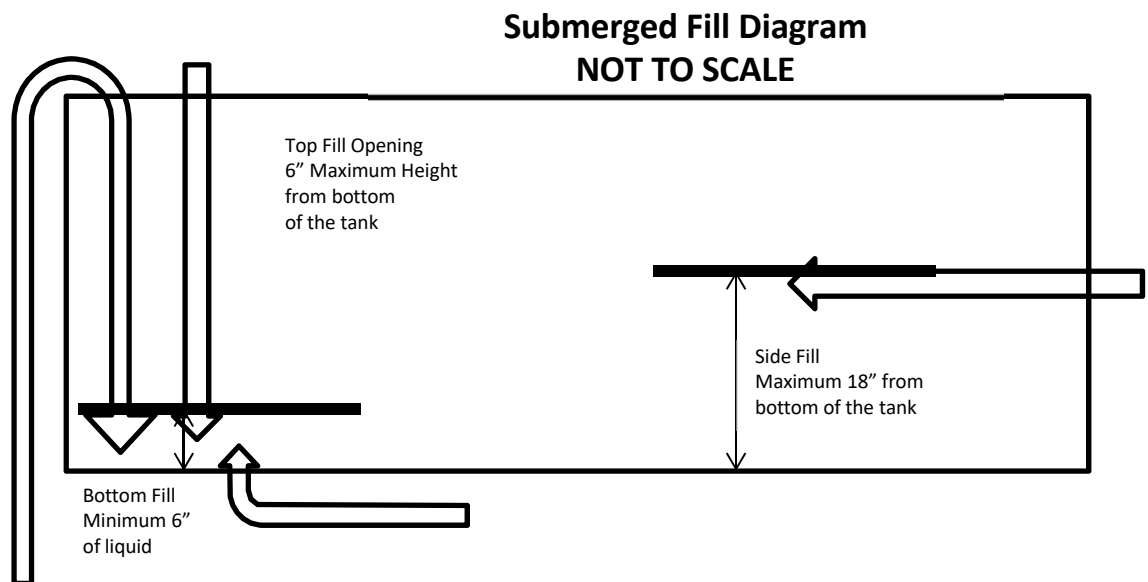
a complete stop before opening hatch or other vapor seal.

- (b) Reclose hatch or other vapor sealing device within 3 minutes of opening.
- (c) Limit wind speed at opened hatch or other opened sealing device to not more than three (3) mph (1.34 m/sec).

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

- 201 CARGO TANK:** A liquid-carrying tank permanently attached and forming an integral part of a motor vehicle or truck trailer. For the purposes of this rule, vacuum trucks used exclusively for maintenance or spill response are not considered cargo tanks. [40 CFR §63.2406]
- 202 CONTAINER:** A portable unit in which a material can be stored, transported, treated, disposed of, or otherwise handled. Examples of containers include, but are not limited to, drums and portable cargo containers known as “portable tanks” or “totes.” [40 CFR §63.2406]
- 203 EXCESS ORGANIC LIQUID DRAINAGE:** More than 10 milliliters (0.34 fluid ounces or 2 teaspoonsful) of organic liquid lost from the end of a fill hose (or vapor hose if one is in use) in the process of connecting or disconnecting the hose; or any quantity of organic liquid escaping out the end of such a hose that wets any area(s) on the ground having an aggregate area greater than 113 square inches, or the perimeter of which would encompass a circle of 12 inches (30.5 cm) diameter.
- 204 EXTERNAL FLOATING ROOF STATIONARY STORAGE TANK:** An open top storage tank with a floating roof consisting of a double deck or pontoon single deck that rests upon and is supported by the liquid being contained.
- 205 GASOLINE:** Any petroleum distillate, petroleum distillate/alcohol blend, petroleum distillate/organic compound blend, or alcohol that meets both of the following conditions:
 - 209.1** Has a Reid vapor pressure between 4.0 and 14.7 psi (200–760 mm Hg.), as determined by ASTM D323-15a; and
 - 209.2** Is used as a fuel for internal combustion engines. [40 CFR 63.11100]
- 206 INTERNAL FLOATING ROOF STATIONARY STORAGE TANK WITH FIXED COVERING:** A stationary storage tank with a floating cover or roof that rests upon or is floated upon the liquid being contained, and that also has a fixed roof on top of the tank shell. For the purposes of this rule, an external floating roof stationary storage tank that has been retrofitted with a geodesic dome or other fixed roof shall be considered to be an internal floating roof stationary storage tank.
- 207 LEAK FREE:** A condition in which there is no organic liquid escape or seepage of more than 3 drops per minute from organic liquid storage, handling, and ancillary equipment, including, but not limited to, seepage and escapes from above ground fittings.
- 208 ORGANIC LIQUID:** Any organic compound which exists as a liquid under any actual conditions of use, transport or storage. For the purposes of this rule, gasoline is not considered an organic liquid.
- 209 ORGANIC LIQUID DISTRIBUTION FACILITY:** A stationary source that primarily receives and distributes organic liquids that are manufactured and consumed by other parties. This includes the combination of activities and equipment used to store or transfer organic liquids into, out of, or within a plant site regardless of the specific activity being performed. Activities include, but are not limited to, storage, transfer, blending, compounding and packaging. [40 CFR 63.2406]
- 210 STATIONARY STORAGE TANK:** Any tank, reservoir or other container used to store, but not transport, organic liquids.
- 211 SUBMERGED FILL:** Any organic liquid discharge pipe or nozzle which meets at least one of the applicable specifications:

- 211.1 Top-Fill or Bottom-Fill:** The end of the discharge pipe or nozzle is totally submerged when the liquid level is six (6) inches (15 cm) from the bottom of the tank.
- 211.2 Side-Fill:** At its highest point within the storage tank, the end of the discharge pipe or nozzle is totally submerged when the liquid level is eighteen (18) inches (46 cm) from the bottom of the tank.
- 211.3 API Standard 650 Compliant:** A floating roof storage tank meets the submerged fill requirements in this rule, if the discharge pipe or nozzle meets both of the following requirements:
- Is kept completely submerged, including when the roof rests on its legs, except when the tank is being emptied completely and refilled; and
 - Is designed and installed according to the API Standard 650.



- 212 TRUE VAPOR PRESSURE (TVP):** Absolute vapor pressure of a liquid at its existing temperature of storage and handling.
- 213 VAPOR BALANCE SYSTEM:** A system of vapor tight piping, hoses, equipment and devices which collect and return displaced vapors between a cargo tank and a storage tank.
- 214 VAPOR COLLECTION/PROCESSING SYSTEM:** A vapor loss control system consisting of a vapor gathering subsystem capable of collecting the organic vapors and organic gases plus a second subsystem capable of processing such vapors and gases, preventing at least 95 percent of the volatile organic compounds entering it from entering the atmosphere.
- 215 VAPOR LOSS CONTROL SYSTEM:** A system for reducing emissions to the atmosphere, consisting of an abatement device and a collection system, which achieves the abatement efficiency or emission limit during the transfer operation at an organic liquid distribution facility.
- 216 VAPOR TIGHT:** A condition in which a suitable detector at the site of (potential) leakage of vapor shows less than 10,000 ppmv when calibrated with methane or the detector shows less than 1/5 lower explosive limit (LEL) when calibrated with a gas specified by the manufacturer and used according to the manufacturer's instructions.

SECTION 300 – STANDARDS

301 ORGANIC LIQUID STATIONARY STORAGE TANK REQUIREMENTS:

- 301.1 All Stationary Storage Tanks with a Capacity Greater than 250 Gallons (946 L):** An owner or operator of a stationary storage tank with a capacity greater than 250 gallons (946 l) shall store organic liquid with a TVP of 0.5 psia (26 mm Hg) or more in a stationary storage tank meeting all of the following:
- a. Each stationary storage tank has a fill pipe that is maintained leak free and vapor tight when organic liquid is not in the process of being transferred.
 - b. Each stationary storage tank has a permanently installed submerged fill pipe. Where because of government regulation, including, but not limited to, Fire Department codes, such submerged fill pipe cannot be installed, a nozzle extension that reaches within six (6) inches (15 cm) of the tank bottom shall be used to fill the tank.
 - c. Each fixed roof stationary storage tank has a pressure/vacuum valve that complies with both Section 301.1(c)(1) and 301.1(c)(2) of this rule. An owner or operator shall:
 - (1) Install a pressure/vacuum vent valve that is either: (a) Set within ten percent (10%) of the tank's maximum, safe working-pressure; or
 - (b) Set at least at 0.5 psia (25.9 mm Hg) or per manufacturer's recommendation.
 - (2) Maintain the pressure/vacuum vent in good working order.
- 301.2 Organic Liquid Stationary Storage Tanks with a Capacity of 20,000 Gallons (75,700L) to Less than 40,000 Gallons (151,400 L):** An owner or operator of an organic liquid stationary storage tank with a capacity between 20,000 gallons (75,700 l) but less than 40,000 gallons (151,400 l), shall store organic liquids with a TVP equal to or greater than 0.5 psia but less than or equal to 11.0 psia ($26 \geq \text{mmHg} \leq 569$) in a stationary storage tank meeting all of the following requirements:
- a. The stationary storage tank shall:
 - (1) Be maintained leak free.
 - (2) Be maintained vapor tight.
 - (3) Be equipped with at least one of the vapor loss control systems specified in Section 301.2(b) of this rule.
 - b. An owner or operator shall install and maintain at least one of the following vapor loss control systems as described in Section 302 of this rule:
 - (1) Install and maintain a vapor recovery system which collects and returns displaced vapors to the cargo tank using vapor-tight fittings and lines; or
 - (2) Install and maintain an external floating roof stationary storage tank; or
 - (3) Install and maintain an internal floating roof stationary storage tank with a fixed cover; or
 - (4) Install and maintain a vapor collection/processing system.
- 301.3 Organic Liquid Stationary Storage Tanks with a Capacity Equal to or Greater than 40,000 Gallons (151,400 L):** An owner or operator of an organic liquid stationary storage tank with a capacity equal to or greater than 40,000 gallons (151,400 l) shall store organic liquids with a TVP equal to or greater than 0.5 psia

but equal to or less than 11.0 psia ($26 \geq \text{mmHg} \leq 569$) in a stationary storage tank meeting all of the following requirements, unless such stationary storage tank is equipped with at least one of the vapor loss control systems described in Section 302 of this rule:

- a. Install and maintain an external floating roof stationary storage tank; or
- b. Install and maintain an internal floating roof stationary storage tank with a fixed cover; or
- c. Equip the stationary storage tank with a vapor collection/processing system as described in Section 302 of this rule.

301.4 Organic Liquid Stationary Storage Tanks Storing Liquids Having a TVP Greater Than 11 PSIA: An owner or operator shall place, store, or hold organic liquid with a TVP greater than 11.0 psia (569 mm Hg) in a stationary storage tank that meets at least one of the vapor loss control methods specified below:

- a. Maintain a working pressure in the stationary storage tank that is sufficient at all times to prevent organic vapor loss to the atmosphere.
- b. Equip the stationary storage tank with a vapor collection/processing system as described in Section 302 of this rule.

**Table 350-1
Summary of Organic Liquid (Non-Gasoline) Stationary Storage Tank VOC Emission Control Requirements**

	True Vapor Pressure of Organic Liquid in Tank		
	0.5 \geq psia <1.5 (26 \geq mm Hg <77.5)	1.5 \geq psia \leq 11.0 (77.5 \geq mm Hg \leq 569)	>11.0 psia (>569 mm Hg)
Tank Capacity	Applicable Rule 350 Section:	Applicable Rule 350 Section:	Applicable Rule 350 Section:
All organic liquid (non-gasoline) stationary storage tanks >250 gallons	Section 301.1	Section 301.1	Section 301.4
All organic liquid (non-gasoline) storage tanks 20,000 gallons to <40,000 gallons	Section 301.1	Section 301.1 and Section 301.2	Section 301.4
All organic liquid (non-gasoline) storage tanks \geq 40,000 gallons	Section 301.1	Sections 301.1 and Section 301.3	Section 301.4

302 VAPOR LOSS CONTROL SYSTEM:

302.1 External Floating Roof Stationary Storage Tanks: An external floating roof stationary storage tank must meet the following requirements:

- a. The owner or operator of an external floating roof stationary storage tank and vapor balance system, or vapor collection/processing system, or vapor loss control system shall properly install, properly maintain and properly operate the equipment.
- b. The owner or operator of an external floating roof stationary storage tank shall operate an external floating roof tank subject to the provisions of this rule, except for tanks having metallic shoe primary seals onto which secondary seals were installed prior to July 13, 1988, and unless a secondary seal extends from

the roof to the tank shell (a rim-mounted seal) and is not attached to the primary seal.

c. External Floating Roof Requirements:

- (1) The floating roof shall rest on and be supported by the surface of the liquid contents.
- (2) The floating roof shall be equipped with a continuous primary seal to close the space between the roof eave and tank wall, except as provided in Section 103.2 of this rule.
- (3) The floating roof shall have a continuous secondary seal which is of a design that is in accordance with accepted standards of the organic liquids industry. The secondary seal shall meet the requirements of Section 302.1(d) of this rule.

d. Secondary Seal Requirements:

- (1) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge or primary seal and the tank wall, except as provided in Section 302.1(d)(2) of this rule.
- (2) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 1.0 square inch per foot (21.2 cm² per meter) of tank diameter. Determinations of gap area shall only be made at the point(s) where the gaps exceed one eighth (1/8) inch (3 mm). The width of any portion of any gap shall not exceed one half (1/2) inch (1.27 cm).
- (3) Stationary storage tanks constructed after July 13, 1988, shall have a secondary seal that is rim-mounted.

e. External Floating Roof Openings:

- (1) Floating roof tanks subject to the provisions of Section 302.1 of this rule shall have no visible holes, tears or other openings in the seal or in any seal fabric.
- (2) The accumulated area of gaps between a tank's wall and primary seal shall not exceed ten (10) square inches per foot of tank diameter (212 cm² per meter).
- (3) The width of any portion of any gap shall not exceed one and one half (1½) inches (3.8 cm).
- (4) Where applicable, all openings except drains shall be equipped with a cover seal or lid.
- (5) Where applicable, the cover seal or lid shall be in a closed position at all times, except when the system is in actual use.
- (6) Automatic bleeder vents shall be closed at all times, except when the roof is floated off or landed on the roof leg supports.
- (7) Rim vents, if provided, shall be set to open only when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

302.2 Internal Floating Roof Stationary Storage Tanks with Fixed Covering: An internal floating roof stationary storage tank and its appurtenances shall meet the applicable requirements as follows:

- a. The owner or operator of an internal floating roof stationary storage tank and associated emission control equipment shall properly install, maintain and operate the equipment.
- b. Organic liquid stationary storage tanks for which construction, reconstruction or modification commenced after July 23, 1984, must comply with all applicable requirements of the EPA New Source Performance Standard (NSPS), 40 CFR 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. This federal standard is adopted and incorporated by reference in Rule 360 and Rule 370 of these rules.
- c. All stationary storage tanks not subject to Section 302.2(b) of this rule must comply with one of the following:
 - (1) Sections of 40 CFR Part 60, Subpart Kb that are not addressed in Section 302.2(b) of this rule; or
 - (2) Have at least one continuous seal which completely covers the space between the roof edge and tank wall, except as provided in Section 302.2(d) of this rule, and meet at least one of the following requirements:
 - (a) Have a contact-type roof resting completely on the liquid surface.
 - (b) Have a liquid mounted seal.
 - (c) Have two seals, a primary and a secondary.
- d. **Internal Floating Roof Openings:**
 - (1) Floating roof tanks subject to the provisions of Section 302.2 of this rule shall have no visible holes, tears or other openings in the seal or in any seal fabric.
 - (2) The accumulated area of gaps between a tank's wall and primary seal shall not exceed ten (10) square inches per foot of tank diameter (212 cm² per meter).
 - (3) The width of any portion of any gap shall not exceed one and one half (1½) inches (3.8 cm).
 - (4) Where applicable, all openings except drains shall be equipped with a cover seal or lid.
 - (5) Where applicable, the cover seal or lid shall be in a closed position at all times, except when the system is in actual use.
 - (6) Automatic bleeder vents shall be closed at all times, except when the roof is floated off or landed on the roof leg supports.
 - (7) Rim vents, if provided, shall be set to open only when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

- 302.3 Vapor Collection/Processing System:** This vapor loss control system consists of a vapor gathering subsystem capable of collecting the organic vapors and organic gases plus a second subsystem capable of processing such vapors and gases, preventing at least 95 percent by weight of the volatile organic compounds entering it from escaping to the atmosphere.
- a. An owner or operator of an organic liquid distribution facility that has an organic liquid throughput greater than 600,000 gallons (2,271,247 l) in any consecutive 30-day period, shall install, operate and maintain a vapor loss control system.
 - b. The vapor processing subsystem shall be vapor-tight except for the designated exhaust.
 - c. Any tank gauging or sampling device on a tank, vented to such a vapor loss control system, shall be equipped with a vapor-tight cover which shall be closed at all times except during gauging or sampling procedures.
 - d. All pressure-vacuum vent valves shall be constructed and maintained in a vapor-tight condition except when the operating pressure exceeds the valve release setting.

303 EQUIPMENT MAINTENANCE AND REPAIR: The owner or operator of an organic liquid distribution facility shall:

- 303.1** Maintain the equipment associated with the storage and transfer of organic liquid to be all of the following:
- a. Leak free;
 - b. Vapor tight; and
 - c. In good working order.
- 303.2** Repair and Retest: The owner or operator of a vapor loss control system that exceeds the standards of this rule shall notify the Control Officer immediately and observe the following time schedule for corrective action:
- a. Concentrations at or above the lower explosive limit must be brought into compliance within 24 hours of detection.
 - b. For vapor collection/processing equipment subject to gas-tight standard, leak concentrations exceeding 10,000 ppm but less than 50,000 ppm as methane shall be brought into compliance within 5 days of detection.
 - c. Except as the Control Officer otherwise specifies, a leak source must be tested after presumed leak-correction within fifteen (15) minutes of recommencing use. If leak standards are exceeded in this test, the use of the leak-correction equipment shall be discontinued until correction is verified by retesting.

304 GENERAL REQUIREMENTS FOR THE TRANSFER OF ORGANIC LIQUID: The owner or operator of an organic liquid distribution facility shall comply with the following:

304.1 Transfer of Organic Liquid into Stationary Storage Tanks:

- a. Comply with Section 303.1 of this rule.

- b. Verify the proper connection to a vapor balance system or other vapor loss control systems prior to an organic liquid transfer at facilities that utilize a vapor balance system.
- c. Verify the proper disconnection from a vapor balance system or other vapor loss control systems at the completion of an organic liquid transfer at facilities that utilize a vapor balance system.
- d. Minimize spills during storage and transfer of organic liquids.
- e. Clean up spills as expeditiously as practicable.
- f. Cover all open organic liquid containers when not in use.
- g. Minimize organic liquid sent to open waste collection systems that collect and transport organic liquid to reclamation and recycling devices, such as oil/water separators.

304.2 Transfer of Organic Liquids into Cargo Tanks:

- a. Verify that the cargo tank has been demonstrated to be vapor tight.
- b. Verify the proper connection to a vapor balance system or other vapor loss control systems prior to an organic liquid transfer.
- c. Verify the proper disconnection from a vapor balance system or other vapor loss control systems at the completion of an organic liquid transfer.
- d. Minimize spills during storage and transfer of organic liquids.
- e. Clean up spills as expeditiously as practicable.
- f. Cover all open organic liquid containers when not in use.
- g. Minimize organic liquid sent to open waste collection systems that collect and transport organic liquid to reclamation and recycling devices, such as oil/water separators.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 ORGANIC LIQUID (NON-GASOLINE) STATIONARY STORAGE TANK INSPECTIONS

Inspections of External Floating Roof Stationary Storage Tanks:

- a. The owner or operator of any external floating roof stationary storage tank subject to this rule shall visually inspect the tank and seals at least once every six (6) months to determine ongoing compliance with the applicable standards of this rule pertaining to the tank. Determinations of secondary seal gap area on external floating roof stationary storage tanks shall be made only once per year. Records of these inspections shall be maintained and shall be made available to the Control Officer upon request.
- b. **Annual and Empty Tank Inspection:** The owner or operator of any stationary storage tank which uses an external floating roof to meet the vapor loss control system requirements of this rule shall conduct a visual inspection each time the external floating roof stationary storage tank is emptied and degassed or at least once a year. The visual inspection shall include all of the following:

- (1) Verify the secondary seal covers the space between the roof edge and the tank.
- (2) Measure the gaps between the tank wall and the secondary seal. The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm² (3.29 square inches) per meter of tank diameter and the width of any portion of any gap shall not exceed 1.27 cm (0.2 inch).
- (3) Verify there are no holes, tears, or other openings in the seal or seal fabric.

c. Five-Year, Full Circumference Inspections of External Floating Roof Stationary Storage Tanks: The owner or operator of any external floating roof stationary storage tank of 20,000 gallons (75,700 l) or more storing organic liquids (non-gasoline) shall conduct a complete inspection of the external floating roof tank each time the tank is emptied and degassed or at least once every five (5) years. This inspection can be performed while the tank is in service. The inspection shall include all of the following:

- (1) Perform a complete inspection of the organic liquid (non-gasoline) storage tank as described in Section 401.1(a) of this rule.
- (2) Perform a complete inspection of the primary seal and floating roof.
- (3) Measure gap areas and maximum gap. The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 21.2 cm² (39.9 square inches) per meter of tank diameter and the width of any portion of any gap shall not exceed 3.81 cm (0.59 inch).

Inspections of Internal Floating Roof Stationary Storage Tanks with a Fixed Covering:

- a. The owner or operator of any internal floating roof stationary storage tank subject to this rule shall visually inspect the tank and seals at least once every six (6) months to determine ongoing compliance with the applicable standards of this rule pertaining to the tank. Records of these inspections shall be maintained and shall be made available to the Control Officer upon request.
- b. The owner or operator of any stationary storage tank which uses an internal floating roof to meet the vapor loss control system requirements of this rule shall conduct a visual inspection each time the internal floating roof stationary storage tank is emptied and degassed or at least once a year. The visual inspection can be made through manholes or rood hatches and shall include all of the following:
 - (1) The internal floating roof shall not have an accumulation of liquid on the roof.
 - (2) The seal shall be attached.
 - (3) The seal shall not have any holes or tears.

Five Year Inspection and Empty Tank Inspection: The owner or operator of any stationary storage tank which uses an internal floating roof to meet the vapor loss control system requirements of this rule shall conduct a visual inspection each time the internal floating roof stationary storage tank is emptied and degassed or at least once every five (5) years. The visual inspection shall include all of the following:

- a. The internal floating roof shall be free of any defects.

- b. The primary seal shall not have any holes, tears or other openings.
- c. The secondary seal if one is in service, shall not have any holes, tears or other openings.
- d. Gaskets shall prevent liquid surfaces from exposure to atmosphere.
- e. The slotted membrane shall not have more than a ten percent (10%) open area.

402 MONTHLY ORGANIC LIQUID TRANSFER EQUIPMENT LEAK INSPECTIONS: The owner or operator shall perform monthly inspections, while organic liquid is being transferred, for liquid and vapor leaks and for faulty equipment. Monthly inspections leak detection methods can include one or more of the following methods:

Incorporation of sight, sound, smell and/or touch.

Use of a combustible gas detector (CGD) or organic vapor analyzer (OVA) pursuant to Section 501 of this rule.

Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3, use of a soap solution pursuant to Section 501 of this rule.

Use of an optical gas imaging instrument calibrated according to manufacturing specifications and used according to Section 501 of this rule.

403 ORGANIC LIQUID (NON-GASOLINE) STORAGE TANK INSPECTIONS-AVAILABILITY TO CONTROL OFFICER:

Annual Inspections of External Floating Roof Tanks: The owner or operator of any stationary storage tank which uses an external floating roof to meet the vapor loss control system requirements of this rule shall make the primary seal envelope and the secondary seal available for unobstructed inspection by the Control Officer on an annual basis. The primary seal envelope shall be made available for inspection at a minimum of four (4) locations selected along its circumference at random by the Control Officer. If the Control Officer detects a violation as a result of any such inspection, the Control Officer may require such further unobstructed inspection of the seals as may be necessary to determine the seal condition for its entire circumference.

Annual Inspections of Internal Floating Roof Tanks: The owner or operator of any stationary storage tank which uses an internal floating roof to meet the vapor loss control system requirements of this rule shall make the entire tank including the internal floating roof available for inspection prior to filling. The internal floating roof shall be made available for visual inspection through the manholes or roof hatches on the fixed covering on an annual basis.

Five-Year, Full Circumference Inspections: The owner or operator of a floating roof stationary storage tank of 20,000 gallons (75,700 l) or more storing organic liquids (non-gasoline) shall make the primary seal envelope available for inspection by the Control Officer for its full length every five (5) years. This inspection can be performed while the tank is in-service. However, if the secondary seal is removed or if the tank is drained and cleaned by the owner or operator for any reason, it shall be made available for such inspection at that time. The owner or operator shall provide notification to the Control Officer no less than seven (7) working days prior to removal of the secondary seal.

404 OTHER AGENCIES' REQUIREMENTS: Compliance with this rule does not relieve or otherwise affect the owner's or operator's obligation to comply with any other applicable

federal, state, or local legal requirement including, but not limited to, rules promulgated by Arizona Department of Agriculture – Weights and Measures Services Division, local fire department codes, and local zoning ordinances.

SECTION 500 – MONITORING AND RECORDS

501 MONITORING FOR LEAKS

501.1 Combustible Gas Detector (CGD) or Organic Vapor Analyzer (OVA) – Test

Procedure: During the transfer of organic liquids into a cargo tank, the peripheries of all potential sources of leakage at the organic liquid distribution facility are checked with a CGD or OVA as follows:

- a. **Calibration:** Within four (4) hours prior to monitoring, the CGD or OVA shall be properly calibrated for a 20 percent lower explosive limit (LEL) response or to 10,000 ppm with methane.
- b. **Probe Distance:** The probe inlet shall be one (1) inch (2.5 cm) or less from the potential leak source when searching for leaks. The probe inlet shall be one (1) inch (2.5 cm) from the leak source when the highest detector reading is being determined for a discovered leak. When the probe is obstructed from moving within one (1) inch (2.5 cm) of an actual or potential leak source, the closest practicable probe distance shall be used.
- c. **Probe Movement:** The probe shall be moved slowly, not faster than 1.6 inches per second (4 centimeters per second). If there is any meter deflection at an actual or potential leak source, the probe shall be positioned to locate the point of highest meter response.
- d. **Probe Position:** The probe inlet shall be positioned in the path of the vapor flow from an actual or potential leak such that the central axis of the probe-tube inlet shall be positioned coaxially with the path of the most concentrated vapors.
- e. **Wind:** Wind shall be blocked as much as possible from the space being monitored. The monthly inspections leak detection tests required by Section 402 of this rule shall be valid only when wind speed in the space being monitored is five (5) mph or less.
- f. **Data Recording:** The highest detector reading and location for each incidence of detected leakage shall be recorded along with the date and time. If no organic liquid vapor is detected, that fact shall be entered into the record.

501.2 Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3:

- a. Spray a soap solution over all potential leak sources. The soap solution may be a commercially available leak detection solution or may be prepared using concentrated detergent and water. A pressure sprayer or squeeze bottle may be used to dispense the solution.
- b. Observe the potential leak sites to determine if any bubbles are formed.
 - (1) If no bubbles are observed, the source is presumed to have no detectable vapor leaks.
 - (2) If any bubbles are observed, the instrument techniques of Section 501.1 of this rule shall be used to determine if a vapor leak exists.

- 501.3 Optical Gas Imaging:** A certified operator of a calibrated optical gas imaging device may use an optical gas imaging instrument to identify vapor leaks. If a vapor leak is detected, the instrument techniques listed in Section 501.1 of this rule shall be used to determine if a vapor leak exists.
- 501.4** Any instrument used for the measurement of organic compound concentration shall be calibrated according to manufacturer's instructions or in accordance with EPA Reference Method 21 as incorporated by reference in Maricopa County Air Pollution Control Regulations, Appendix G, Incorporated Materials.
- 502 TVP RECORDS:** The owner or operator of an organic liquid distribution facility shall keep accurate records listed in Section 502 of this rule.
- 502.1** An owner or operator shall keep accurate records of organic liquids stored in each stationary storage tank subject to this rule.
- 502.2** The temperature of the contents of each stationary storage tank subject to this rule shall be determined and recorded using at least one of the following methods:
- a.** Take the actual temperature of the contents of the stationary storage tank each week and record the weekly temperature of the contents of each stationary storage tank.
 - b.** Obtain the maximum local monthly average ambient temperature as reported by the National Weather Service and record monthly for each stationary storage tank.
 - c.** Record monthly AP 42, Section 7.1 emission estimation procedures for each stationary storage tank.
- 502.3** The TVP of each organic liquid in each stationary storage tank subject to this rule shall be recorded at least once each month.
- 503 LEAK INSPECTION RECORDS:** The owner or operator of an organic liquid distribution facility shall keep a log documenting each leak inspection. The log shall include the items listed below:
- 503.1** The owner or operator shall sign the log at the completion of each monthly inspection for equipment leaks.
- 503.2** Each monthly inspection log shall contain a list, summary description or diagram(s) showing the location of all equipment at the organic liquid distribution facility.
- 503.3** Each monthly inspection log shall include any maintenance that occurred.
- 503.4** Each annual inspection log shall include any maintenance that occurred.
- 503.5** These records shall be kept a minimum of five (5) years.
- 503.6** Additional Record Requirements for Use of Optical Gas Imaging Instruments: An owner or operator using an optical gas imaging instrument for leak inspections shall date and time stamp the video records of every monitoring event where an optical gas imaging instrument was used.
- 504 COMPLIANCE INSPECTIONS:** The Control Officer, at any time, may monitor a cargo tank's vapor collection/processing system, an organic liquid transfer rack's vapor loss control system, an organic liquid distribution facility, or a vapor collection/processing system for vapor leaks by the test methods described in Section 506 of this rule.

505 RECORDS RETENTION: Records and information required by this rule shall be retained for at least five (5) years.

506 COMPLIANCE DETERMINATION - TEST METHODS INCORPORATED BY REFERENCE: The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods are incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. Alternative test methods as approved by the Administrator or other EPA-approved test methods may be used upon prior written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method will constitute a violation. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department, 1001 N. Central Avenue, Suite 125, Phoenix, AZ 85004-1942.

506.1 EPA Test Methods:

- a. EPA Method 2A - Direct Measurement of Gas Volume through Pipes and Small Ducts.
- b. EPA Method 18 - Measurement of Gaseous Organic Compound Emissions by Gas Chromatography.
- c. EPA Method 21 - Determination of Volatile Organic Compound Leaks.
- d. EPA Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3
- e. EPA Method 25A - Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer.
- f. EPA Method 25B - Determination of Total Gaseous Organic Concentration Using a Nondispersive Infrared Analyzer.
- g. EPA Method 27 - Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure Vacuum Test.
- h. Optical Gas Imaging: Alternative Work Practice for Monitoring Equipment Leaks, 40 CFR 60.18(g). An owner or operator may use an Optical Gas Imaging instrument to comply with the alternative work practice requirements in 40 CFR 40.18(g) instead of using the 40 CFR 60, Appendix A-7, Method 21 monitor to identify leaking equipment.
- i. AP 42, Fifth Edition, Volume I, Chapter 7: Liquid Storage Tanks, November 2006, errata August 2012.

506.2 California Air Resources Board (CARB) - Test Procedure:

- a. TP-201.1E Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves, October 8, 2003.

506.3 ASTM

- a. ASTM D2879-10 Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isotenoscope.
- b. ASTM D6420-99 (Reapproved 2004), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry.

506.4 American Petroleum Institute: API STD 650 Welded Tanks for Oil Storage, Twelfth Edition, Includes Errata 1 (2013), Errata 2 (2014), and Addendum 1 (2014).

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS**

**RULE 351
STORAGE AND LOADING OF GASOLINE AT BULK GASOLINE PLANTS AND BULK
GASOLINE TERMINALS**

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506.4 American Petroleum Institute: API STD 650 Welded Tanks for Oil Storage, Twelfth Edition, Includes Errata 1 (2013), Errata 2 (2014), and Addendum 1 (2014).

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS**

**RULE 351
STORAGE AND LOADING OF GASOLINE AT BULK GASOLINE PLANTS AND BULK
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Revised 07/13/1988; Revised 04/06/1992; Revised 02/15/1995; and **11/02/2016**

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS**

**RULE 351
STORAGE AND LOADING OF GASOLINE AT BULK GASOLINE PLANTS AND BULK
GASOLINE TERMINALS**

SECTION 100 - GENERAL

- 101 PURPOSE:** To limit emissions of volatile organic compounds (VOCs) emitted during the storage and loading of gasoline at bulk gasoline plants and bulk gasoline terminals.
- 102 APPLICABILITY:** This rule is applicable to:
 - 102.1** The storage of gasoline in a stationary storage tank at a bulk gasoline plant or bulk gasoline terminal.
 - 102.2** The loading of gasoline from a gasoline cargo tank, railroad tank car or pipeline into or out of a stationary storage tank at a bulk gasoline plant or bulk gasoline terminal.
- 103 EXEMPTIONS:**
 - 103.1 Aviation Gasoline:** The loading of aviation gasoline into stationary storage tanks at airports, and the subsequent loading of aviation gasoline within the airport, is exempt from Section 304 of this rule. The storage of aviation gasoline at airports is subject to this rule.
 - 103.2 Seal Gap:** The owner or operator is exempted from the requirements for secondary seals and the secondary seal gap criteria when performing gap measurements or inspections of the primary seal.
 - 103.3 Submerged Fill:** A gasoline stationary storage tank is exempt from the requirement that a submerged fill discharge pipe be fully submerged when:

- a. The tank is being drained completely.
- b. The tank is being initially filled or filled after being completely drained.

103.4 Floating Roof: As long as either of the following processes is accomplished continuously and as rapidly as practicable, a floating roof is exempt from the requirement that its roof be floating when:

- a. The tank is being drained completely.
- b. The tank is being filled.

103.5 Bulk Gasoline Plants with a Throughput of Less than 120,000 Gallons Per 30-Day Period: At a bulk gasoline plant built before October 2, 1978, vapor loss control specified in Section 303 of this rule is not required at the loading rack when all of the following conditions are met:

- a. The bulk gasoline plant loads less than 120,000 gallons (454,800 l) of gasoline into gasoline cargo tanks in any consecutive 30-day period. Any bulk gasoline plant that becomes subject to all of the provisions of Section 303 of this rule by exceeding the throughput threshold of 120,000 gallons of gasoline in any consecutive 30-day period will remain subject to these provisions even if its throughput later falls below the threshold.
- b. Keep current records of amount of gasoline loaded and keep them readily accessible to the Control Officer upon request for at least five (5) years.
- c. Load gasoline using submerged fill only.
- d. The owner or operator of the bulk gasoline plant shall observe all parts of the gasoline loading process and shall discontinue the gasoline loading if any leaks are observed.
- e. **Opening of Hatches, Vent Valves or Other Vapor Sealing Devices:**
 - (1) A hatch, vent valve or other vapor sealing device may be opened for vacuum relief on a gasoline cargo tank or rail car when the gasoline is in the process of being loaded from the gasoline cargo tank or rail car into a stationary storage tank. The owner or operator shall reclose the hatch, vent valve or other vapor sealing device at the completion of the loading process.
 - (2) When VOC vapors from gasoline are present within a gasoline cargo tank, authorized government agents, as well as the owner or operator and their contractors may open vapor containment equipment while performing operations required by this rule or by other statutory entities, but shall be restricted as follows, unless approved in advance by the Control Officer:
 - (a) Wait at least 3 minutes after the loading of gasoline is complete or gasoline cargo tank has come to a complete stop before opening hatch or other vapor seal.
 - (b) Reclose hatch or other vapor sealing device within 3 minutes of opening.
 - (c) Limit wind speed at opened hatch or other opened sealing device to not more than 3 mph (1.34 m/sec).

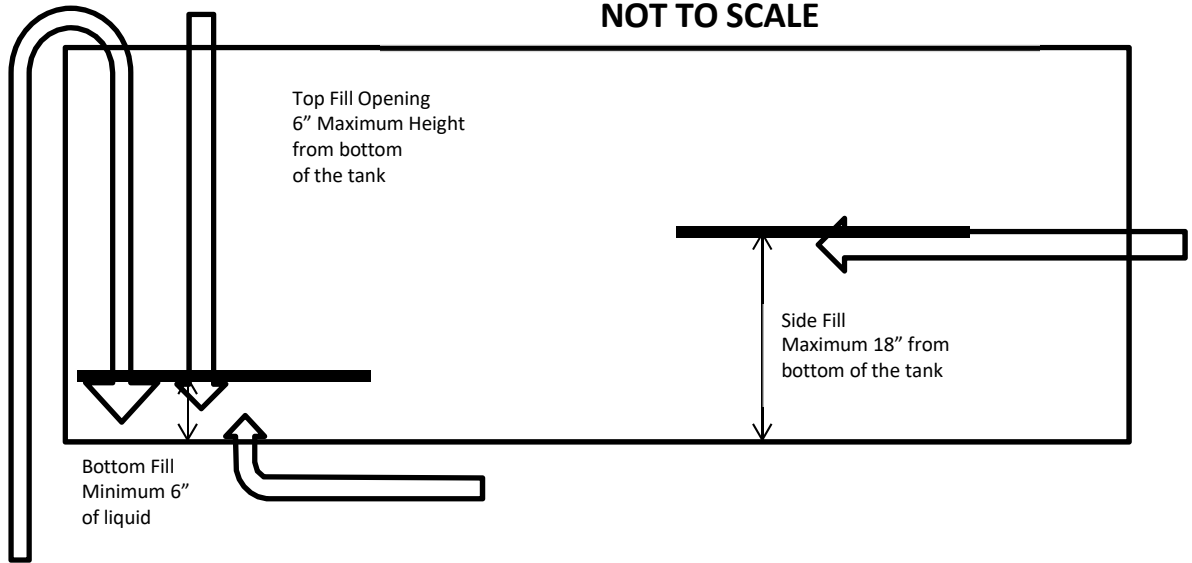
SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

- 201 AVIATION GASOLINE (AVgas):** A type of gasoline used to fuel a piston engine aircraft.
- 202 BULK GASOLINE PLANT:** Any gasoline storage and distribution facility that meets all of the following:
- 201.1** Loads gasoline from a pipeline, rail, or gasoline cargo tank into a stationary storage tank;
 - 201.2** Loads gasoline from the stationary storage tank into a gasoline cargo tank for transport to a gasoline dispensing facility or a bulk gasoline plant; and
 - 201.3** Has a gasoline throughput of less than 20,000 gallons per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal, State, or local law, and discoverable by the Control Officer.
- 203 BULK GASOLINE TANK:** Any stationary storage tank serving a loading rack which loads gasoline cargo tanks with gasoline.
- 204 BULK GASOLINE TERMINAL:** Any gasoline storage and gasoline loading facility that meets all of the following:
- 204.1** Loads gasoline from a pipeline, rail, or gasoline cargo tank into a stationary storage tank;
 - 204.2** Loads gasoline from the stationary storage tank into a gasoline cargo tank for transport to a gasoline dispensing facility or a bulk gasoline plant; and
 - 204.3** Has a gasoline throughput of 20,000 gallons per day or greater. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal, State, or local law, and discoverable by the Administrator and any other person.
- 205 DISPENSING TANK:** Any stationary tank which dispenses gasoline directly into a motorized vehicle's fuel tank, dispenses gasoline into an aircraft's fuel tank, or dispenses gasoline into a watercraft's fuel tank that directly fuels its engine(s).
- 206 EXCESS GASOLINE DRAINAGE:** More than 10 milliliters (0.34 fluid ounces or 2 teaspoonsful) of liquid gasoline lost from the end of a fill hose or vapor recovery hose in the process of connecting or disconnecting the hose; or any quantity of gasoline escaping out the end of such a hose that wets any area(s) on the ground having an aggregate area greater than 113 square inches, or the perimeter of which would encompass a circle of 12 inches (30.5 cm) diameter. This does not include drainage into a fill pipe's spill containment receptacle.
- 207 EXTERNAL FLOATING ROOF STATIONARY STORAGE TANK:** An open top stationary storage tank with a floating roof consisting of a double deck or pontoon single deck that rests upon and is supported by the liquid being contained.
- 208 GAS TIGHT:** Having no leak of gaseous organic compound(s) exceeding 10,000 ppm above background when measurements are made using EPA Method 21 with a methane calibration standard.
- 209 GASOLINE:** Any petroleum distillate, petroleum distillate/alcohol blend, petroleum distillate/organic compound blend, or alcohol that meets both of the following conditions:
- 209.1** Has a Reid vapor pressure between 4.0 and 14.7 psi (200–760 mm Hg.), as determined by ASTM D323-15a; and
 - 209.2** Is used as a fuel for internal combustion engines.
- 210 GASOLINE CARGO TANK:** A delivery tank truck or railcar which is loading gasoline or which has loaded gasoline on the immediately previous load.

- 211 GASOLINE DISPENSING FACILITY:** All gasoline dispensing tanks and associated equipment located on one or more contiguous or adjacent properties under the control of the same owner or operator under common control.
- 212 GASOLINE LOADING FACILITY:** Any gasoline operation or facility such as a gasoline storage tank farm, pipeline terminal, bulk gasoline plant, bulk gasoline terminal loading dock or combination thereof, where gasoline is loaded into or out of gasoline cargo tanks for future distribution. Included are all related pollutant-emitting activities which are located on one or more contiguous or adjacent properties, and are under the control of the same owner or operator under common control.
- 213 INTERNAL FLOATING ROOF STATIONARY STORAGE TANK WITH FIXED ROOF COVERING:** A stationary storage tank with a floating cover or roof that rests upon or is floated upon the liquid being contained, and that also has a fixed roof on top of the tank shell. An external floating roof tank that has been retrofitted with a geodesic dome or other fixed roof shall be considered to be an internal floating roof tank for the purposes of this rule.
- 214 LEAK FREE:** A condition in which there is no liquid gasoline escape or seepage of more than 3 drops per minute from gasoline storage, handling, and ancillary equipment, including, but not limited to, seepage and escapes from above ground fittings.
- 215 ORGANIC LIQUID:** Any organic compound which exists as a liquid under any actual conditions of use, transport or storage.
- 216 PURGING:** Removing, cleaning, or scouring out gasoline vapors from all or a portion of a gasoline cargo tank by active or passive means and emitting the vapors into the atmosphere.
- 217 STATIONARY STORAGE TANK:** Any tank, reservoir or other container used to store, but not transport, gasoline.
- 218 SUBMERGED FILL:** Any gasoline discharge pipe or nozzle which meets at least one of the applicable specifications:
- 218.1 Top-Fill or Bottom-Fill:** The end of the discharge pipe or nozzle is totally submerged when the liquid level is six inches (15 cm) from the bottom of the tank, unless exempted by Section 103.3 of this rule.
- 218.2 Side-Fill:** The end of the discharge pipe or nozzle is totally submerged when the liquid level is 18 inches (46 cm) from the bottom of the tank, unless exempted by Section 103.3 of this rule.

Submerged Fill Diagram

NOT TO SCALE



- 219 **SWITCH LOADING:** Loading diesel fuel into a gasoline cargo tank whose previous load was gasoline; or loading any organic liquid not subject to this rule into a gasoline cargo tank whose previous load was gasoline and subject to this rule.
- 220 **VAPOR BALANCE SYSTEM:** A piping system that is designed to collect gasoline vapors displaced from the loading of gasoline, and to route the collected vapors to the gasoline cargo tank from which the gasoline is being loaded.
- 221 **VAPOR LOSS CONTROL SYSTEM:** A system for reducing emissions to the atmosphere, consisting of an abatement device and a collection system, which achieves the abatement efficiency or emission limit during the loading of gasoline.
- 222 **VAPOR TIGHT:** A condition in which a suitable detector at the site of (potential) leakage of vapor shows less than 10,000 ppmv when calibrated with methane or the detector shows less than 1/5 lower explosive limit (LEL) when calibrated with a gas specified by the manufacturer and used according to the manufacturer's instructions.

SECTION 300 – STANDARDS

- 301 **FEDERAL STANDARDS OF PERFORMANCE FOR BULK GASOLINE PLANTS AND BULK GASOLINE TERMINALS:** An owner or operator of a bulk gasoline plant or bulk gasoline terminal must meet the applicable federal standards of performance set forth in new source performance standards (NSPS) set forth in 40 CFR Part 60, Subparts K-Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced after June 11, 1973, and Prior to May 19, 1978; 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; 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; Subpart XX-Standard of Performance for Bulk Gasoline Terminals; and the national emission standards for hazardous air pollutants (NESHAP) set forth in 40 CFR Part 63, Subpart BBBB- NESHAP Gasoline Distribution Bulk Terminals, Bulk Plants and Pipeline Facilities, and all accompanying appendices, excluding the authorities that cannot be delegated to the department. These federal standards are adopted and incorporated by reference in Rule 360 and Rule 370 in these rules.
- 302 **GASOLINE STATIONARY STORAGE TANK STANDARDS:**
- 302.1 **Submerged Fill:** The owner or operator of a gasoline stationary storage tank with a capacity more than 250 gallons (946 l) shall only allow the loading of gasoline into a stationary storage tank or a gasoline cargo tank using submerged fill.

302.2 Gasoline Stationary Storage Tanks with a Capacity Between 250 Gallons (946 l) and 40,000 Gallons (151,400 L): For gasoline stationary storage tanks with a capacity more than 250 gallons (946 l) but less than 40,000 gallons (151,400 l), an owner or operator shall store gasoline in a stationary storage tank that meets all of the following requirements:

- a. Each tank has a fill pipe that is maintained leak free and vapor tight.
- b. Each tank has a permanently installed submerged fill pipe. Where, because of government regulation including, but not limited to, Fire Department codes, such a fill pipe cannot be installed, a nozzle extension that reaches within 6 inches of the tank bottom shall be used to fill the tank.
- c. Each fixed roof tank has a pressure/vacuum valve that is maintained in good working order and that is installed with a pressure/vacuum vent valve that is either set within ten percent of the tank's maximum, safe working-pressure or is set at least at 0.5 psia (25.8 mm Hg).
- d. The tank is equipped with a vapor balance system which collects and returns displaced vapors to the gasoline cargo tank using vapor tight fittings and lines; or such tank uses at least one of the vapor loss control methods in Sections 303 of this rule.

302.3 Gasoline Storage Tanks with a Capacity Equal to or Greater than 40,000 Gallons (151,400 L): An owner or operator of a gasoline stationary storage tank with a capacity equal to or greater than 40,000 gallons (151,400 l), shall store gasoline in a stationary storage tank that is equipped with at least one of the following:

- a. An external floating roof storage tank; or
- b. An internal floating roof storage tank with a fixed cover; or
- c. A vapor loss control system.

303 VAPOR LOSS CONTROL:

303.1 External Floating Roof Stationary Storage Tanks: An external floating roof stationary storage tank must meet the following requirements:

- a. The owner or operator of an external floating roof stationary storage tank and a vapor balance system or vapor loss control system shall properly install, properly maintain and properly operate the equipment.
- b. An owner or operator shall operate an external floating roof stationary storage tank subject to the provisions of this rule, except for tanks having metallic shoe primary seals onto which secondary seals were installed prior to July 13, 1988 and unless a secondary seal extends from the roof to the tank shell (a rim-mounted seal) and is not attached to the primary seal.
- c. **Floating Roof Requirements:**
 - (1) The floating roof shall rest on and be supported by the surface of the liquid contents.
 - (2) The floating roof shall be equipped with a continuous primary seal to close the space between the roof eave and tank wall, except as provided in Section 103.4 of this rule.
 - (3) The floating roof shall have a continuous secondary seal which is of a design that is in accordance with accepted standards of the petroleum industry. The secondary seal shall meet the requirements of Section 303.1(d) of this rule.

d. Secondary Seal Requirements:

- (1) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge or primary seal and the tank wall, except as provided in Section 303.1(d)(2) of this rule.
- (2) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 1.0 square inch per foot (21.2 cm² per meter) of tank diameter. Determinations of gap area shall only be made at the point(s) where the gaps exceed 1/8 inch (3 mm). The width of any portion of any gap shall not exceed 1/2 inch (1.27 cm).
- (3) Stationary storage tanks constructed after July 13, 1988, shall have a secondary seal that is rim-mounted.

e. Floating Roof Openings:

- (1) Floating roof tanks subject to the provisions of Section 303.1 of this rule shall have no visible holes, tears or other openings in the seal or in any seal fabric.
- (2) The accumulated area of gaps between a tank's wall and primary seal shall not exceed 10 square inches per foot of tank diameter (21.2 cm² per meter)The width of any portion of any gap shall not exceed 1½ inches (3.8 cm).
- (3) Where applicable, all openings except drains shall be equipped with a cover seal or lid.
- (4) Where applicable, the cover seal or lid shall be in a closed position at all times, except when the system is in actual use.
- (5) Automatic bleeder vents shall be closed at all times, except when the roof is floated off or landed on the roof leg supports.
- (6) Rim vents, if provided, shall be set to open only when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

303.2 Internal Floating Roof Stationary Storage Tank with Fixed Roof Covering: An internal floating roof stationary storage tank with fixed coverings and its appurtenances must meet the following requirements:

- a. The owner or operator of an internal floating roof stationary storage tank and a vapor balance system or vapor loss control system shall properly install, properly maintain and properly operate the equipment.
- b. Gasoline stationary storage tanks for which construction, reconstruction or modification commenced after July 23, 1984, must comply with all applicable requirements of the EPA New Source Performance Standard (NSPS), 40 CFR 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, as incorporated by reference July 1, 2016.
- c. All tanks not subject to Section 303.2(b) must comply with one of the following:
 - (1) Comply with 40 CFR Part 60, Subpart Kb, notwithstanding the type of facility and the date of tank construction, reconstruction or modification; or
 - (2) Have at least one continuous seal which completely covers the space

between the roof edge and tank wall, except as provided in Section 303.2(d) of this rule, and meet at least one of the following requirements:

- (a) Have a contact-type roof resting completely on the liquid surface.
- (b) Have a liquid mounted seal.
- (c) Have two seals, a primary and a secondary.

d. Floating Roof Openings:

- (1) Floating roof tanks subject to the provisions of Section 303.2 of this rule shall have no visible holes, tears or other openings in the seal or in any seal fabric.
- (2) The accumulated area of gaps between a tank's wall and primary seal shall not exceed 10 square inches per foot of tank diameter (21.2 cm² per meter)
- (3) The width of any portion of any gap shall not exceed 1½ inches (3.8 cm).
- (4) Where applicable, all openings except drains shall be equipped with a cover seal or lid.
- (5) Where applicable, the cover seal or lid shall be in a closed position at all times, except when the system is in actual use.
- (6) Automatic bleeder vents shall be closed at all times, except when the roof is floated off or landed on the roof leg supports.
- (7) Rim vents, if provided, shall be set to open only when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

303.3 Vapor Balance System: An owner or operator of a bulk gasoline plant shall properly install, properly operate, and properly maintain a vapor balance system or, alternatively, use a vapor loss control system.

303.4 Vapor Loss Control System: An owner or operator of a bulk gasoline terminal shall properly install, properly operate, and properly maintain a vapor loss control system.

- a. The vapor processing subsystem shall be vapor tight except for the designated exhaust.
- b. Any gasoline cargo tank or stationary storage tank gauging or sampling device on a gasoline cargo tank or stationary storage tank, vented to such a vapor loss control system, shall be equipped with a vapor tight cover, which shall be closed at all times except during gauging or sampling procedures.
- c. All pressure-vacuum vent valves shall be constructed and maintained in a vapor tight condition except when the operating pressure exceeds the valve release setting.
- d. Switch loading shall be subject to vapor loss control system that is capable of preventing at least 95% by weight of the VOCs escaping into the atmosphere and reduces emissions of VOC to not more than 0.08 pounds per 1000 gallons of gasoline transferred.
- e. The terminal owner or operator and the operator of the receiving vessel shall act to ensure that the vapor recovery hose is connected before gasoline is loaded.

303.5 Equipment Maintenance, Operation and Repair: The owner or operator of a bulk gasoline plant or bulk gasoline terminal shall:

- a. Maintain the equipment associated with the storage and loading of gasoline as follows:
 - (1) Leak free;
 - (2) Vapor tight; and
 - (3) In good working order.
- b. Repair and Retest: The owner or operator of a vapor balance system or vapor loss control system that exceeds the standards of this rule shall notify the Control Officer immediately and observe the following time schedule for corrective action:
 - (1) Concentrations at or above the lower explosive limit must be brought into compliance within 24 hours of detection.
 - (2) For vapor collection/processing equipment subject to gas-tight standard, vapor leak concentrations exceeding 10,000 ppmv but less than 50,000 ppmv as methane shall be brought into compliance within five (5) days of detection.
 - (3) Except as the Control Officer otherwise specifies, a leak source must be tested after presumed leak-correction within fifteen (15) minutes of recommencing use. If leak standards are exceeded in this test, the use of the leak-correction equipment shall be discontinued until correction is verified by retesting.

304 GENERAL REQUIREMENTS FOR THE LOADING OF GASOLINE: The owner or operator of a bulk gasoline plant or a bulk gasoline terminal shall comply with the following:

304.1 Loading of Gasoline into Stationary Storage Tanks:

- a. Comply with Section 302.1 of this rule.
- b. Verify the proper connection to a vapor balance system or a vapor loss control system prior to loading gasoline at facilities.
- c. Verify the proper disconnection from a vapor balance system or a vapor loss control system at the completion of loading gasoline at facilities.
- d. Minimize spills during storage and loading of gasoline.
- e. Clean up spills as expeditiously as practicable.
- f. Cover all open containers of gasoline or gasoline soaked material when not in use.
- g. Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.

304.2 Loading of Gasoline into Gasoline Cargo Tanks:

- a. Verify that the gasoline cargo tank displays a valid Maricopa County Vapor Tightness Certification decal or a signed affidavit indicating an exemption from vapor tightness testing.
- b. Verify the proper connection to a vapor balance system or a vapor loss control system prior to the loading of gasoline.
- c. Verify the proper disconnection from a vapor balance system or a vapor loss

control system at the completion of loading gasoline.

- d. Minimize spills during storage and loading of gasoline.
- e. Clean up spills as expeditiously as practicable.
- f. Cover all open containers of gasoline and gasoline soaked material when not in use.
- g. Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.
- h. Purging of gasoline vapors is prohibited.

304.3 Loading of Gasoline at a Bulk Gasoline Plant:

- a. **Loading of Gasoline into Gasoline Cargo Tanks:** An owner or operator shall not load gasoline from a gasoline cargo tank into a stationary storage tank at a bulk gasoline plant if the stationary storage tank has a capacity of more than 250 gallons (946 l), unless the gasoline cargo tank displays a valid Maricopa County Vapor Tightness Certification decal and uses a vapor balance system equipped with fittings which are vapor tight or, alternatively, uses a vapor loss control system that reduces emissions of VOC to not more than 0.6 pounds per 1000 gallons of gasoline transferred.
- b. **Loading from Stationary Storage Tanks at Bulk Gasoline Plants:** An owner or operator shall not load gasoline from a stationary storage tank at a bulk gasoline plant if the stationary storage tank has a capacity of more than 250 gallons (946 l) into a gasoline cargo tank unless both the loading rack and gasoline cargo tank use a vapor balance system equipped with fittings which are vapor tight or, alternatively, use a vapor loss control system that reduces emissions of VOC to not more than 0.6 pounds per 1000 gallons of gasoline transferred.

304.4 Loading of Gasoline at a Bulk Gasoline Terminal: An owner or operator of a bulk gasoline terminal shall load gasoline from a stationary storage tank, if the owner or operator meets all the conditions of Sections 303.4 and 304.2 of this rule and uses a vapor loss control system that is capable of preventing at least 95% by weight of the VOCs escaping into the atmosphere and reduces emissions of VOC to not more than 0.08 pounds per 1000 gallons of gasoline transferred.

305 OPERATING REQUIREMENTS FOR A VAPOR LOSS CONTROL SYSTEM: The owner or operator of a vapor loss control system subject to this rule shall operate the system and gasoline loading equipment as follows:

- 305.1** Loading shall be accomplished in a manner that prevents gauge pressure from exceeding 18 inches of water (33.6 mm Hg) and vacuum from exceeding six inches of water (11.2 mm Hg) in the gasoline cargo tank. Each owner or operator shall ensure that a vapor loss control system is connected between the gasoline cargo tank and the gasoline storage tank during the loading of gasoline.
- 305.2** Loading shall be accomplished in a manner that prevents leaks, overfills, and excess gasoline drainage. An owner or operator of a bulk gasoline plant or bulk gasoline terminal and the operator of a gasoline cargo tank shall observe all parts of the loading and shall discontinue loading if any leaks are observed. All appropriate measures shall be taken to prevent liquid leaks from the loading device when it is not in use, and to complete drainage before the loading device is disconnected. During the loading of gasoline, potential leak sources shall be vapor tight as demonstrated by the test procedure described in Section 501 of this rule.
- 305.3** During the loading of gasoline, an owner or operator shall operate the vapor loss control system in such a manner that the displaced vapor and air will be vented only to the vapor loss control system, which shall be operated gas-tight and in a manner such that

the vapor processing capacity is not exceeded. Diaphragms used in vapor storage tanks shall be maintained gas-tight.

- 305.4** Vapor recovery hoses shall be equipped with fittings that are vapor tight and that automatically and immediately close upon disconnection. Vapor balance systems shall be designed to prevent any vapors collected at one loading rack from passing to another loading rack.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 EQUIPMENT LEAKS:

The owner or operator shall perform monthly inspections, while gasoline is being transferred, for liquid and vapor leaks and for faulty equipment. Monthly inspection leak detection methods can include one or more of the following methods:

- a. Incorporation of sight, sound, smell and/or touch.
- b. Use of a combustible gas detector (CGD) or organic vapor analyzer (OVA) pursuant to Section 501 of this rule.
- c. Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3, use of a soap solution pursuant to Section 501 of this rule.
- d. Use of an optical gas imaging instrument calibrated according to manufacturing specifications and used according to Section 501 of this rule.

A log book shall be used and signed by the owner or operator at the completion of each monthly inspection for equipment leaks. A section of the log book shall contain a list, summary description, or diagram(s) showing the location of all equipment in gasoline service at the facility.

Leak detection tests shall be conducted annually by the owner or operator of each bulk gasoline plant or bulk gasoline terminal. Testing shall be done according to procedures in Section 504 of this rule, except that EPA Method 21 shall be used to test for leaks from a vapor loss control system and its associated piping outside the loading area. Equipment shall conform to the specifications of those test methods cited in Section 504 of this rule. Prior to testing, the owner or operator shall notify the Control Officer of the date, time and location of the testing. The Control Officer shall at their discretion observe the tests.

402 GASOLINE STORAGE TANK INSPECTIONS:

Inspection of an External Floating Roof Stationary Storage Tank:

- a. The owner or operator of any external floating roof stationary storage tank subject to this rule shall visually inspect the tank and seals at least once every six (6) months to determine ongoing compliance with the applicable standards of this rule pertaining to the tank. Determinations of secondary seal gap area on external floating roof stationary storage tanks shall be made only once per year. Records of these inspections shall be maintained and shall be made available to the Control Officer upon request.
- b. **Annual and Empty Tank Inspection:** The owner or operator of any stationary storage tank which uses an external floating roof to meet the vapor loss control system requirements of this rule shall conduct a visual inspection each time the external floating roof stationary storage tank is emptied and degassed or at least once a year. The visual inspection shall include all of the following:
 - (1) Verify the secondary seal covers the space between the roof edge and the tank.
 - (2) Measure the gaps between the tank wall and the secondary seal. The

accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm² (3.29 square inches) per meter of tank diameter and the width of any portion of any gap shall not exceed 1.27 cm (0.2 inch).

(3) Verify there are no holes, tears, or other openings in the seal or seal fabric.

c. Five-Year, Full Circumference Inspections of External Floating Roof

Stationary Storage Tanks: The owner or operator of a floating roof tank of 20,000 gallons (75,700 l) or more storing gasoline shall conduct a complete inspection of the external floating roof tank each time the tank is emptied and degassed or at least once every five (5) years. This inspection can be performed while the tank is in service. The inspection shall include all of the following:

(1) Perform a complete inspection of the gasoline storage tank as described in Section 402.1(a) of this rule.

(2) Perform a complete inspection of the primary seal and floating roof.

(3) Measure gap areas and maximum gap. The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 21.2 cm² per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm.

Inspection of Internal Floating Roof Stationary Storage Tanks with a Fixed Roof Covering:

a. The owner or operator of any internal floating roof stationary storage tank subject to this rule shall visually inspect the tank and seals at least once every six (6) months to determine ongoing compliance with the applicable standards of this rule pertaining to the tank. Records of these inspections shall be maintained and shall be made available to the Control Officer upon request.

b. The owner or operator of any stationary storage tank which uses an internal floating roof to meet the vapor loss control system requirements of this rule shall conduct a visual inspection each time the internal floating roof stationary storage tank is emptied and degassed or at least once a year. The visual inspection can be made through manholes or rood hatches and shall include all of the following:

(1) The internal floating roof shall not have an accumulation of liquid on the roof.

(2) The seal shall be attached.

(3) The seal shall not have any holes or tears.

Five Year Inspection and Empty Tank Inspection: The owner or operator of any stationary storage tank which uses an internal floating roof to meet the vapor loss control system requirements of this rule shall conduct a visual inspection each time the internal floating roof stationary storage tank is emptied and degassed or at least once every five (5) years. The visual inspection shall include all of the following:

a. The internal floating roof shall be free of any defects.

b. The primary seal shall not have any holes, tears or other openings.

c. The secondary seal if one is in service, shall not have any holes, tears or other openings.

d. Gaskets shall prevent liquid surfaces from exposure to atmosphere.

e. The slotted membrane shall not have more than a ten percent (10%) open area.

403 GASOLINE STORAGE TANK INSPECTIONS-AVAILABILITY TO CONTROL OFFICER:

Annual Inspections of External Floating Roof Tanks: The owner or operator of any stationary storage tank which uses an external floating roof to meet the vapor loss control system requirements of this rule shall make the primary seal envelope and the secondary seal available for unobstructed inspection by the Control Officer on an annual basis. The primary seal envelope shall be made available for inspection at a minimum of four (4) locations selected along its circumference at random by the Control Officer. If the Control Officer detects a violation as a result of any such inspection, the Control Officer may require such further unobstructed inspection of the seals as may be necessary to determine the seal condition for its entire circumference.

Annual Inspections of Internal Floating Roof Tanks: The owner or operator of any stationary storage tank which uses an internal floating roof to meet the vapor loss control system requirements of this rule shall make the entire tank including the internal floating roof available for inspection prior to filling. The internal floating roof shall be made available for visual inspection through the manholes or roof hatches on the fixed covering on an annual basis.

Five-Year, Full Circumference Inspections: The owner or operator of a floating roof stationary storage tank of 20,000 gallons (75,700 l) or more storing gasoline shall make the primary seal envelope available for inspection by the Control Officer for its full length every five (5) years. This inspection can be performed while the tank is in-service. However, if the secondary seal is removed or if the tank is drained and cleaned by the owner or operator for any reason, it shall be made available for such inspection at that time. The owner or operator shall provide notification to the Control Officer no less than seven (7) working days prior to removal of the secondary seal.

404 OTHER AGENCIES' REQUIREMENTS: Compliance with this rule does not relieve or otherwise affect the owner's or operator's obligation to comply with any other applicable federal, state, or local legal requirement including, but not limited to, rules promulgated by Arizona Department of Agriculture, Weights and Measures Services Division, local fire department codes, and local zoning ordinances.

SECTION 500 - MONITORING AND RECORDS: In addition to any federal testing, monitoring and recording requirements, an owner or operator of a bulk gasoline plant or bulk gasoline terminal shall comply with the following:

501 DETERMINING VAPOR TIGHT STATUS: If a determination of vapor tight status is to be made during the loading of a gasoline cargo tank, an owner or operator or Control Officer shall use one or more of the methods listed in Section 501 of this rule.

Combustible Gas Detector (CGD) or Organic Vapor Analyzer (OVA) - Test Procedure: During loading of gasoline cargo tanks, the peripheries of all potential sources of leakage at the gasoline loading facility are checked with a CGD or OVA as follows:

- a. **Calibration:** Within four (4) hours prior to monitoring, the CGD or OVA shall be properly calibrated for a 20 percent lower explosive limit (LEL) response or to 10,000 ppm with methane.
- b. **Probe Distance:** The probe inlet shall be one (1) inch (2.5 cm) or less from the potential leak source when searching for leaks. The probe inlet shall be one (1) inch (2.5 cm) from the leak source when the highest detector reading is being determined for a discovered leak. When the probe is obstructed from moving within one (1) inch (2.5 cm) of an actual or potential leak source, the closest practicable probe distance shall be used.

- c. **Probe Movement:** The probe shall be moved slowly, not faster than 1.6 inches per second (4 centimeters per second). If there is any meter deflection at an actual or potential leak source, the probe shall be positioned to locate the point of highest meter response.
- d. **Probe Position:** The probe inlet shall be positioned in the path of the vapor flow from an actual or potential leak such that the central axis of the probe-tube inlet shall be positioned coaxial with the path of the most concentrated vapors.
- e. **Wind:** Wind shall be blocked as much as possible from the space being monitored. The annual leak detection test required by Section 401 of this rule shall be valid only when wind speed in the space being monitored is five (5) mph or less.
- f. **Data Recording:** The highest detector reading and location for each incidence of detected leakage shall be recorded along with the date and time. If no gasoline vapor is detected, that fact shall be entered into the record.

Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3:

- a. Spray a soap solution over all potential leak sources. The soap solution may be a commercially available leak detection solution or may be prepared using concentrated detergent and water. A pressure sprayer or squeeze bottle may be used to dispense the solution.
- b. Observe the potential leak sites to determine if any bubbles are formed.
 - (1) If no bubbles are observed, the source is presumed to have no detectable vapor leaks.
 - (2) If any bubbles are observed, the instrument techniques of Section 501.1 of this rule shall be used to determine if a vapor leak exists.

Optical Gas Imaging: A certified operator of a calibrated optical gas imaging instrument may use an optical gas imaging instrument to identify vapor leaks. If a vapor leak is detected, the instrument techniques listed in Section 501.1 of this rule shall be used to determine if a vapor leak exists.

Gasoline Cargo Tank Loading Pressure: During a performance test, a pressure tap shall be placed in the gasoline loading facility's vapor loss control system, as close as possible to the gasoline cargo tank. The pressure shall be recorded every five (5) minutes while a gasoline cargo tank is being loaded. The highest instantaneous pressure that occurs during each loading shall be recorded. A pressure measurement device capable of measuring 20 inches (50.8 cm) of water pressure with a precision of 0.1 (2.5 mm) inch of water shall be calibrated. This device shall fit the tap and shall either be permanently installed or shall be kept available at all times at the facility.

502 COMPLIANCE INSPECTIONS: The Control Officer, at any time, may monitor a gasoline cargo tank vapor collection system, a loading rack's vapor loss control devices, a gasoline loading facility, or a vapor loss control system for vapor leaks by the methods described in Section 501 of this rule or by applicable EPA Reference Methods specified in Section 504 of this rule.

503 RECORDS RETENTION: Records and information required by this rule shall be retained for at least five (5) years.

Vapor Pressure Records:

- a. **Bulk Gasoline Plant:** An owner or operator of a stationary storage tank located at a bulk gasoline plant shall keep accurate records of the following:

- (1) The amount of gasoline stored in each tank.
- (2) The Reid vapor pressure ranges of each such liquid.
- (3) These records shall be kept for a minimum of five (5) years.

b. Bulk Gasoline Terminal: An owner or operator of a stationary storage tank located at a bulk gasoline terminal shall keep accurate records of the following:

- (1) The amount of gasoline stored in each tank.
- (2) The temperature of the contents of each stationary storage tank subject to this rule, shall be determined and recorded using at least one of the following methods:
 - (a) Take the actual temperature of the contents of the stationary storage tank each week and record the weekly temperature of the contents of each stationary storage tank.
 - (b) Obtain the maximum local monthly average ambient temperature as reported by the National Weather Service and record monthly for each stationary storage tank.
 - (c) Record monthly AP 42, Section 7.1 emission estimation procedures for each storage tank.
- (3) The Reid vapor pressure of the contents of each stationary storage tank shall be recorded at least once each month.
- (4) These records shall be kept for a minimum of five (5) years.

Leak Inspection Records: The owner or operator of a bulk gasoline plant or bulk gasoline terminal shall keep a log book documenting each leak inspection. The log book shall include the items listed below:

- a. The owner or operator shall sign the log book at the completion of each monthly inspection for equipment leaks.
- b. Each monthly inspection log shall contain a list, summary description or diagram(s) showing the location of all equipment at the bulk gasoline plant or bulk gasoline terminal.
- c. Each monthly inspection log shall include any maintenance that occurred.
- d. Each annual inspection log shall include any maintenance that occurred.
- e. For an external floating roof, record the seal gap measurements, including the raw data obtained and any calculations performed.
- f. The date the stationary storage tank was removed from service, if applicable.
- g. These records shall be kept for a minimum of five (5) years.
- h. Additional recordkeeping requirements for use of optical gas imaging instruments: An owner or operator using an optical gas imaging instrument for leak inspections shall date and time stamp the video records of every monitoring event where an optical gas imaging instrument was used.

COMPLIANCE DETERMINATION - TEST METHODS INCORPORATED BY

REFERENCE: The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods are incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. Alternative test methods as approved by the Administrator or other EPA-approved test methods may be used upon prior written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method will constitute a violation. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department, 1001 N. Central Avenue, Suite 125, Phoenix, AZ 85004-1942.

EPA Test Methods:

- a. EPA Method 2A - Direct Measurement of Gas Volume Through Pipes and Small Ducts.
- b. EPA Method 2B—Determination of Exhaust Gas Volume Flow Rate from Gasoline Vapor Incinerators.
- c. EPA Method 18 - Measurement of Gaseous Organic Compound Emissions by Gas Chromatography.
- d. EPA Method 21 - Determination of Volatile Organic Compound Leaks.
- e. EPA Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3
- f. EPA Method 25A - Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer.
- g. EPA Method 25B- Determination of Total Gaseous Organic Concentration Using a Nondispersive Infrared Analyzer.
- h. EPA Method 27 - Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure Vacuum Test.
- i. Optical Gas Imaging: Alternative Work Practice for Monitoring Equipment Leaks, 40 CFR 60.18(g). An owner or operator may use an Optical Gas Imaging instrument to comply with the alternative work practice requirements in 40 CFR 40.18(g) instead of using the 40 CFR 60, Appendix A-7, Method 21 monitor to identify leaking equipment.
- j. AP 42, Fifth Edition, Volume I, Chapter 7: Liquid Storage Tanks, November 2006, errata August 2012.

California Air Resources Board (CARB) Test Procedures:

- a. TP-201.1E Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves, October 8, 2003.

ASTM Standards

- a. ASTM D323-15a “Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).
- b. ASTM D2879-10 Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isotenoscope.

- c. ASTM D4953-15 “Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method).
- d. ASTM D5191-15 “Standard Test Method for Vapor Pressure of Petroleum Products (Mini Method).”
- e. ASTM D6420-99 (Reapproved 2004), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry.

American Petroleum Institute Standard API STD 650 Welded Tanks for Oil Storage, Twelfth Edition, Includes Errata 1 (2013), Errata 2 (2014), and Addendum 1 (2014).

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
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- c. ASTM D4953-15 “Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method).
- d. ASTM D5191-15 “Standard Test Method for Vapor Pressure of Petroleum Products (Mini Method).”
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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 352
GASOLINE CARGO TANK TESTING AND USE**

SECTION 100 – GENERAL

101 PURPOSE: To limit emissions of volatile organic compounds (VOC) from gasoline cargo tanks.

102 APPLICABILITY: This rule applies to any gasoline cargo tank which is used to load gasoline within Maricopa County, and to all persons who own, operate, maintain, repair, or test such a gasoline cargo tank.

103 PARTIAL EXEMPTIONS:

103.1 This rule does not apply to a gasoline cargo tank when loading the following fuels:

- a. Aviation gasoline loaded at airports.
- b. Diesel.
- c. Liquefied petroleum gas (LPG).

103.2 A gasoline cargo tank is exempt from the Maricopa County (MC) Vapor Tightness Test requirements of Section 301 of this rule, if the gasoline cargo tank meets the requirements in Sections 103.1(a), (b), or (c) of this rule.

- a. A gasoline cargo tank is exempt from the MC Vapor Tightness Test requirements of Section 301 of this rule, if the gasoline cargo tank meets all of the following conditions:
 - (1) The gasoline cargo tank was placed in operation before July 13, 1988; and
 - (2) The gasoline cargo tank transported gasoline within Maricopa County before January 1, 1998; and
 - (3) The gasoline cargo tank never loads at a gasoline terminal; and

- (4) The gasoline cargo tank serves only farm tanks or those non-resale gasoline dispensing operations having a yearly throughput not exceeding 120,000 gallons of gasoline, verified by monthly records pursuant to Section 500 of this rule; and
 - (5) The owner or operator of the gasoline cargo tank submits a signed affidavit to the Control Officer documenting compliance with Sections 103.1(a) through 103.1(c) of this rule; and
 - (6) The owner or operator has a complete copy of the signed affidavit available in the gasoline cargo tank for inspection by a bulk gasoline plant operator or the Control Officer. Maricopa County will not issue a decal to any gasoline cargo tank claiming this exemption.
- b. A gasoline cargo tank is exempt from the MC Vapor Tightness Test requirements of Section 301 of this rule, if at least one of the following conditions is met:
- (1) The gasoline load originated solely outside of Arizona.
 - (2) The gasoline load originated within Maricopa County but is not delivered within Maricopa County.
- c. A gasoline cargo tank is exempt from the MC Vapor Tightness Test requirements of Section 301 of this rule, if the owner or operator of a gasoline cargo tank provides documentation from another agency that attests to the vapor integrity of the gasoline cargo tank and complies with Section 401.2 of this rule.

103.3 An owner or operator of a gasoline cargo tank exempted by Section 103.2(a) of this rule is allowed to incidentally purge gasoline vapors from the gasoline cargo tank as a passive result of loading, or briefly when lids or ports must be open for inspection.

103.4 Opening Hatches on Gasoline Cargo Tanks:

- a. Owners or operators, their contractors, and authorized government agents may open vapor containment equipment on a gasoline cargo tank while performing operations required by governmental agencies, but shall be restricted as follows, unless approved in advance by the Control Officer:
- (1) Wait at least 3 minutes before opening its hatch or other vapor seal on a gasoline cargo tank:
 - (a) When loading of gasoline is complete.
 - (b) After a gasoline cargo tank has come to a complete stop.
 - (2) Reclose hatch or other sealing device within 3 minutes of completing the required procedures.
 - (3) Limit wind speed at opened hatch or other opened sealing device to not more than 3 mph (1.34 m/sec), using a barrier if necessary.
- b. **Loading:** Hatches of a gasoline cargo tank may be open for monitoring to prevent overflow during the period that the gasoline cargo tank is loading gasoline from a tank or other source, if so required by a local fire code or other ordinance.
- c. **Connecting Coaxial Fittings:** Requirements for first connecting a vapor recovery hose before a gasoline cargo tank loading hose do not apply to coaxial vapor recovery connection fittings.

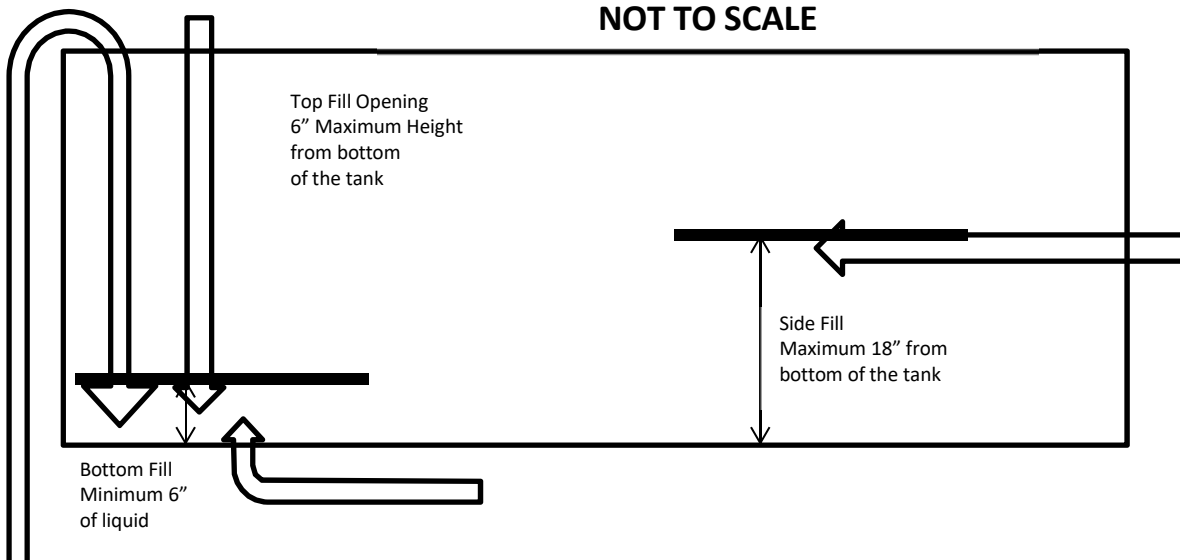
SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

- 201 AVIATION GASOLINE (AVGAS):** A type of gasoline used to fuel a piston engine aircraft.
- 202 BULK GASOLINE PLANT:** Any gasoline storage and distribution facility that meets all of the following:
- 202.1** Loads gasoline from a pipeline, rail, or gasoline cargo tank into a stationary storage tank;
 - 202.2** Loads gasoline from the stationary storage tank into gasoline cargo tanks for transport to gasoline dispensing facilities; and
 - 202.3** Has a gasoline throughput of less than 20,000 gallons per day. Gasoline throughput shall be the maximum calculated design throughput which may be limited by compliance with an enforceable condition under Federal, State, or local law, and discoverable by the Control Officer.
- 203 BULK GASOLINE TERMINAL:** Any gasoline storage and loading facility that meets all of the following:
- 203.1** Loads gasoline from a pipeline, rail, or gasoline cargo tank into a stationary storage tank;
 - 203.2** Loads gasoline from the stationary storage tank into gasoline cargo tanks for transport to gasoline dispensing facilities; and
 - 203.3** Has a gasoline throughput of 20,000 gallons per day or greater. Gasoline throughput shall be the maximum calculated design throughput which may be limited by compliance with an enforceable condition under Federal, State, or local law, and discoverable by the Administrator and any other person.
- 204 COAXIAL VAPOR BALANCE SYSTEM:** A type of vapor balance system in which the gasoline vapors are removed through the same fill pipe connection as which the fuel is delivered.
- 205 DUAL-POINT VAPOR BALANCE SYSTEM:** A type of vapor balance system in which the storage tank is equipped with an entry port for a gasoline fill pipe and a separate exit port for a vapor connection.
- 206 EXCESS GASOLINE DRAINAGE:** More than 10 milliliters (2 teaspoonsful) of liquid gasoline lost from the end of a loading hose or vapor hose in the process of connecting or disconnecting a gasoline loading hose; or any quantity of gasoline escaping out the end of such a hose that wets any area(s) on the ground having an aggregate area greater than 113 square inches, or the perimeter of which would encompass a circle of 12 inches (30.5 cm) diameter. This does not include drainage into a fill pipe's spill containment receptacle.
- 207 GASOLINE:** Any petroleum distillate, petroleum distillate/alcohol blend, petroleum distillate/organic compound blend, or alcohol having a Reid vapor pressure between 4.0 and 14.7 psi (200–760 mm Hg.) as determined by Section 505 of this rule, and which is used as a fuel for internal combustion engines.
- 208 GASOLINE CARGO TANK:** A delivery tank truck or railcar which is loading or unloading gasoline, or which has loaded or unloaded gasoline on the immediately previous load. This includes any hoses the gasoline cargo tank carries through which deliveries must be made.
- 209 GASOLINE DISPENSING FACILITY:** Any stationary facility which dispenses gasoline

into the fuel tank of a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine, including a nonroad vehicle or nonroad engine used solely for competition. These facilities include, but are not limited to, facilities that dispense gasoline into on- and off-road, street, or highway motor vehicles, lawn equipment, boats, test engines, landscaping equipment, generators, pumps, and other gasoline fueled engines and equipment.

- 210 **GASOLINE VAPORS:** Vapors, originating from liquid gasoline, that are usually found in mixture with air. Included are any droplets of liquid gasoline or of gasoline-vapor condensate that are entrained by the vapor.
- 211 **LEAK FREE:** Having no single liquid gasoline leak of more than 3 drops per minute from a gasoline cargo tank, including fill hose(s) and vapor hose(s), but not including the disconnecting or connecting of either a gasoline hose from a gasoline fill line or a vapor hose from a vapor line.
- 212 **MARICOPA COUNTY (MC) VAPOR TIGHTNESS TEST:** The complete pressure, vacuum, and vapor-valve testing of a gasoline cargo tank that is performed according to Maricopa County specifications as described in Section 501 of this rule.
- 213 **PURGING:** Removing, cleaning, or scouring out gasoline vapors from all or a portion of a gasoline cargo tank by active or passive means and emitting the vapors into the atmosphere.
- 214 **STAGE 1 VAPOR RECOVERY SYSTEM (VR SYSTEM):** Any piping, hoses, equipment, and/or devices which are used to collect, store, or process gasoline vapors displaced by the loading of gasoline and also by the unloading of gasoline into a vapor laden gasoline cargo tank.
- 215 **SUBMERGED FILL:** Any discharge pipe or nozzle which meets the applicable specification as follows:
 - 215.1 **Top-Fill or Bottom-Fill:** The end of the discharge pipe or nozzle is totally submerged when the liquid level is six inches (15 cm) from the bottom of the tank.
 - 215.2 **Side-Fill:** At its highest point within the storage tank less 2,000,000 gallon capacity, the end of the discharge pipe or nozzle is totally submerged when the liquid level is 18 inches (46 cm) from the bottom of the tank.

**Submerged Fill Diagram
NOT TO SCALE**



216 SWITCH LOADING: Loading diesel fuel into a gasoline cargo tank whose previous load was gasoline; or loading any liquid not subject to this rule into a gasoline cargo tank whose previous load was gasoline.

217 VAPOR TIGHT: A condition in which a suitable detector at the site of (potential) leakage of vapor shows less than 10,000 ppmv when calibrated with methane or the detector shows

less than 1/5 lower explosive limit (LEL) when calibrated with a gas specified by the manufacturer and used according to the manufacturer's instructions.

SECTION 300 – STANDARDS

301 GASOLINE CARGO TANK REQUIREMENTS:

301.1 Gasoline Cargo Tank Integrity: In Maricopa County, an owner or operator of a gasoline cargo tank shall not store or transport gasoline in or otherwise use or operate any gasoline cargo tank unless:

- a. The gasoline cargo tank is designed and maintained to be vapor tight and leak free.
- b. The gasoline cargo tank passes the MC Vapor Tightness Test unless exempted by Section 103 of this rule.
- c. A valid, permanently mounted Maricopa County Vapor Tightness Certification decal is clearly displayed near the front right (passenger) side of the gasoline cargo tank, if not exempted by Section 103 of this rule.

301.2 MC Vapor Tightness Test: A gasoline cargo tank shall pass the MC Vapor Tightness Test before loading gasoline within Maricopa County, unless exempted by Section 103 of this rule.

- a. **Testing:** The MC Vapor Tightness Test shall be performed according to Section 501 of this rule.
 - (1) Scheduling and notification of a gasoline cargo tank MC Vapor Tightness Test shall be done in accordance with Section 401.1 of this rule.
 - (2) A tester shall record the results of the MC Vapor Tightness Test according to Section 502.2 of this rule.
 - (3) If a gasoline cargo tank does not pass all three (3) subtests of the MC Vapor Tightness Test as listed in Section 502.2 of this rule, the gasoline cargo tank shall be repaired, retested, and pass all 3 subtests in the same testing period within 15 days of initial testing.
- b. **Maricopa County Vapor Tightness Certification Decal:** An owner or operator of a gasoline cargo tank shall:
 - (1) Comply with Sections 401.1 and 401.2 of this rule for notification and registration requirements to obtain a valid Maricopa County Vapor Tightness Certification decal after passing the MC Vapor Tightness Test; and
 - (2) Each gasoline cargo tank shall clearly display a valid Maricopa County Vapor Tightness Certification decal that is permanently mounted near the front on the right (passenger) side of the gasoline cargo tank, unless exempted by Section 103 of this rule.

301.3 Purging:

- a. An owner or operator is allowed to purge gasoline vapors from a gasoline cargo tank if the following conditions are met:
 - (1) VOC emissions shall be reduced at least 90% by weight, including capture and processing, by a control device having a Maricopa County Air Pollution Permit; and
 - (2) Such purging shall be done only after all loading valves are opened and any liquid gasoline outflow is captured in a container having an attached lid which is kept closed when not receiving or pouring gasoline.
- b. An owner or operator of a gasoline cargo tank shall not purge gasoline vapors from such tank as a passive result of switch loading, except for gasoline cargo tanks exempted by Section 103 of this rule.

302 LOADING OF GASOLINE:

302.1 Loading of Gasoline into a Gasoline Cargo Tank from a Bulk Plant: An owner or operator of a gasoline cargo tank shall only load gasoline at a bulk gasoline plant loading rack when the following conditions are met:

- a. The gasoline cargo tank integrity is maintained and verified by:
 - (1) The display of a Maricopa County Vapor Tightness Certification decal on the gasoline cargo tank; or
 - (2) An affidavit per Section 103.2(a)(6) of this rule is readily available.
- b. A vapor recovery hose shall be connected prior to the connection of any gasoline loading hose at any bulk loading rack.
- c. Connect an additional vapor recovery hose before connecting any additional gasoline loading hose, unless an assisted vapor recovery system is serving the vapor hose that is already connected.
- d. Disconnect loading hoses and vapor recovery hoses in such a way as to prevent excess gasoline drainage (more than 2 teaspoonsful) from escaping from the hose in one connect/disconnect cycle.
- e. Use a bucket or other effective capture device to catch any gasoline dripping during the connection or disconnection of both the gasoline loading hose from the gasoline cargo tank and the vapor hose from the loading dock's vapor receiving pipe.
 - (1) Spills and any gasoline that is deposited in or on an area other than within the gasoline cargo tank shall be collected and contained. This can include, but is not limited to, the correct use of buckets and/or absorbent material designed for the purpose and the correct disposal of the collected gasoline.
 - (2) Any gasoline that escapes, spills, or leaks must be collected and contained in a manner that will prevent evaporation into the atmosphere.

302.2 Loading of Gasoline at a Bulk Terminal: An owner or operator of a gasoline cargo tank shall only load gasoline at a gasoline bulk terminal when the following conditions are met:

- a. The gasoline cargo tank integrity shall be maintained and verified by the display of a Maricopa County Vapor Tightness Certification decal on the gasoline cargo tank. **b.** A vapor recovery hose shall be connected prior to the connection of any gasoline loading hose at any bulk loading rack.

- c. Connect an additional vapor recovery hose before connecting any additional gasoline loading hose, unless an assisted vapor return system is serving the vapor hose that is already connected.
- d. Disconnect loading hoses and vapor recovery hoses in such a way as to prevent excess gasoline drainage (more than 2 teaspoonsful) from escaping from the hose in one connect/disconnect cycle.
- e. Use a bucket or other effective capture device to catch any gasoline dripping during the connection or disconnection of both the gasoline loading hose from the gasoline cargo tank and the vapor hose from the loading dock's vapor receiving pipe.
 - (1) Spills and any gasoline that is deposited in or on an area other than within the gasoline cargo tank shall be collected and contained. This can include, but is not limited to, the correct use of buckets and/or absorbent material designed for the purpose and the correct disposal of the collected gasoline.
 - (2) Any gasoline that escapes, spills, or leaks must be collected and contained in a manner that will prevent evaporation into the atmosphere.

302.3 Loading of Gasoline into a Stationary Gasoline Storage Tank at a Non-Retail Gasoline Dispensing Facility: An owner or operator of a gasoline cargo tank shall only load gasoline at a non-retail gasoline dispensing facility when the following conditions are met:

- a. The gasoline cargo tank integrity is maintained and verified by:
 - (1) The display of a Maricopa County Vapor Tightness Certification decal on the gasoline cargo tank; or
 - (2) An affidavit per Section 103.2(a)(6) of this rule is readily available.
- b. A vapor recovery hose shall be connected prior to the connection of any gasoline loading hose if the stationary gasoline storage tank is configured to include a vapor return connection.
- c. Vapor Recovery Systems Having Remote Vapor Return Lines: If a gasoline cargo tank's vapor recovery hose is connected to a vapor return line that is not part of a dual-point vapor balance system, then there shall not be more than one gasoline loading hose connected to the gasoline cargo tank, and no additional hoses connected to a fill pipe.
- d. An owner or operator shall not remove the lid of a fill pipe unless every other fill pipe either has a lid fastened in place or a loading hose connecting it to the gasoline cargo tank.
- e. A portable fill pipe shall be used to load gasoline into any stationary gasoline storage tank that is not equipped with a permanent submerged fill pipe.
- f. Restriction on Multiple Connections: A gasoline cargo tank shall not simultaneously have more than one gasoline loading hose connected, unless each loading hose is connected to a gasoline cargo tank's dual-point vapor balance system that already has a vapor recovery hose connecting it to the gasoline cargo tank.
- g. A loading hose and a vapor recovery hose shall be thoroughly drained into the gasoline cargo tank before disconnecting the gasoline cargo tank from the gasoline cargo tank's fittings.

- h. The loading hoses and vapor recovery hoses shall be disconnected in such a way as to prevent excess gasoline drainage (more than 2 teaspoonsful) from escaping from the hose in one connect/disconnect cycle.
- i. A bucket or other effective capture device shall be used to catch any gasoline dripping during the connection or disconnection of both the gasoline loading hose from the gasoline cargo tank and the vapor hose from the loading dock's vapor receiving pipe.
 - (1) Spills and any gasoline that is deposited in or on an area other than within the gasoline cargo tank shall be collected and contained. This can include, but is not limited to, the correct use of buckets and/or absorbent material designed for the purpose and the correct disposal of the collected gasoline.
 - (2) Any gasoline that escapes, spills, or leaks must be collected and contained in a manner that will prevent evaporation into the atmosphere.
- j. An owner or operator of a gasoline cargo tank shall only load gasoline into a stationary gasoline storage tank when:
 - (1) The stationary gasoline storage tank is equipped with a vapor return poppetted valve.
 - (2) Any locked cap can be removed.
 - (3) The stationary gasoline storage tank does not have any broken or damaged fitting that prevent the correct connection of a loading hose or a vapor hose.

302.4 Loading of Gasoline into a Stationary Gasoline Storage Tank at a Retail

Gasoline Dispensing Facility: An owner or operator of a gasoline cargo tank shall only load gasoline at a retail gasoline dispensing facility when the following conditions are met:

- a. The gasoline cargo tank integrity shall be maintained and verified by the display of a Maricopa County Vapor Tightness Certification decal on the gasoline cargo tank.
- b. An owner or operator of a gasoline cargo tank shall only load gasoline into a stationary gasoline storage tank when:
 - (1) The stationary gasoline storage tank is equipped with a vapor return poppetted valve.
 - (2) Any locked cap can be removed.
 - (3) The stationary gasoline storage tank does not have any broken or damaged fitting that prevent the correct connection of a loading hose or a vapor hose.
- c. An owner or operator shall not load gasoline to a stationary gasoline storage tank at a retail gasoline dispensing facility unless a vapor hose is first connected from the gasoline cargo tank to a vapor return-line serving the stationary gasoline storage tank.
- d. Vapor Recovery Systems Having Remote Vapor Return Lines: If a gasoline cargo tank's vapor hose is connected to a vapor return line that is not part of a dual-point vapor balance system, then there shall not be more than one gasoline delivery hose connected to the gasoline cargo tank, and no additional hoses connected to a fill tube.

- e. An owner or operator shall not remove the lid of a fill tube unless every other fill tube either has a lid fastened in place or a delivery hose connecting it to the gasoline cargo tank.
- f. **Restriction on Multiple Connection:** A gasoline cargo tank shall not simultaneously have more than one gasoline delivery hose connected, unless each delivery hose is connected to a gasoline cargo tank's dual-point vapor balance system that already has a vapor hose connecting it to the gasoline cargo tank.
- g. Thoroughly drain a loading hose and a vapor recovery hose into the gasoline cargo tank before disconnecting it from the gasoline cargo tank's fittings.
- h. Disconnect a loading hose from a stationary gasoline storage tank before disconnecting the vapor recovery hose.
- i. Disconnect Loading hoses and vapor recovery hoses in such a way as to prevent excess gasoline drainage (more than 2 teaspoonsful) from escaping from the hose in one connect/disconnect cycle.
- j. Spills and any gasoline that are deposited in or on an area other than within the gasoline cargo tank shall be collected and contained. This can include, but is not limited to, the correct use of buckets and/or absorbent material designed for the purpose, and the correct disposal of the collected gasoline.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 MARICOPA COUNTY (MC) VAPOR TIGHTNESS TEST: Testing required by Section 301.2 of this rule, shall be conducted by the owner or operator of the gasoline cargo tank. The Control Officer may at any time observe the tests. An owner or operator shall comply with the following provisions:

401.1 Notification of Required Testing: The owner, operator, or tester shall notify the Control Officer as follows for each gasoline cargo tank being tested to meet requirements of Section 301.2 of this rule:

- a. Contact the Control Officer during normal business hours of the Department at least 4 hours prior to gasoline cargo tank vapor tightness testing.
- b. Provide an estimated start time that is no more than 1 hour prior to actual gasoline cargo tank vapor tightness testing start time.
- c. Except for weekend testing, the Control Officer shall be notified no more than 72 hours prior to gasoline cargo tank vapor tightness testing.
- d. For weekend testing, the notification shall be given, along with the date of testing, prior to 2 PM on Friday (or Thursday, if Friday is a County holiday).
- e. Give the location of the testing.
- f. Any testing that is performed in the 8 hour period between 9 PM and 5 AM is not valid for purposes of satisfying Section 301.2 of this rule requirements, except if the Control Officer gives specific, advance permission for a particular occasion.

401.2 Registration: To obtain a Maricopa County Vapor Tightness Certification decal, the following information shall be submitted to the Control Officer for each gasoline cargo tank that passes the required gasoline cargo tank vapor tightness test:

- a. A completed “MARICOPA COUNTY VAPOR TIGHTNESS CERTIFICATION DECAL APPLICATION” (application) that includes, at a minimum, all of the following information required by Section 502.2 of this rule.
- b. A completed copy of the “Maricopa County Air Quality Department Gasoline Cargo Tank Vapor Tightness Certification Check List” (checklist), and
- c. The annual fee remittance as listed in Rule 280.
- d. Upon receipt of the completed application, checklist and fee remittance, a Maricopa County Vapor Tightness Certification decal will be issued by the Control Officer.

401.3 Expiration:

- a. A Maricopa County Vapor Tightness Certification decal that is issued to a gasoline cargo tank that passed its test in the 4-month period between March 1 through June 30 shall expire at 11:59 PM on June 30 of the following year.
- b. A Maricopa County Vapor Tightness Certification decal that is issued to a gasoline cargo tank that passed its test in the period after June 30 of the previous year and before March 1 of the current year shall expire at 11:59 PM on June 30 of the following year.

401.4 Lost, Defaced or Destroyed Maricopa County Vapor Tightness Certification Decal:

- a. An owner or operator shall notify the Control Officer immediately if a valid Maricopa County Vapor Tightness Certification decal is lost, defaced, or destroyed.
- b. The Control Officer may require a demonstration of need for decal replacement.
- c. If Rule 280 so provides, the Control Officer may charge a fee for reissue or substitute issue of a lost, defaced, or destroyed Maricopa County Vapor Tightness Certification decal, if the Control Officer determines that the Department is not at fault.

402 INSTALLATION OF CONTROL DEVICE: An owner or operator of a gasoline cargo tank testing operation who chooses to comply with the Section 301.3 of this rule purging provisions through the use of a control device shall submit, an application for a Maricopa County Air Pollution Control Permit and an Operation and Maintenance Plan for the control device.

SECTION 500 – RECORDS AND MONITORING

501 MARICOPA COUNTY (MC) GASOLINE CARGO TANK VAPOR TIGHTNESS TESTING REQUIREMENT:

Each gasoline cargo tank shall passes all of the vapor tightness tests in the listed order of Section 501.1 of this rule, using the same vapor hose during each test as will be used for loading. If more than one vapor recovery hose is used for loading, the sequence of tests shall be performed for each vapor hose.

- a. **Pressure Test:** Lose no more than 1.0 inch (25.4 mm) of water column in 5.0 minutes, when pressurized to a gauge pressure of 18 inches (45.7 cm) of water in 2 consecutive runs according to procedures in subsections 5.1.1 through 5.2.7 of EPA Method 27, as incorporated by reference in Section 505 of this rule; and

- b. **Vapor Valve Loss Test:** Lose no more than 5.0 inches (127 mm) of water column in 5.0 minutes, measured in the vapor system after the gasoline cargo tank compartments are first collectively pressurized to a gauge pressure of 18 inches (45.7 cm) of water and then the vapor valves are closed, per Section 504.2 of this rule; and
- c. **Vacuum Test:** Gain no more than 1.0 inch (25.4 mm) of water column in 5.0 minutes, when initially evacuated to a gauge pressure of 6 inches (15.2 cm) of water, in 2 consecutive runs, per subsections 5.3.1 through 5.3.7 of EPA Method 27, as incorporated by reference in Section 505 of this rule.
- d. **Pressure Instability:** A test is invalidated if during the positive pressure test or the vapor valve loss test, more than ½ inch water pressure is gained. A test is invalid if during the vacuum test the vacuum is increased by more than minus ½ inch.

A gasoline cargo tank shall be repaired, retested, and pass all three (3) subtests in the same testing period within 15 days of testing if it does not pass all three (3) subtests of Section 501.1 of this rule.

502 RECORDKEEPING AND REPORTING REQUIREMENTS:

The owner or operator of a gasoline cargo tank subject to this rule shall maintain records of all certification, testing, and repairs.

- a. Such records must be maintained in a legible, readily available condition for at least 5 years after the date the testing and repair is completed.
- b. Upon verbal or written request by the Control Officer, records shall be provided within a reasonable time. If the Control Officer is at the site where requested records are kept, records shall be provided without delay.

The records of the gasoline cargo tank vapor tightness certification testing required by Section 301.2 of this rule, must be recorded in both of the following documents: “Maricopa County Vapor Tightness Certification Decal Application” and the “Maricopa County Air Quality Department Gasoline Cargo Tank Vapor Tightness Certification Check List”. Pressure and vacuum shall be recorded to no less than the nearest quarter inch or half-centimeter of water column. The minimum requirements for each of these 2 documents follow:

- a. For the “Maricopa County Vapor Tightness Certification Decal Application”:
 - (1) Owner's name and address.
 - (2) The manufacturer’s gasoline cargo tank serial number.
 - (3) The gasoline cargo tank unit number.
 - (4) The location of the test.
 - (5) The time of the test.
 - (6) The date of the test.
 - (7) For the pressure test, two (2) readings: the change in pressure (in inches of water) for Run 1 and the change in pressure for Run 2.
 - (8) For the vapor-valve loss test one (1) reading: the total change in pressure during the test.

- (9) For the vacuum test, two (2) readings: the total change in vacuum during Run 1 and the same for Run 2.
 - (10) The signature of the person conducting the vapor tightness test.
- b.** The “Maricopa County Air Quality Department Gasoline Cargo Tank Vapor Tightness Certification Check List” shall contain at least the following information:
- (1) Owner's name and address.
 - (2) Manufacturer’s gasoline cargo tank serial number.
 - (3) The gasoline cargo tank unit number.
 - (4) The gasoline cargo tank capacity.
 - (5) Whether the gasoline cargo tank was purged of gasoline vapors.
 - (6) The location of the test.
 - (7) The time of the test.
 - (8) The date of the test.
 - (9) Initial testing information:

 - (a) The time the test began.
 - (b) The initial pressure in inches of water.
 - (c) The finish time of the test.
 - (d) The final pressure of the test.
 - (e) The pressure change between the start and end of the test.
 - (f) If the initial pressure test failed:

 - (i) Record one set of readings in the row “Initial Test.”
 - (ii) Record the elapsed time if the pressure reached zero before five (5) minutes.
 - (iii) Record any repairs conducted.
 - (10) Testing Information for each test:

 - (a) The time the test began.
 - (b) The initial pressure in inches of water.
 - (c) The finish time of the test.
 - (d) The final pressure of the test; and
 - (e) The pressure change between the start and end of the test.

- (11) The date of the next leakage test if the set of three (3) subtests are not all passed.
- (12) The signature of the person conducting the vapor tightness test.

503 MONITORING FOR LEAKS: The Control Officer may at any time monitor a gasoline cargo tank, including the vapor collection system, for vapor and liquid leaks to ascertain if it is vapor tight and leak free. The Control Officer shall follow the test procedure in Section of this rule and shall use one or more of the methods in Sections 503.2 and 503.3 of this rule to determine vapor tight and leak free conditions:

503.1 Combustible Gas Detector (CGD) or an Organic Vapor Analyzer (OVA) - Test Procedure:

- a. **Calibration:** Within four (4) hours prior to monitoring, the CGD or OVA shall be properly calibrated for a 20 percent LEL response or to 10,000 ppm with methane.
- b. **Probe Distance:** The probe inlet shall be one (1) inch (2.5 cm) or less from the potential leak source when searching for leaks. The probe inlet shall be one (1) inch (2.5 cm) from the leak source when the highest detector reading is being determined for a discovered leak. When the probe is obstructed from moving within one (1) inch (2.5 cm) of an actual or potential leak source, the closest practicable probe distance shall be used.
- c. **Probe Movement:** The probe shall be moved slowly, not faster than 1.6 inches per second (4 centimeters per second). If there is any meter deflection at an actual or potential leak source, the probe shall be positioned to locate the point of highest meter response.
- d. **Probe Position:** The probe inlet shall be positioned in the path of the vapor flow from an actual or potential leak such that the central axis of the probe-tube inlet shall be positioned coaxially with the path of the most concentrated vapors.
- e. **Wind:** Wind shall be blocked as much as possible from the space being monitored. The annual leak detection test required by Section 401 of this rule shall be valid only when wind speed in the space being monitored is five (5) mph or less.
- f. **Data Recording:** The highest detector reading and location for each incidence of detected leakage shall be recorded, along with the date and time. If no gasoline vapor is detected, that fact shall be entered into the record.

503.2 Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3:

- a. Spray a soap solution over all potential leak sources. The soap solution may be a commercially available leak detection solution or may be prepared using concentrated detergent and water. A pressure sprayer or squeeze bottle may be used to dispense the solution.
- b. Observe the potential leak sites to determine if any bubbles are formed.
 - (1) If no bubbles are observed, the source is presumed to have no detectable vapor leaks.
 - (2) If any bubbles are observed, the instrument techniques of Section 503.1 of this rule, shall be used to verify if a vapor leak exists.

503.3 Optical Gas Imaging: A certified operator of a calibrated optical gas imaging device may use an optical gas imaging instrument to identify vapor leaks. If a vapor leak is detected, the instrument techniques listed in Section 503.1 of this rule shall be used to verify if a vapor leak exists.

504 COMPLIANCE:

504.1 Pressure and Vacuum Tests: The tests to determine compliance with Section 501.1 of this rule shall be performed according to EPA Method 27 - Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure Vacuum Test, except that the definition of gasoline shall be according to this rule.

504.2 Test of Internal Vapor Valves: The tests to determine compliance with Section 501.1 of this rule, shall be performed immediately after successfully passing the pressure subtest, without performing any intervening maintenance or repair on the vapor valves.

504.3 Confirmation of a vapor leak detected on a gasoline cargo tank during loading shall be determined by properly deploying a pressure tap adapter that conforms to Method 27 provisions, and demonstrating the leak according to Section 503 of this rule, while the pressure is less than 20 inches of water column.

504.4 Pursuant to Section 203, Reid vapor pressure shall be determined using ASTM D323 - 15a: Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).

505 TEST METHODS INCORPORATED BY REFERENCE: The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods are adopted by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. Alternative test methods as approved by the Administrator or other EPA-approved test methods may be used upon prior written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method will constitute a violation. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department, 1001 N. Central Avenue, Suite 125, Phoenix, AZ 85004-1942.

Optical Gas Imaging: Alternative Work Practice for Monitoring Equipment Leaks, 40 CFR 60.18(g). An owner or operator may use an optical gas imaging instrument instead of a 40 CFR part 60, Appendix A-7, Method 21 to monitor for equipment volatile organic compound leaks.

EPA Method 21 – Determination of Volatile Organic Compound Leaks.

EPA Method 27 Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure-Vacuum Test.

ASTM D323 - 15a: Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 353
STORAGE AND LOADING OF GASOLINE AT GASOLINE DISPENSING FACILITIES**

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SECTION 100 – GENERAL

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

**RULE 353
STORAGE AND LOADING OF GASOLINE AT GASOLINE DISPENSING FACILITIES**

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Revised 07/13/1988; Revised 04/06/1992; Revised 06/16/1999; Revised 09/25/2013; and **Revised 11/02/2016**

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS**

RULE 353

STORAGE AND LOADING OF GASOLINE AT GASOLINE DISPENSING FACILITIES

SECTION 100 – GENERAL

- 101 PURPOSE:** To limit emissions of volatile organic compounds (VOCs) during storage and loading of gasoline at gasoline dispensing facilities.
- 102 APPLICABILITY:** This rule applies to an owner or operator who operates a gasoline dispensing facility (GDF) at which gasoline is stored in and loaded into stationary gasoline dispensing tanks with a capacity of more than 250 gallons (946 l), including those located at airports.
- 103 EXEMPTIONS:**
- 103.1** This rule does not apply to the storage and loading of the following fuels:
- a. Diesel.
 - b. Liquefied petroleum gas (LPG).
- 103.2 Aviation Gasoline Loaded at Airports:** The loading of aviation gasoline into stationary storage tanks at airports, and the subsequent loading of aviation gasoline within the airport, is exempt from Section 304 and Section 305.1 of this rule. The storage of aviation gas at airports is subject to this rule.
- 103.3 Bulk Gasoline Plant or Bulk Gasoline Terminal:** This rule does not apply to a bulk gasoline plant or a bulk gasoline terminal as defined in Rule 351 of these rules.
- 103.4 Stationary Gasoline Dispensing Tanks for Farm Operations:** Any stationary gasoline dispensing tank used exclusively for the fueling of implements of normal farm operations must comply with Section 302 (General Housekeeping Requirements), but is exempt from all other requirements of this rule.
- 103.5 Stage 1 Vapor Recovery System (VR System):** The VR System provisions of Section 305 of this rule shall not apply to the following stationary gasoline dispensing tanks:
- a. Non-Resale Gasoline Dispensing Facilities: Any stationary GDF receiving less than 120,000 gallons (454,250 l) of gasoline in any twelve (12) consecutive calendar months, dispensing no resold gasoline, and having each stationary gasoline dispensing tank equipped with a permanent submerged fill pipe, is exempt from Section 305 of this rule. A facility shall become subject to the provisions of Section 305 of this rule by exceeding the 120,000 gallon (454,250 l) threshold and shall remain subject to such provisions even if annual amount of gasoline received later falls below this threshold.
 - b. Stationary Gasoline Dispensing Tanks of 1000 Gallons (3785 l) or Less: Any stationary gasoline dispensing tank having a capacity of 1000 gallons (3785 l) or less which was installed prior to October 2, 1978, provided that such tank is equipped with a permanent submerged fill pipe is exempt from Section 305 of this rule. Where, because of government regulation including, but not limited to,

Fire Department codes, such a fill pipe cannot be installed, the gasoline shall be delivered into the tank using a nozzle extension that reaches within six (6) inches (15.24 cm) of the tank bottom.

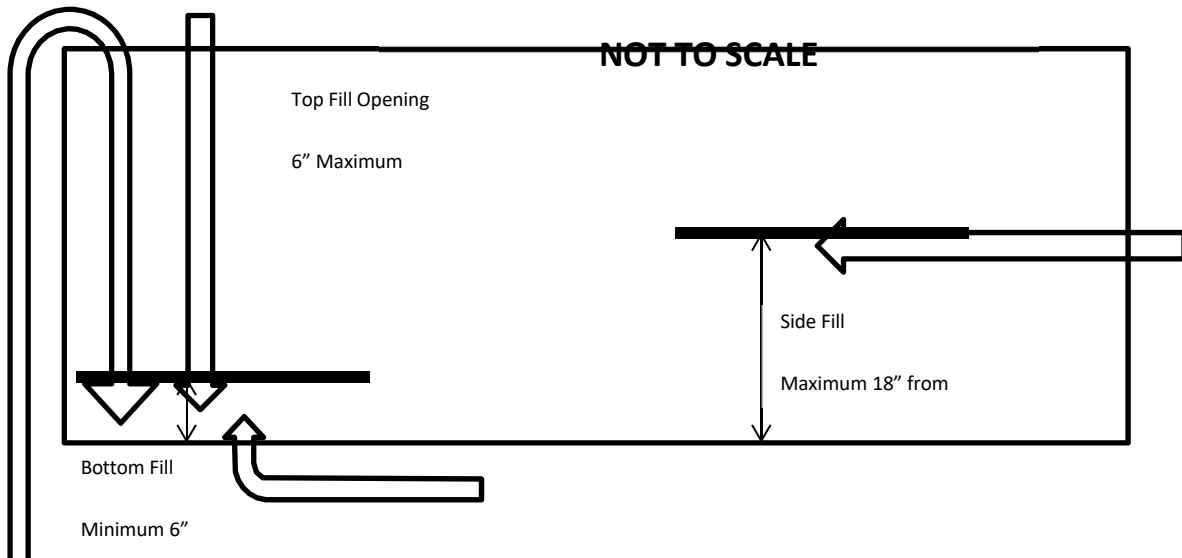
- 103.6 Loading of Gasoline:** The owner or operator of a stationary GDF that is unattended or when there is only one owner or operator under control of the stationary GDF present, the owner or operator of the stationary GDF is exempt from Section 304 of this rule.

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

- 201 AVIATION GASOLINE (AVGAS):** A type of gasoline used to fuel a piston engine aircraft.
- 202 CARB-CERTIFIED:** A vapor control system, subsystem, or component that has been specifically approved by system configuration and manufacturer's name and model number in an executive order of the California Air Resources Board (CARB), pursuant to Section 41954 of the California Health and Safety Code.
- 203 COAXIAL VAPOR BALANCE SYSTEM:** A type of vapor balance system in which the gasoline vapors are removed through the same opening through which the fuel is delivered.
- 204 DUAL-POINT VAPOR BALANCE SYSTEM:** A type of vapor balance system in which the storage tank is equipped with an entry port for a gasoline fill pipe and a separate exit port for a vapor connection.
- 205 EXCESS GASOLINE DRAINAGE:** More than 10 milliliters (2 teaspoonsful) of liquid gasoline lost from the end of a fill hose or vapor hose in the process of connecting or disconnecting the hose; or any quantity of gasoline escaping out the end of such a hose that wets any area(s) on the ground having an aggregate area greater than 113 square inches, or the perimeter of which would encompass a circle of 12 inches (30.5 cm) diameter. This does not include drainage into a fill pipe's spill containment receptacle.
- 206 GASOLINE:** Any petroleum distillate, petroleum distillate/alcohol blend, petroleum distillate/organic compound blend, or alcohol having a Reid vapor pressure between 4.0 and 14.7 psi (200–760 mm Hg.), as determined by Section 504.2 of this rule, and which is used as a fuel for internal combustion engines.
- 207 GASOLINE CARGO TANK:** A delivery tank truck or railcar which is loading or unloading gasoline, or which has loaded or unloaded gasoline on the immediately previous load. This includes any hoses the vessel carries through which deliveries must be made.
- 208 GASOLINE DISPENSING FACILITY (GDF):** Any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine, including a nonroad vehicle or nonroad engine used solely for competition. These facilities include, but are not limited to, facilities that dispense gasoline into on- and off-road, street, or highway motor vehicles, lawn equipment, boats, test engines, landscaping equipment, generators, pumps, and other gasoline fueled engines and equipment.
- 209 GASOLINE VAPORS:** Vapors, originating from liquid gasoline, that are usually found in mixture with air. Included are any droplets of liquid gasoline or of gasoline vapor condensate that are entrained by the vapor.
- 210 LEAK-FREE:** A condition in which there is no liquid gasoline escape or seepage of more than 3 drops per minute from gasoline storage, handling, and ancillary equipment, including, but not limited to, seepage and escapes from above ground fittings.

- 211 MARICOPA COUNTY (MC) VAPOR TIGHTNESS TEST:** The complete pressure, vacuum, and vapor-valve testing of a gasoline cargo tank that is performed according to Maricopa County specifications as described in Rule 352 of these rules.
- 212 POPPETTED DRY BREAK:** A type of vapor loss control equipment that opens only by connection to a mating device to ensure that no gasoline vapors escape from the stationary gasoline dispensing tank before the vapor recovery line is connected.
- 213 PURGING:** Removing, cleaning, or scouring out gasoline vapors from all or a portion of a gasoline cargo tank by active or passive means and emitting the vapors into the atmosphere.
- 214 STAGE 1 VAPOR RECOVERY SYSTEM (VR SYSTEM):** At a stationary GDF, the use of installed vapor recovery equipment designed to reduce by at least 95% the VOC vapor that would otherwise be displaced into the atmosphere from a stationary gasoline dispensing tank when gasoline is delivered into the tank by a gasoline cargo tank. This reduction may be done either by capturing the displaced vapors within the gasoline cargo tank, and or by processing the vapors on site with an emission processing device.
- 215 STATIONARY GASOLINE DISPENSING TANK:** Any stationary tank which dispenses gasoline directly into a motorized vehicle's fuel tank, dispenses gasoline into an aircraft's fuel tank, or dispenses gasoline into a watercraft's fuel tank that directly fuels its engine(s).
- 216 SUBMERGED FILL:** Any discharge pipe or nozzle which meets the applicable specification as follows:
- 216.1 Top-Fill or Bottom-Fill:** The end of the discharge pipe or nozzle is totally submerged when the liquid level is six (6) inches (15 cm) from the bottom of the tank.
- 216.2 Side-Fill:** At its highest point within the stationary gasoline dispensing tank less 2,000,000 gallon capacity, the end of the discharge pipe or nozzle is totally submerged when the liquid level is eighteen (18) inches (46 cm) from the bottom of the tank.

Submerged Fill Diagram



- 217 TANK CAPACITY:** The maximum volume of liquid gasoline a particular tank is allowed to store while still complying with all applicable rules, including local, state, and Federal rules.

- 218 VAPOR LOSS CONTROL EQUIPMENT:** Any piping, hoses, equipment, or devices which are used to collect, store and/or process VOC vapors at a service station or other gasoline dispensing facility.
- 219 VAPOR TIGHT:** A condition in which a suitable detector at the site of (potential) leakage of vapor shows less than 10,000 ppmv when calibrated with methane or the detector shows less than 1/5 lower explosive limit (LEL) when calibrated with a gas specified by the manufacturer and used according to the manufacturer's instructions.

SECTION 300 – STANDARDS

301 MANUFACTURERS, SUPPLIERS, AND OWNER OR OPERATOR:

- 301.1** A manufacturer, supplier, owner or operator shall not supply, offer for sale, sell, install or allow the installation of an above ground or underground storage tank, any type of VR System or any of its components unless the tank, system and components meet the following:
- a. Replacement Components for A VR System:** After June 16, 1999, a VR System for which there is a CARB specification shall be replaced with components that comply with one of the following:
 - (1)** The equipment is supplied by the manufacturer as a CARB-certified component; or
 - (2)** The equipment is rebuilt by a person who is authorized by CARB to rebuild that specific CARB-certified component; or
 - b.** All vapor recovery lines from stationary gasoline dispensing tanks shall be equipped with CARB-certified, spring-loaded, vapor tight, poppetted dry breaks.
 - c.** After November 2, 2016, each new or rebuilt installed component shall be clearly identified with a permanent identification affixed by the certified manufacturer or rebuilder.
- 301.2** Only a State of Arizona licensed Vapor Recovery Registered Service Representative (RSR) shall install an above ground or underground storage tank or vapor recovery system components.
- 301.3** An owner or operator shall not:
- a.** Install a coaxial fill pipe in a new installation (after June 16, 1999); or
 - b.** Reinstall a coaxial fill pipe during any changes to the stationary gasoline dispensing tank when the top of the tank is exposed and the vapor port bung is pre-configured to accept vapor recovery piping.
- 301.4** The owner or operator of a stationary gasoline dispensing tank shall verify that vapor recovery equipment (unless exempted by this rule) is properly connected and in use at all times while gasoline is actively being loaded. If the stationary GDF is unattended or there is only one owner or operator under control of the stationary GDF on-site, the owner or operator of the gasoline cargo tank is responsible for the proper connection and use of the vapor recovery equipment (unless exempted by this rule) while gasoline is being actively loaded.
- 301.5** An owner or operator shall only load, allow the loading, or provide equipment for the loading of gasoline from only a gasoline cargo tank identified with a valid Maricopa County (MC) Vapor Tightness Test decal into any stationary gasoline storage tank.

302 GENERAL HOUSEKEEPING REQUIREMENTS: An owner or operator shall not store gasoline or permit the loading of gasoline in any stationary gasoline dispensing tank located above or below ground unless all of the following conditions are met:

- 302.1.** Minimize gasoline spills;
- 302.2** Clean up spills as expeditiously as practicable;
- 302.3** Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use;
- 302.4** Minimize gasoline sent to waste collection systems that collect and transport gasoline to reclamation and recycling equipment, such as oil/water separators;
- 302.5** Properly dispose of any VOC containing material.

303 GASOLINE STORAGE EQUIPMENT AND OPERATION REQUIREMENTS:

303.1 Underground Storage Tank (UST): By December 2, 2016, an UST with a capacity more than 250 gallons (946 l) must meet all of the following conditions unless exempt from the VR System requirements per Section 103.5 of this rule:

- a.** The UST is equipped and maintained according to Section 301 of this rule;
- b.** For an existing stationary GDF, maintain a dual-point VR System or a coaxial vapor balance system. For new installations (after June 16, 1999) or modifications to an existing stationary GDF (after June 16, 1999), install and maintain a dual-point vapor balance system with separate fill and vapor connection points;
- c.** A pressure-vacuum vent is installed and maintained per manufacturer's specifications;
- d.** The VR System is maintained and operated according to the manufacturer's specifications and the applicable CARB Executive Orders including the corresponding CARB approved Installation, Operation and Maintenance Manual;
- e.** A permanent submerged fill pipe is installed and maintained to ensure the highest point of the discharge opening is no more than six inches (6") from the bottom of the UST;
- f.** Each fill pipe is equipped with gasketed vapor tight cap;
- g.** After December 2, 2016 each popped dry break is equipped with vapor tight seal and gasketed vapor tight cap;
- h.** Each gasketed vapor tight cap is maintained in a closed position except when the fill pipe or popped dry break it serves is actively in use;
- i.** The fill pipe assembly, including fill pipe, fittings and gaskets, is maintained to prevent vapor leakage from any portion of the VR System; and
- j.** A spill containment receptacle is installed and maintained free of standing liquid, debris and other foreign matter. The spill containment receptacle shall be equipped with an integral drain valve or other CARB-certified equipment, to return spilled gasoline to the UST. The drain valve shall be maintained closed and free of vapor emissions at all times except when the valve is actively in use.

303.2 Above Ground Storage Tank (AST): By November 2, 2016, an AST with a capacity more than 250 gallons (946 l) must meet all of the following conditions:

- a. A permanent submerged fill pipe is installed and maintained to ensure the highest point of the discharge opening is no more than six inches (6") from the bottom of the AST. If the AST is side filled, the fill pipe discharge opening is no more than 18 inches (18") above the tank bottom;
- b. A pressure-vacuum vent is installed and maintained per manufacturer's specifications;
- c. Each fill pipe is equipped with a gasketed vapor tight cap;
- d. All threads, gaskets, and mating surfaces of the fill pipe assembly shall prevent liquid or vapor leakage at the joints of the assembly;
- e. Each gasketed vapor tight cap is maintained in a closed position except when actively in use;
- f. Prior to November 2, 2016, if an AST is equipped with a spill containment receptacle, it shall be maintained to be free of standing liquid, debris and other foreign matter. On or after December 2, 2016, a newly installed AST shall be equipped with a spill containment receptacle that is maintained to be free of standing liquid, debris and other foreign matter;
- g. A spill containment receptacle is installed at each fill pipe; and
- h. Any overflow prevention equipment shall be approved, installed and maintained vapor tight to the atmosphere. Any device mounted within the fill pipe shall be so designed and maintained that no vapor from the vapor space above the gasoline within the tank can penetrate into the fill pipe or through any of the fill pipe assembly into the atmosphere.

304 LOADING OF GASOLINE: Prior to accepting a load of gasoline, an owner or operator of a stationary GDF shall verify all of the following unless exempted in Section 103 of this rule:

304.1 The gasoline cargo tank clearly displays a valid Maricopa County Vapor Tightness Certification decal that is permanently mounted near the front on the right (passenger) side of the vessel.

304.2 The owner or operator of the gasoline cargo tank connects the vapor recovery hose prior to connecting loading hose.

305 CONTROL OF VOC VAPORS:

305.1 Gasoline vapors displaced from a stationary gasoline dispensing tank while being loaded shall be handled by a VR System, unless the tank is exempted by Section 103.5 of this rule.

305.2 VR System Configuration:

- a. Replacement: After June 16, 1999, no part of a VR System for which there is a CARB specification shall be replaced with anything but CARB-certified components.
- b. Vapor Valves:

- (1) All vapor recovery lines from a stationary gasoline dispensing tank shall be equipped with CARB-certified, spring-loaded, vapor-tight, poppetted dry breaks.
 - (2) Vapor valves shall be inspected pursuant to Section 401 of this rule to determine if closure is complete and gaskets are intact; a record shall be made pursuant to Section 502 of this rule.
- c. AST: After June 16, 1999, an AST shall have CARB-certified fittings wherever CARB so specifies.
 - d. By December 2, 2016, each AST and UST shall use CARB-certified fittings exclusively wherever CARB so specifies, and:
 - (1) Shall have its own separate, functioning dual-point vapor return line;
 - (2) Is allowed to have a combination vapor recovery system that in addition to having a separate dual-point vapor recovery line, also has vapor piping/fittings linking it to one or more (other) stationary gasoline dispensing tanks.

305.3 Equipment Maintenance and Use Required:

- a. All vapor loss control equipment shall be:
 - (1) Installed as required;
 - (2) Operated as recommended by the manufacturer; and
 - (3) Maintained leak-free, vapor tight and in good working order.
- b. Coaxial Systems: Both spring-loaded and fixed coaxial fill pipes shall be
 - (1) Maintained according to the standards of their manufacturer(s); and
 - (2) Be operated so that there is no obstruction of vapor passage from the stationary gasoline dispensing tank to the gasoline cargo tank.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 INSPECTIONS: The owner or operator of a GDF shall conduct inspections. A record shall be made pursuant to Section 503 of this rule.

The inspection shall include, but is not limited to all of the following:

- a. The spill containment receptacle shall be:
 - (1) Free of cracks, rust and defects;
 - (2) Free of foreign material;
 - (3) Empty of liquid, including gasoline;
 - (4) If necessary, installed with a drain valve that properly seals.
- b. The external fittings of the fill pipe assembly shall be:
 - (1) Intact and not loose;

- (2) Covered with a gasketed cap that fits securely onto the fill pipe.
- c. The popped dry break shall be:
 - (1) Equipped with a vapor tight seal;
 - (2) Covered with a gasketed cap that fits securely onto the popped dry break.

The inspections shall be conducted:

- a. At least once per calendar week; or
- b. If the gasoline dispensing facility receives gasoline loads less than once per calendar week, the inspection shall take place upon completion of the receipt of the load of gasoline.

402 BURDEN OF PROOF:

Proving Exempt Status: The burden of proof of eligibility for exemption from a provision of this rule is on the owner or operator. An owner or operator seeking such an exemption shall maintain adequate records and furnish them to the Control Officer upon request.

Providing Proof of Equipment Compliance: It is the responsibility of the owner or operator, to provide proof, when requested by the Control Officer, that a vapor recovery system or its modifications meet the requirements of this Rule 353.

403 CARB DECERTIFICATION: An owner or operator shall not install or reinstall a component related to vapor recovery that has been decertified by CARB.

404 OTHER AGENCIES' REQUIREMENTS: Compliance with this rule does not relieve or otherwise affect the owner or operator's obligation to comply with any other applicable federal, state, or local legal requirement, including, but not limited to, rules promulgated by the Arizona Department of Agriculture, Weights and Measures Services Division; local fire department codes ; and local zoning ordinances.

SECTION 500 – MONITORING AND RECORDS:

501 DETERMINING VAPOR TIGHT STATUS: An owner or operator or Control Officer shall follow the test procedure in Section 501.1 of this rule and shall use one or more of the methods listed in Sections 501.2 or 501.3 of this rule to determine the vapor tight status on a VR System or spill containment equipment at a stationary GDF or on a gasoline cargo tank.

Combustible Gas Detector (CGD) or Organic Vapor Analyzer (OVA) - Test Procedure: During loading of gasoline into stationary gasoline dispensing tanks, the peripheries of all potential sources of leakage during loading at the GDF are checked with a CGD or OVA as follows:

- a. **Calibration:** Within four (4) hours prior to monitoring, the CGD or OVA shall be properly calibrated for a 20 percent LEL response or to 10,000 ppm with methane.
- b. **Probe Distance:** The probe inlet shall be one (1) inch (2.5 cm) or less from the potential leak source when searching for leaks. The probe inlet shall be one (1) inch (2.5 cm) from the leak source when the highest detector reading is being determined for a discovered leak. When the probe is obstructed from moving within one (1) inch (2.5 cm) of an actual or potential leak source, the closest practicable probe distance shall be used.

- c. **Probe Movement:** The probe shall be moved slowly, not faster than 1.6 inches per second (4 centimeters per second). If there is any meter deflection at an actual or potential leak source, the probe shall be positioned to locate the point of highest meter response.
- d. **Probe Position:** The probe inlet shall be positioned in the path of the vapor flow from an actual or potential leak such that the central axis of the probe-tube inlet shall be positioned coaxially with the path of the most concentrated vapors.
- e. **Wind:** Wind shall be blocked as much as possible from the space being monitored. The annual leak detection test required by Section 401 of this rule shall be valid only when wind speed in the space being monitored is five (5) mph or less.
- f. **Data Recording:** The highest detector reading and location for each incidence of detected leakage shall be recorded, along with the date and time. If no gasoline vapor is detected, that fact shall be entered into the record.

Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3:

- a. Spray a soap solution over all potential leak sources. The soap solution may be a commercially available leak detection solution or may be prepared using concentrated detergent and water. A pressure sprayer or squeeze bottle may be used to dispense the solution.
- b. Observe the potential leak sites to determine if any bubbles are formed.
 - (1) If no bubbles are observed, the source is presumed to have no detectable vapor leaks.
 - (2) If any bubbles are observed, the instrument techniques of Section 501.1 of this rule shall be used to verify if a vapor leak exists.

Optical Gas Imaging: A certified operator of a calibrated optical gas imaging device may use an optical gas imaging instrument to identify vapor leaks. If a vapor leak is detected, the instrument techniques listed in Section 501.1 of this rule shall be used to verify if a vapor leak exists.

502 COMPLIANCE INSPECTIONS: Any stationary gasoline dispensing tank required by this rule to be equipped with a VR system may be subject to monitoring for vapor tightness and liquid leak tightness during any working hours. Such a tank may be opened for gauging or inspection when loading operations are not in progress, provided that such tank is part of an open system or is served by a positive-pressure relief valve with a relief setting not exceeding +½ lb psig.

503 GDF RECORDKEEPING: The owner or operator of each stationary GDF in Maricopa County shall maintain records as follows:

The total amount of gasoline received each month shall be recorded by the end of the following month.

The owner or operator of a stationary GDF shall record inspections in a permanent record or log book:

- a. By the end of Saturday of the following week; or
- b. If the gasoline dispensing facilities receives gasoline loads less than once per calendar week, the owner or operator shall record the inspection within three days after the receipt of the load of gasoline.

These records and any reports or supporting information required by this rule or by the Control Officer shall be retained for at least five (5) years.

Records of the past twelve (12) months shall be in a readily accessible location and must be made available to the Control Officer without delay upon verbal or written request.

504 COMPLIANCE DETERMINATION:

Control efficiency of vapor loss control equipment and vapor collection/processing systems shall be determined according to EPA Method 2A and either EPA Method 25A or 25B, or by CARB-approved test methods. EPA Method 2B shall be used for vapor incineration devices.

Vapor pressure of gasoline shall be determined using ASTM D323-15a Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method) or ASTM D4953-15, Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method). ASTM D323-15a shall be used for gasoline either containing no oxygenates or MTBE (methyl tertiary butyl ether) as the sole oxygenate. 93 ASTM 4953-15 shall be used for oxygenated gasoline.

Vapor Leaks:

- a. If a determination of vapor tight status is to be made on a VR system or spill containment equipment at a stationary GDF or on a gasoline cargo tank at the station, at least one of the test methods listed in Section 501 of this rule shall be used.
- b. Section 501.1 of this rule probe distance and movement parameters notwithstanding, if it has been established that there are no other interfering vapor escapes, it is an exceedance if a reading by the Control Officer from an established vapor escape above 1/5 LEL (or 10,000 ppm as methane) is sustained for at least five (5) seconds, and the probe is either consistently further than one (1) inch from the source and/or the probe is consistently being moved faster than four centimeters (4 cm) per second.
- c. The Control Officer may count it as a failure to perform weekly inspections pursuant to Section 305.2 of this rule if foreign material is found in a spill containment receptacle and there is no record of an inspection's being performed in the preceding ten (10) days.

505 TEST METHODS INCORPORATED BY REFERENCE: The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods are adopted by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. Alternative test methods as approved by the Administrator or other EPA-approved test methods may be used upon prior written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method will constitute a violation. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department, 1001 N. Central Avenue, Suite 125, Phoenix, AZ 85004-1942.

EPA Test Methods:

- a. EPA Methods 2a ("Direct Measurement of Gas Volume Through Pipes and Small Ducts"), and 2b ("Determination of Exhaust-Gas Volume Flow-Rate from Gasoline Vapor Incinerators"). 40 CFR 60, Appendix A.
- b. EPA Method 21 - Determination of Volatile Organic Compound Leaks.

- c. EPA Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3
- d. EPA Method 25 (“Determination of Total Gaseous Nonmethane Organic Emissions as Carbon”) and its submethods (40 CFR 60, Appendix A).
- e. EPA Method 27 (“Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure-Vacuum Test”) in 40 CFR 60, Appendix A.
- f. Optical Gas Imaging: Alternative Work Practice for Monitoring Equipment Leaks, 40 CFR 60.18(g). An owner or operator may use an optical gas imaging instrument instead of a 40 CFR part 60, Appendix A-7, Method 21 to monitor for equipment volatile organic compound leaks.

ASTM Standards:

- a. ASTM D323-15a “Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).
- b. ASTM D4953-15 “Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method)

CARB Certification and Test Procedures for Gasoline Vapor Recovery

Systems:

- a. California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1B, Static Torque of Rotatable Phase 1 Adaptors, October 8, 2003 edition, California Air Resources Board, P.O. Box 2815, 2020 L. Street, Sacramento, California 95812-2815.
- b. California Air Resources Board Vapor Recovery Test Procedure TP-201.1,— Volumetric Efficiency for Phase I Vapor Recovery Systems, adopted April 12, 1996, and amended February 1, 2001, and October 8, 2003.
- c. California Air Resources Board Vapor Recovery Test Procedure TP-201.1A - “Determination of Efficiency of Phase I Vapor Recovery Systems of Dispensing Facilities with Assist Processors”.
- d. California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1E, Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves, October 8, 2003 edition.
- e. California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1C, Leak Rate of Drop Tube/Drain Valve Assembly, October 8, 2003, edition.
- f. California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1D, Leak Rate of Drop Tube Overflow Protection Devices and Spill Container Drain Valves, October 8, 2003 edition.
- g. California Air Resources Board Vapor Recovery Test Procedure TP-201.3,— Determination of 2-Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities, adopted April 12, 1996, and amended March 17, 1999.
- h. Bay Area Air Quality Management District Source Test Procedure ST-30— Static Pressure Integrity Test—Underground Storage Tanks, adopted November 30, 1983, and amended December 21, 1994.

Additional Test Methods:

- a.** American Petroleum Institute Standard API STD 650 Welded Tanks for Oil Storage, Twelfth Edition, Includes Errata 1 (2013), Errata 2 (2014), and Addendum 1 (2014).
- b.** San Diego County Air Pollution Control District Test Procedure TP-96-1, March 1996, Third Revision.

RULE 358
POLYSTYRENE FOAM OPERATIONS
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Adopted 04/20/05

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS
RULE 358
POLYSTYRENE FOAM OPERATIONS**

SECTION 100 – GENERAL

- 101 PURPOSE:** The purpose of this rule is to limit the emissions of volatile organic compounds (VOCs) from the manufacturing of expanded-polystyrene products.
- 102 APPLICABILITY:** This rule applies to any facility that expands, ages, or molds expandable polystyrene (EPS).

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 BEAD-LOT AND BEAD-LOT IDENTIFIER** – A specific selection of a specific quantity of expandable polystyrene material, all portions of which typically share similar properties. This selected material has been tested in accordance with standard quality-control procedures and is traceable to the time and date on which it was packaged. Traceability is enabled by a bead lot identifier or lot number, which is a unique numeric (or alphanumeric) string that is permanently coupled with the selected material. The lot number always appears on one or more formal transfer/receipt documents retained by both the seller and the buyer and identifies the material's plant of manufacture, as well as the date that it was packaged.
- 202 BLOCK (EPS FOAM BLOCK)** – A block-shaped solid made of EPS foam that was molded as a unit. Typically, a block's depth and width each exceed 23 inches (0.6 m) and a length exceeding 95 inches (2.4 m).
- 203 BLOWING AGENT** – Any substance that, alone or in conjunction with other substances, is capable of producing a cellular (foam) structure in a polymeric material by inflation.
- 204 CUP MOLDING** – The process of making cups, bowls, and similar containers by molding expanded polystyrene globules (prepuff).
- 205 DAY** - Any 24-hour period beginning at 12:00 am - midnight.
- 206 EMISSION CONTROL SYSTEM (ECS)** – A system for reducing emissions of volatile organic compounds, consisting of a capture system (e.g., enclosures, hoods, and ductwork) and control device(s). An ECS may also include gas conditioning equipment such as condensers or prefilters.
- 207 EPS BEADS (EXPANDABLE POLYSTYRENE BEADS)** – Polystyrene beads, particles, or granules, usually less than one-twelfth inch in diameter, that are formulated with a blowing agent (typically 3.5% to 7% of bead weight). When

subjected to prescribed heating in an expansion system, the beads puff up, expanding many times their original volume into low density foam globules (called "prepuff" or "puff") from which a variety of EPS foam products are molded.

- 208 EPS FOAM (EXPANDED POLYSTYRENE FOAM)** – A lightweight, naturally white, foam material, made of polystyrene, from which a variety of common items are made, such as ice-chests, insulation board, protective packaging, and single-use cups.
- 209 LOOSE FILL** – Small, expanded polystyrene forms produced in a variety of shapes that are used as packing material or as stuffing in furnishings. These foam products typically have a density below 6/10 of a pound per cubic foot (pcf).
- 210 NONPRECURSOR ORGANIC COMPOUND** – Any of the organic compounds that have been designated by the EPA as "exempt" (having negligible photochemical reactivity). A listing of the compounds is found in Rule 100 of these rules and regulations.
- 211 POLYSTYRENE** – Any grade, class, or type of thermoplastic polymer, alloy, or blend that is composed of at least 80% polymerized styrene by weight.
- 212 PREPUFF OR PUFF** – Expanded polystyrene globules, prior to molding, formed from EPS beads/granules that have been processed in an expander. No grind/regrind material (i.e., expanded EPS that has been through a grinder) or material within a grinding system is considered to be prepuff.
- 213 SHAPE** – An object made out of EPS that has been molded into a shape other than that of a block, cup, or bowl.
- 214 SPECIALTY BLOCK PRODUCTS** – For the purposes of this rule, a specialty block product is an EPS block or block-derivative (e.g., board, architectural form, etc.) that meets either of the following criteria:
- 214.1** Has a density of 2.0 pounds per cubic foot or greater, as determined by ASTM Method C303; or
- 214.2** Has a density less than 0.8 pounds per cubic foot as determined by ASTM Method C303.
- 215 VOLATILE ORGANIC COMPOUND (VOC)** – Any organic compound that participates in photochemical reactions, except nonprecursor organic compounds.
- 216 VOC CONTENT OF RAW EPS** – For the purposes of this rule, there are 3 different expressions for stating the VOC content of raw EPS beads/granules. Each of these expressions must be made in terms of either the number of pounds of VOC per 100 pounds of beads or the percentage of overall weight (including the VOC weight) that the incorporated VOC constitutes. The percent value shall be expressed with a precision of no less than the nearest tenth of one

percent, which is equivalent to expressing the same number value in pounds VOC per 100 lbs. beads, to the nearest tenth of a pound. The acceptable expressions are:

216.1 Manufacturer-Certified Bead-Lot (MCBL) VOC-Content – A document such as a standard Certificate Of Analysis that numerically presents an EPS bead-lot's VOC content and must contain all of the following elements:

- a. The VOC content printed or written on a paper document by the bead manufacturer, after the manufacturer has had the bead-lot tested to determine the lot's percent VOC, before shipping from the manufacturer; and
- b. The manufacturer's name and the bead-lot, identified on the paper document with the appropriate bead-lot identifier; and
- c. The signature of an officer of the manufacturing facility or the signature of an officer's designee, previously designated in writing by such an officer.

216.2 Post-Manufacture Laboratory-Tested (PMLT) VOC-Content: The results of a laboratory test determining the VOC content of a representative sampling of an intermediate or finished expanded polystyrene-product, or such a test of raw beads any time after their MCBL VOC content has been assigned.

216.3 ISO-Certified Maximum Bead-Model (IMBM) VOC-Content: A numerical value that represents the upper limit of a particular bead-model's VOC-content, which has been:

- a. Initially stipulated by the bead-model's manufacturer in a document that gives the bead-model's unique identifier, and
- b. Subsequently certified for accuracy by the International Standards Organization (ISO).

SECTION 300 – STANDARDS:

301 BLOCK MAKERS: An owner and/or operator of an EPS block-making facility shall comply with Section 301.1 and, if applicable, Section 301.2 of this rule.

301.1 Limit the sum of both the VOC that escaped to atmosphere and the residual VOC in the resulting blocks at the time they are released from the molding machine to not more than 3.0 pounds for every 100 pounds of raw beads processed.

301.2 Specialty Products Alternative Operating Scenario: When producing specialty block-products solely from raw EPS beads that exceed a VOC-content of 5.5 percent by weight, an owner and/or operator may choose the standard in Section 301.2(a) by which to comply with this rule, but only if the requirements in Sections 301.2(b) and 301.2(c) are met.

- a. Limit the sum of both the VOC that escaped to atmosphere and the residual VOC in the resulting blocks at the time they are released from the molding machine to not more than 3.9 pounds for every 100 pounds of raw beads processed (3.9 lbs/100#), and
- b. Taking into account the total weight of all beads processed each year, limit the portion of that weight that is processed under the 3.9 lbs/100# standard to the percent allowed each year by Table I.

TABLE I

ANNUAL PERCENTAGE LIMITS FOR SPECIALTY PRODUCTS MADE UNDER THE SECTION 301.2(a) STANDARD

Column A	Column B
Calendar Year Of Column B Limit	Maximum Percent Of All Raw-Beads Processed Each Year That Are Allowed To Be Processed Under The 3.9 Lb/100# Standard For Specialty Products Only
2006	10.0
2007	9.0
2008	8.0
2009	7.0
2010	6.0
2011 and continuing	5.0

- c. The proportion of annual raw-material throughput that is produced under the Section 301.2(a) standard shall be calculated and recorded according to Section 502.1(d).

302 SHAPE MAKERS: An owner and/or operator of an EPS shape-making facility shall limit the sum of the VOC that escaped to atmosphere and the residual VOC in the resulting shapes to 2.7 pounds for every 100 pounds of raw beads processed.

303 CUP MAKERS: An owner and/or operator of an EPS cup-making facility shall limit the sum of the VOC that escaped to atmosphere and the residual VOC in the resulting cups to 3.2 pounds for every 100 pounds of raw beads processed.

304 LOOSE FILL MAKERS: An owner and/or operator of a facility that makes expanded polystyrene loose fill shall limit the sum of both the VOC that escaped to atmosphere plus the residual VOC in the finished loose fill (measured right after the final curing process) to not more than 2.4 pounds for every 100 pounds of raw EPS materials processed into finished loose fill.

305 PERFORMANCE OF ECS CONTROLLING VOC EMISSIONS: If an ECS is required by this rule, comply with Sections 305.1, 305.2, and 305.3 of this rule.

305.1 The control device (abatement subsystem) of such ECS shall comply with either Section 305.1(a) or Section 305.1(b) of this rule.

- a. Reduce the weight of VOC-as-carbon that enters the control device by at least 94%; or
- b. Maintain an hourly average outlet concentration of VOC below 20 milligrams per dry standard cubic meter. Express mass loading of VOC as milligrams of non-methane organic carbon.

305.2 Each ECS that is operated in order to comply with this rule shall be equipped with monitoring devices capable of demonstrating that the ECS is operating in a manner that assures compliance with this rule. The monitoring devices shall be installed, calibrated, maintained, and operated according to their manufacturers' instructions and the O&M Plan. Typically, such devices provide temperature, pressure, flow-rate, or other indicator(s) of proper ECS function (such as a continuous temperature recorder that monitors an oxidizer's combustion chamber or a condenser's outlet duct, or a pressure recorder that monitors the integrity of a permanent total-enclosure, etc.).

305.3 Records shall be kept according to Section 502.3 of this rule.

306 ECS OPERATION AND MAINTENANCE (O&M) PLANS:

306.1 An owner and/or operator shall provide, implement, and maintain an O&M Plan for each ECS required by this rule. The O&M Plan shall include the monitoring device(s) associated with the ECS.

306.2 The owner and/or operator shall submit to the Control Officer for approval the O&M Plan of each ECS, with its associated monitoring device(s), that is used according to Sections 301.1, 301.2, 302, 303, or 304 of this rule. Also include in such O&M Plans:

- a. Procedures for collecting and recording required data and other information in a form approved by the Control Officer, which shall include data collected through the O&M Plan and through the monitoring of key system operating parameters; and

- b. Procedures and schedules for preventive and corrective maintenance performed for the purpose of maintaining the emission control system in proper operating condition.

306.3 An owner and/or operator of an EPS facility must comply with all O&M Plans that the owner and/or operator has submitted for approval but which have not yet been approved, unless notified otherwise by the Control Officer in writing.

307 VOC CONTAINMENT, IDENTIFICATION, AND DISPOSAL:

307.1 Contain VOC-Emitting Material:

- a. When they are not in use, store all fresh and used non-EPS VOC-containing material in closed, leak-free containers that are labeled according to Section 307.4. Such materials include but are not limited to cleaning solvents, inks, coatings, thinners, and their residues including residues on rags; and
- b. Store raw EPS beads in closed, leak-free, labeled containers when not in use.

307.2 Materials addressed in Section 307.1 of this rule may be placed in an enclosure ducted solely to an ECS that is approved by the Control Officer, instead of in closed containers.

307.3 The owner and/or operator must implement procedures to minimize spills of VOC-containing materials described in Section 307.1(a) of this rule, during their handling and transfer to or from containers; vats, enclosed systems, waste receptacles, and other equipment, whether the material is fresh, used, or waste.

307.4 Identification And Labeling:

- a. Containers used for initial, intermediate, or final storage of VOC-containing materials addressed in Section 307.1 of this rule shall be clearly labeled with their contents.
- b. Content-labeling done according to the requirements of federal hazardous waste (RCRA) or occupational safety (OSHA) statutes and codes meets the requirements in Section 307.4(a) of this rule.

308 EXEMPTION:

308.1 Exemption From Section 301.1 Through Section 306.3: An owner and/or operator of a facility is exempt from the requirements of Section 301.1 through Section 306.3 of this rule, if the total VOC content of all

raw EPS material processed by the facility is, in each calendar year, below 50 tons (100,000 lbs) and, in each calendar month, below 12,000 pounds.

308.2 Burden Of Proof: A person claiming any exemption from this rule or from a provision of this rule shall provide adequate records to verify and maintain any exemption. These may include records of raw material used, laboratory analyses, technical data sheets, and/or performance test results.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE: A person or owner/operator of a facility that is subject to Sections 301, 302, 303, or 304 of this rule shall comply with the following increments of progress:

401.1 By July 20, 2005, the owner and/or operator shall comply with Section 502 through Section 502.2(c) of this rule;

401.2 By August 20, 2005, the owner and/or operator either must submit an application or have been issued a revised permit that addresses the installation and operation of the equipment to be used to achieve compliance with this rule; also, comply with Section 307.1 through Section 307.4 of this rule;

401.3 By April 20, 2006, the owner and/or operator must complete the installation of all equipment required to meet the provisions of this rule and also comply with all O&M Plan requirements in Section 306 and Section 502.3 of this rule; and

401.4 By October 20, 2006, the owner and/or operator must comply with the applicable standards in Sections 301, 302, 303, 304, and 305 of this rule.

SECTION 500 - MONITORING AND RECORDS

501 RECORDS:

501.1 General: Records shall be kept complete, up-to-date, and in a consistent and legible format.

501.2 Retention: Records required by this rule shall be retained for at least 5 years.

501.3 Use Of Other Records: Records that are kept by an EPS facility for other agencies or purposes may be submitted to the Control Officer to meet the record requirements of this rule, provided such records contain the necessary information according to Section 502 of this rule.

502 RECORDKEEPING SPECIFICS:

502.1 Tracking EPS Beads: Effective July 20, 2005, a person subject to this rule shall comply with the following requirements, as applicable.

- a. **Lot ID And VOC Content:** Prior to expanding any part of a bead-lot, an owner and/or operator shall obtain and retain an original or copy of the VOC-content, as defined in Section 217 of this rule, for each separate lot-number/identifier of beads received.
- b. **Total Expanded By Lot And Date:** Each day that raw EPS material is expanded in a facility's expander, an owner and/or operator shall record the amount of each bead-lot expanded and its corresponding lot number/identifier.
- c. **Block Makers:** Each day that blocks are made, record the approximate weight of each newly molded block, measured to the nearest 2 pounds.
- d. **Specialty Products Subject To Section 301.2(a):** An EPS-block facility owner and/or operator making specialty products under Section 301.2(a) of this rule shall:
 - (1) Maintain a log indicating when the facility is operating under the specialty-products alternative operating scenario; and
 - (2) Each month calculate the percent of total EPS raw material used during the current calendar year that specialty products, made under Section 301.2(a) of this rule, constitute; enter the calculations and results in the log.

502.2 Lists Of Non-EPS VOC-Containing Materials: Non-EPS materials may include, but are not limited to, the following categories: inks, coatings, adhesives, reducers, thinners, solvents, cleaning materials, additives, spray-cans, sprayed lubricants, and any other VOC-containing materials that are not EPS.

- a. An owner and/or operator shall maintain a current list of non-EPS materials, containing VOC, used at the facility. A complete and ordered assemblage of the required data meets the requirements for a list.
- b. An owner and/or operator shall express VOC content of non-EPS material in one of the following three forms:
 - (1) Pounds VOC per gallon (or grams VOC per liter), or

- (2) Fractional pounds of VOC per lb. material (or grams per kilogram), or
- (3) The percent VOC by weight along with the specific gravity or density (two numbers are required for each entry).

c. By the end of the following month, an owner and/or operator shall record the amount and type of each non-EPS material, containing VOC that was used during each month.

502.3 Records Of ECS Operation And Monitoring: On a daily basis, the owner and/or operator of a facility that operates an ECS to comply with this rule shall record key system operating parameters such as temperature, flow rate, pressure, and/or VOC-concentration, etc.

503 TEST PROCEDURES: An owner and/or operator of an EPS facility will be in violation of this rule if the VOC emissions, measured by any of the referenced test methods specified in this Section 503 of this rule and listed in Section 504 of this rule, do not comply with the applicable standards included by Section 301 through Section 305 of this rule.

503.1 Each year between June 1 and August 31, an owner and/or operator shall conduct an annual performance test on each ECS used to meet a standard in this Rule 358, using the test methods designated by Section 503.2 through Section 503.7 of this rule and incorporated by reference in Section 504 of this rule.

503.2 An owner and/or operator shall perform the measurement of airflow and gas flow into and out of the ECS by performing EPA Method 2, referenced in Section 504.1 of this rule.

503.3 An owner and/or operator shall determine the concentration of methane and ethane emissions by performing EPA Method 18, referenced in Section 504.2 of this rule or Method 25 (and its submethods) referenced in Section 504.3 of this rule.

503.4 An owner and/or operator shall determine the control efficiency of the VOC control device (abatement subsystem) of an ECS by performing EPA Method 25 (and its submethods), referenced in Section 504.3 of this rule.

503.5 An owner and/or operator shall determine the efficiency of a capture system according to both EPA Method 204 (and its submethods) referenced in Section 504.4 of this rule and the EPA guidance document referenced in Section 504.7 of this rule.

503.6 An owner and/or operator shall determine the concentration of total volatile organic carbon content in polymeric materials by performing Bay Area Quality Management District (BAAQMD) Method 45 as referenced in

Section 504.5 of this rule or by performing South Coast Air Quality Management District (SCAQMD) Method 306-91, 1993 revision, as referenced in Section 504.6 of this rule.

503.7 Determination Of ECS Effectiveness: ECS effectiveness shall be determined from the results of a testing protocol based on mass balance, calculated according to the following formulas:

$$\% \text{ CAPTURE} = \frac{\text{VOC}_{\text{ECS}}}{\text{VOC}_{\text{I}} - \text{VOC}_{\text{P}}} \times 100$$

$$\% \text{ CONTROL} = \frac{\text{VOC}_{\text{ECS}} - \text{VOC}_{\text{St}}}{\text{VOC}_{\text{ECS}}} \times 100$$

$$\% \text{ EMITTED} = \frac{\text{VOC}_{\text{I}} + \text{VOC}_{\text{St}} - \text{VOC}_{\text{P}} - \text{VOC}_{\text{ECS}}}{\text{VOC}_{\text{I}} - \text{VOC}_{\text{P}}} \times 100$$

$$\% \text{ OVERALL (Capture+Control)} = \frac{\text{VOC}_{\text{ECS}}}{\text{VOC}_{\text{I}} - \text{VOC}_{\text{P}}} \times \frac{\text{VOC}_{\text{ECS}} - \text{VOC}_{\text{St}}}{\text{VOC}_{\text{ECS}}} \times 100$$

Where:

VOC_I is the VOC input in the form of the VOC content of a weighed mass of raw beads.

VOC_P is the VOC content of the products made from the weighed raw beads.

VOC_{ECS} is the VOC measured in the air entering the ECS.

VOC_{St} is the VOC remaining in the gas stream(s) emerging from the ECS during production.

503.8 Determination Of Product Density: The ASTM Method C303-02 referenced in Section 504.8 of this rule shall be used to determine the density of EPS foam blocks and block-derivatives.

503.9 Conforming Testing To Desired Production Characteristics: The owner and/or operator of an EPS facility must, through performance testing, demonstrate compliance with each alternative operating scenario chosen.

504 TEST METHODS ADOPTED BY REFERENCE: The EPA test methods as they exist in the Code of Federal Regulations (C.F.R.) on July 1, 2004, are adopted by reference. These adoptions by reference include no future editions or amendments. Copies of test methods referenced in this Section are available at the Maricopa County Environmental Services Department, 1001 North Central Avenue, Phoenix, AZ, 85004-1942. The other test methods from Bay Area Air Quality Management District and South Coast Air Quality Management District

listed herein are also adopted by reference, each having paired with it a specific date that identifies the particular version/revision of the method that is adopted by reference.

- 504.1** EPA Reference Method 2 ("Determination Of Stack Gas Velocity And Volumetric Flow Rate"), 2a ("Direct Measurement Of Gas Volume Through Pipes And Small Ducts"), 2c ("Determination Of Stack Gas Velocity And Volumetric Flow Rate In Small Stacks Or Ducts"), and 2d ("Measurement Of Gas Volumetric Flow Rates In Small Pipes And Ducts"), (40 C.F.R. 60, Appendix A).
- 504.2** EPA Reference Method 18 ("Measurement Of Gaseous Organic Compound Emissions By Gas Chromatography"), (40 C.F.R. 60, Appendix A).
- 504.3** EPA Reference Method 25 ("Determination Of Total Gaseous Nonmethane Organic Emissions As Carbon"), (40 C.F.R. 60, Appendix A).
- 504.4** EPA Reference Method 204 ("Criteria for Determining Capture Efficiency"), 204A, 204B, 204C, 204D ("Volatile Organic Compounds Emissions In Uncaptured Stream From Temporary Total Enclosure"), 204E ("Volatile Organic Compounds Emissions In Un-Captured Stream From Building Enclosure"), and 204 F ("Volatile Organic Compounds Content In Liquid Input Stream {Distillation Approach}") (40 C.F.R. 51, Appendix M).
- 504.5** BAAQMD Method 45 ("Determination Of Butanes And Pentanes In Polymeric Materials"), (BAAQMD Manual Of Procedures, Volume III, January 19, 2000).
- 504.6** SCAQMD Method 306-91, February 1993 revision ("Analysis Of Pentanes In Expandable Styrene Polymers"), Applied Science & Technology Division – Laboratory Services Branch.
- 504.7** EPA Guidance Document, "Guidelines For Determining Capture Efficiency", January 9, 1995.
- 504.8** American Society Of Testing Materials, ASTM Method C303-02 (Standard Test Method For Dimensions And Density Of Preformed Block And Broad-Type Thermal Insulation), 2002.

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION V – AIR QUALITY STANDARDS AND AREA CLASSIFICATION**

**RULE 510
AIR QUALITY STANDARDS**

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION V – AIR QUALITY STANDARDS AND AREA CLASSIFICATION**

**RULE 510
AIR QUALITY STANDARDS**

SECTION 100 – GENERAL

- 101 PURPOSE:** To establish ambient air quality standards which are necessary to protect human health and public welfare.
- 102 AVAILABILITY OF INFORMATION:** Copies of materials referenced in Sections 310, 401.1, and 401.2 of this rule are available electronically at www.ecfr.gov; or at the Maricopa County Air Quality Department.

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County Air Pollution Control rules, the definitions in this rule take precedence.

- 201 PRIMARY AMBIENT AIR QUALITY STANDARDS:** The ambient air quality standards which define levels of air quality necessary, with an adequate margin of safety, to protect the public health, as determined by the Arizona Department of Environmental Quality and United States Environmental Protection Agency, and specified in this rule.
- 202 SECONDARY AMBIENT AIR QUALITY STANDARDS:** The ambient air quality standards which define levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant, as determined by the Arizona Department of Environmental Quality and United States Environmental Protection Agency, and specified in this rule.

SECTION 300 – STANDARDS: The following are established as the primary and secondary ambient air quality standards for Maricopa County:

- 301 PARTICULATE MATTER - 2.5 MICRONS OR LESS (PM_{2.5}):**
- 301.1 Primary Ambient Air Quality Standards for PM_{2.5}:** The primary ambient air quality standards for PM_{2.5} shall be 12.0 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) annual arithmetic mean concentration and 35 $\mu\text{g}/\text{m}^3$ 24-hour average concentration. The primary annual PM_{2.5} standard shall be considered attained when the annual arithmetic mean concentration, as determined in accordance with 40 CFR 50, Appendix N, is less than or equal to 12.0 $\mu\text{g}/\text{m}^3$. The primary 24-hour PM_{2.5} standard shall be considered attained when the 98th percentile 24-hour concentration, as determined in accordance with 40 CFR 50, Appendix N, is less than or equal to 35 $\mu\text{g}/\text{m}^3$.

301.2 Secondary Ambient Air Quality Standards for PM_{2.5}: The secondary ambient air quality standard for PM_{2.5} shall be 15.0 µg/m³ annual arithmetic mean concentration and 35 µg/m³ 24-hour average concentration. The secondary annual standard shall be considered attained when the annual arithmetic mean concentration, as determined in accordance with 40 CFR 50, Appendix N, is less than or equal to 15.0 µg/m³. The secondary 24-hour PM_{2.5} standard shall be considered attained when the 98th percentile 24-hour concentration, as determined in accordance with 40 CFR 50, Appendix N, is less than or equal to 35 µg/m³.

302 PARTICULATE MATTER - 10 MICRONS OR LESS (PM₁₀):

Primary and Secondary Ambient Air Quality Standard for PM₁₀: The primary and secondary ambient air quality standards for PM₁₀ shall be 150 µg/m³ 24-hour average concentration. The standards shall be considered attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³, as determined in accordance with 40 CFR 50, Appendix K, is less than or equal to one.

303 SULFUR OXIDES (SULFUR DIOXIDE):

303.1 Primary Ambient Air Quality Standards for Sulfur Oxides: The primary ambient air quality standard for sulfur oxides (measured as sulfur dioxide) shall be 75 parts per billion (ppb) 1-hour average concentration. The standard shall be considered attained when the three-year average of the annual 99th percentile of the daily maximum 1-hour average concentrations is less than or equal to 75 ppb, as determined in accordance with 40 CFR 50, Appendix T.

303.2 Secondary Ambient Air Quality Standard for Sulfur Oxides: The secondary ambient air quality standard for sulfur oxides (measured as sulfur dioxide) shall be 0.5 ppm (1300 g/m³) 3-hour average. The standard shall be considered attained when the second-highest valid 3-hour average concentration, as determined in accordance with 40 CFR 50.5, is less than 0.5 ppm.

304 OZONE:

Primary and Secondary Ambient Air Quality Standards for Ozone Eight-hour Average Concentration: The primary and secondary ambient air quality standards for ozone shall be 0.070 ppm, daily maximum 8-hour average. The standards shall be considered attained at an ambient air quality monitoring site when the three-year average of the annual fourth-highest daily maximum eight-hour average ozone concentration, as determined in accordance with 40 CFR 50, Appendix U, is less than or equal to 0.070 ppm.

305 CARBON MONOXIDE:

305.1 Primary Ambient Air Quality Standards for Carbon Monoxide: The primary ambient air quality standards for carbon monoxide shall be:

- a. **One-hour Average Concentration:** 35 ppm (40 mg/m³). This maximum one-hour average concentration, as determined in accordance with 40 CFR 50.8, shall not be exceeded more than once per year at any one location.

- b. **Eight-hour Average Concentration:** 9 ppm (10 mg/m³). This maximum eight-hour average concentration, as determined in accordance with 40 CFR 50.8, shall not be exceeded more than once per year at any one location.

306 NITROGEN OXIDES (NITROGEN DIOXIDE):

306.1 Primary Ambient Air Quality Standards for Nitrogen Oxides: The primary ambient air quality standards for oxides of nitrogen, measured in the ambient air as nitrogen dioxide, are:

- a. **Annual Average Concentration:** 53 ppb. The annual primary standard is met when the annual average concentration in a calendar year is less than or equal to 53 ppb, as determined in accordance with 40 CFR 50, Appendix S.
- b. **One Hour Average Concentration:** 100 ppb. The one-hour primary standard is met when the three-year average of the annual 98th percentile of the daily maximum one-hour average concentration is less than or equal to 100 ppb, as determined in accordance with 40 CFR 50, Appendix S.

306.2 Secondary Ambient Air Quality Standards for Nitrogen Oxides: The secondary ambient air quality standard for oxides of nitrogen, measured as nitrogen dioxide, is 0.053 parts per million (ppm) (100 µg/m³), annual arithmetic mean. The standard shall be considered attained when the annual arithmetic mean concentration in a calendar year, as determined in accordance with 40 CFR 50.11, is less than or equal to 0.053 ppm

307 LEAD:

Primary and Secondary Ambient Air Quality Standards for Lead: The primary and secondary ambient air quality standards for lead and its compounds shall be 0.15 µg/m³. The standards shall be considered attained when the maximum arithmetic three-month mean concentration for a 3-year period, as determined in accordance with 40 CFR 50, Appendix R, is less than or equal to 0.15 µg/m³.

308 POLLUTANT CONCENTRATION DETERMINATIONS: Pollutant concentrations shall be measured by the following methods:

308.1 Reference Methods:

- a. The concentration of PM_{2.5} in the ambient air shall be measured by a reference method based on 40 CFR 50, Appendix L.
- b. The concentration of PM₁₀ in the ambient air shall be measured by a reference method based on 40 CFR 50, Appendix J.
- c. The concentration of sulfur oxides (measured as sulfur dioxide) in the ambient air shall be measured by a reference method based on 40 CFR 50, Appendix A-1 or A-2.
- d. The concentration of ozone in the ambient air shall be measured in accordance with 40 CFR 50, Appendix D.
- e. The concentration of carbon monoxide in the ambient air shall be measured in accordance with 40 CFR 50, Appendix C.

- f. The concentration of nitrogen dioxide in the ambient air shall be measured in accordance with 40 CFR 50, Appendix F.
- g. The concentration of lead in the ambient air shall be measured in accordance with 40 CFR 50, Appendix G.

308.2 Equivalent Methods and Approved Regional Methods: Pollutant concentrations may also be measured by:

- a. An equivalent method designated by the Administrator in accordance with 40 CFR 53; or
- b. An approved regional method of measurement that, though not designated as a reference or equivalent method, has been approved for use by the Administrator acting pursuant to 40 CFR 58, Appendix C. Such method shall be subject to any restrictions placed on its use by the Administrator.

308.3 Method Withdrawal: The cancellation or supersession of designation of a reference or equivalent method by the Administrator acting pursuant to 40 CFR 53.11 or 53.16 shall also amount to a withdrawal of the authorization for use of that method for purposes of this rule.

309 ADDITIONAL REQUIREMENTS:

309.1 Quality assurance, monitor siting, and sample probe installation procedures shall be in accordance with the procedures described in the Appendices to 40 CFR 58.

309.2 Unless otherwise specified, interpretation of all ambient air quality standards contained in this rule shall be in accordance with 40 CFR 50.

309.3 The evaluation of air quality data in terms of procedure, methodology, and concept is to be consistent with methods described in 40 CFR 50.

310 INCORPORATIONS BY REFERENCE: The CFR references listed below are incorporated by reference in Appendix G of these rules:

310.1 40 CFR 50 – National Primary and Secondary Ambient Air Quality Standards;

310.2 40 CFR 53 – Ambient Air Monitoring Reference and Equivalent Methods; and

310.3 40 CFR 58 – Ambient Air Quality Surveillance.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 REPORTING OF AMBIENT AIR QUALITY MONITORING DATA:

401.1 Annual Air Quality Monitoring Network Plan: The Control Officer shall submit to the Administrator an annual monitoring network plan that at a minimum meets the requirements of 40 CFR 58.10. The annual report will be made available to the public at the Maricopa County Air Quality Department at least 30 days prior to submission to the Administrator.

401.2 Daily Air Quality Index (AQI) Report: The Control Officer shall report to the public on a daily basis an AQI that at a minimum meets the requirements of 40 CFR

58.50 and 40 CFR 58, Appendix G. The AQI will also be made available to the public at the Maricopa County Air Quality Department.

SECTION 500 – MONITORING AND RECORDS (NOT APPLICABLE)

REGULATION VI - EMERGENCY EPISODES

**RULE 600
EMERGENCY EPISODES**

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MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS

REGULATION VI - EMERGENCY EPISODES

RULE 600
EMERGENCY EPISODES

SECTION 100 - GENERAL

101 PURPOSE: To establish criteria used to determine air pollution emergency episodes and the appropriate control actions. This rule describes control and advisory procedures reached at each of the three episode levels.

102 EPISODE PROCEDURES GUIDELINES: Guidelines for the procedures and communication steps to be followed during an air pollution episode are presented in Appendices D and E of the Arizona Air Pollution Control Implementation Plan.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definition shall apply:

201 EMERGENCY EPISODE PLAN - A system designed to reduce the levels of air contaminants which may reach or have reached the level which may be harmful to health, and to protect that portion of the population at risk.

SECTION 300 - STANDARDS

301 EPISODE LEVEL CRITERIA: An air pollution alert, warning or emergency shall be declared when the following air pollutant concentrations are exceeded at any monitoring site and when meteorological conditions indicate that there will be a recurrence of those concentrations for the same pollutant(s) during the subsequent 24-hour period:

EPISODE LEVEL CRITERIA

Pollutant	Averaging Time	Alert	Warning	Emergency
Sulfur Dioxide (ug/m ³)	24-hr	800	1,600	2,100

Pollutant	Averaging Time	Alert	Warning	Emergency
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Small Particulates (PM ₁₀) (ug/m ³)	24-hr	350	420	500
Total Particulates (ug/m ³)	24-hr	375	625	875
Sulfur Dioxide and Particulates Combined (ug/m ³)	24-hr	6.5x10 ⁴	26.1x10 ⁴	39.3x10 ⁴
Ozone (ug/m ³)	1-hr	400 (0.2ppm)	800 (0.4ppm)	1,000 (0.5ppm)
Nitrogen Dioxide (ug/m ³)	1-hr	1,130	2,260	3,000
	24-hr	282	565	750
Carbon Monoxide mg/m ³	8-hr	17 (15 ppm)	34 (20 ppm)	46 (40 ppm)

302 CONTROL ACTIONS: When an air pollution alert, warning or emergency has been declared, one or more of the control actions as applicable to the source emitting the pollutant of concern shall be implemented in the affected area.

302.1 Control Actions - Air Pollution Alert

- a. All permits to burn shall be suspended until further notice. The forest service shall be notified to postpone slash burning in affected areas.
- b. Incineration shall be limited to the hours of 12 noon to 4:00 p.m.
- c. Those manufacturing facilities with prearranged emission reduction plans as noted in the State Air Pollution Control Implementation Plan shall be notified to initiate alert stage control actions. Other sources shall be notified to minimize emissions by curtailing or deferring operations not on a required schedule and by maximizing the collection efficiency of control equipment. Emissions from batch operations shall be limited to the hours of 12 noon to 4:00 p.m.
- d. The public shall be requested to voluntarily eliminate all unnecessary usage of motor vehicles.

302.2 Control Actions - Air Pollution Warning

- a. Burning of refuse, vegetation, trade wastes, and debris shall not be permitted by any person.
- b. Use of incinerators shall be prohibited.
- c. Those manufacturing facilities with prearranged emission reduction plans as noted in the Arizona Air Pollution Control Implementation Plan shall be notified to initiate warning stage control actions. Other sources shall be notified to initiate a 40 percent or greater reduction in emissions by curtailment or cessation of operations. All processing industries shall be requested to effect a maximum reduction in heat load demands.
- d. If possible, power plant generating loads shall be transferred outside the affected area. Power plant production shall be reduced by purchase of available energy from neighboring utilities.
- e. Highway construction and paving activities shall be halted. All soil removal or grading operations at other construction sites shall be postponed.
- f. Dust producing crop preparation and cultivation activities shall be postponed. A maximum reduction in agricultural processing and handling operations shall be effected.
- g. The public shall be requested to voluntarily reduce motor vehicle usage by use of carpools and other means of transportation and elimination of unnecessary operation.

302.3 Control Actions - Air Pollution Emergency

- a. Those manufacturing facilities with prearranged emission reduction plans as noted in the Arizona Air Pollution Control Implementation Plan shall be notified to initiate emergency stage control actions. Other manufacturing establishments shall cease operations as directed by the Governor.
- b. As directed by the Governor, all commercial, governmental, and institutional establishments, except those vital for public safety and welfare and enforcement of the emergency episode control actions, shall be closed.

- c. Generating loads at power plants shall be reduced further, resulting from industrial and commercial cutbacks.
- d. All construction shall be halted as directed by the Governor except that which must proceed to avoid emergent physical harm.
- e. As directed by the Governor, use of motor vehicles shall be prohibited except in emergencies with approval of the local police.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 EPISODE TERMINATION: Once declared, any status reached by application of these criteria shall remain in effect until the criteria for that level are no longer met. At such time, the next lower status will be assumed.

402 COORDINATION WITH THE STATE DEPARTMENT OF ENVIRONMENTAL QUALITY: When the conditions justifying the proclamation of an air pollution alert, warning, or emergency are determined to exist in any place in Maricopa County, the Control Officer shall be guided by the following criteria as established by state regulation R18-2-219, and cooperate directly with the State Director, Arizona Department of Environmental Quality in all pertinent areas of control and surveillance.

402.1 If the average wind speed for 24 hours is greater than 9.0 miles per hour, the criteria levels for particulates and sulfur dioxide and particulates combined shall not apply and no source control actions shall be taken.

402.2 If, after an alert or warning episode level has been declared, and air pollution concentrations and meteorological conditions do not deteriorate further, or improve after 48 hours and control actions have been taken, the next higher episode shall be declared and its associated control actions implemented.

Adopted 06/16/99
Revised 02/16/00
Revised 04/07/04
Revised 03/26/08

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS

APPENDIX C
FUGITIVE DUST TEST METHODS

1. [RESERVED]

2. TEST METHODS FOR STABILIZATION

2.1 For Unpaved Roads and Unpaved Parking Lots:

2.1.1 Opacity Test Method: The purpose of this test method is to estimate the percent opacity of fugitive dust plumes caused by vehicle movement on unpaved roads and unpaved parking lots. This method can only be conducted by an individual who has received certification as a qualified observer. Qualification and testing requirements can be found in Section 3.4 of this appendix.

- a. **Step 1:** Stand at least 16.5 feet from the fugitive dust source in order to provide a clear view of the emissions with the sun oriented in the 140° sector to the back. Following the above requirements, make opacity observations so that the line of vision is approximately perpendicular to the dust plume and wind direction. If multiple plumes are involved, do not include more than one plume in the line of sight at one time.
- b. **Step 2:** Record the fugitive dust source location, source type, method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position relative to the fugitive dust source. Also record the time, estimated distance to the fugitive dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position to the fugitive dust source, and color of the plume and type of background on the visible emission observation from both when opacity readings are initiated and completed.
- c. **Step 3:** Make opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of vision. Make opacity observations approximately 1 meter above the surface from which the plume is generated. Note that the observation is to be made at only one visual point upon generation of a plume, as opposed to visually tracking the

entire length of a dust plume as it is created along a surface. Make two observations per vehicle, beginning with the first reading at zero seconds and the second reading at five seconds. The zero-second observation should begin immediately after a plume has been created above the surface involved. Do not look continuously at the plume but, instead, observe the plume briefly at zero seconds and then again at five seconds.

- d. **Step 4:** Record the opacity observations to the nearest 5% on an observational record sheet. Each momentary observation recorded represents the average opacity of emissions for a 5-second period. While it is not required by the test method, EPA recommends that the observer estimate the size of vehicles which generate dust plumes for which readings are taken (e.g. mid-size passenger car or heavy-duty truck) and the approximate speeds the vehicles are traveling when readings are taken.
- e. **Step 5:** Repeat Step 3 (Section 2.1.1(c) of this appendix) and Step 4 (Section 2.1.1(d) of this appendix) until you have recorded a total of 12 consecutive opacity readings. This will occur once six vehicles have driven on the source in your line of observation for which you are able to take proper readings. The 12 consecutive readings must be taken within the same period of observation but must not exceed 1 hour. Observations immediately preceding and following interrupted observations can be considered consecutive.
- f. **Step 6:** Average the 12 opacity readings together. If the average opacity reading equals 20% or lower, the source is in compliance

2.1.2 Silt Content Test Method: The purpose of this test method is to estimate the silt content of the trafficked parts of unpaved roads and unpaved parking lots. The higher the silt content, the more fine dust particles that are released when cars and trucks drive on unpaved roads and unpaved parking lots.

a. Equipment:

- (1) A set of sieves with the following openings: 4 millimeters (mm), 2 mm, 1 mm, 0.5 mm and 0.25 mm (or a set of standard/commonly available sieves), a lid, and collector pan.
- (2) A small whisk broom or paintbrush with stiff bristles and dustpan 1 ft. in width. (The broom/brush should preferably have one, thin row of bristles no longer than 1.5 inches in length).
- (3) A spatula without holes.
- (4) A small scale with half-ounce increments (e.g., postal/package scale).

- (5) A shallow, lightweight container (e.g., plastic storage container).
- (6) A sturdy cardboard box or other rigid object with a level surface.
- (7) A basic calculator.
- (8) Cloth gloves (optional for handling metal sieves on hot, sunny days).
- (9) Sealable plastic bags (if sending samples to a laboratory).
- (10) A pencil/pen and paper.

b. Step 1: Look for a routinely traveled surface, as evidenced by tire tracks. (Only collect samples from surfaces that are not damp due to precipitation or dew. This statement is not meant to be a standard in itself for dampness where watering is being used as a control measure. It is only intended to ensure that surface testing is done in a representative manner.) Use caution when taking samples to ensure personal safety with respect to passing vehicles. Gently press the edge of a dustpan (1 foot in width) into the surface four times to mark an area that is 1 square foot. Collect a sample of loose surface material using a whiskbroom or brush and slowly sweep the material into the dustpan, minimizing escape of dust particles. Use a spatula to lift heavier elements such as gravel. Only collect dirt/gravel to an approximate depth of 3/8 inch or 1 cm in the 1 square foot area. If you reach a hard, underlying subsurface that is < 3/8 inch in depth, do not continue collecting the sample by digging into the hard surface. In other words, you are only collecting a surface sample of loose material down to 1 cm. In order to confirm that samples are collected to 1 cm in depth, a wooden dowel or other similar narrow object at least one foot in length can be laid horizontally across the survey area while a metric ruler is held perpendicular to the dowel.

At this point, you can choose to place the sample collected into a plastic bag or container and take it to an independent laboratory for silt content analysis. A reference to the procedure the laboratory is required to follow is at the end of this section.

- c. Step 2:** Place a scale on a level surface. Place a lightweight container on the scale. Zero the scale with the weight of the empty container on it. Transfer the entire sample collected in the dustpan to the container, minimizing escape of dust particles. Weigh the sample and record its weight.
- d. Step 3:** Stack a set of sieves in order according to the size openings specified above, beginning with the largest size opening (4 mm) at the top. Place a collector pan underneath the bottom (0.25 mm) sieve.

- e. **Step 4:** Carefully pour the sample into the sieve stack, minimizing escape of dust particles by slowly brushing material into the stack with a whiskbroom or brush. (On windy days, use the trunk or door of a car as a wind barricade.) Cover the stack with a lid. Lift up the sieve stack and shake it vigorously up, down and sideways for at least 1 minute.
- f. **Step 5:** Remove the lid from the stack and disassemble each sieve separately, beginning with the top sieve. As you remove each sieve, examine it to make sure that all of the material has been sifted to the finest sieve through which it can pass (e.g., material in each sieve [besides the top sieve that captures a range of larger elements] should look the same size). If this is not the case, re-stack the sieves and collector pan, cover the stack with the lid, and shake it again for at least 1 minute. (You only need to reassemble the sieve(s) that contain material, which requires further sifting.)
- g. **Step 6:** After disassembling the sieves and collector pan, slowly sweep the material from the collector pan into the empty container originally used to collect and weigh the entire sample. Take care to minimize escape of dust particles. You do not need to do anything with material captured in the sieves; only the collector pan. Weigh the container with the material from the collector pan and record its weight.
- h. **Step 7:** If the source is an unpaved road, multiply the resulting weight by 0.38. If the source is an unpaved parking lot, multiply the resulting weight by 0.55. The resulting number is the estimated silt loading. Then, divide by the total weight of the sample you recorded earlier in Step 2 (Section 2.1.2(c) of this appendix) and multiply by 100 to estimate the percent silt content.
- i. **Step 8:** Select another two routinely traveled portions of the unpaved road or unpaved parking lot and repeat this test method. Once you have calculated the silt loading and percent silt content of the 3 samples collected, average your results together.
- j. **Step 9:** Examine results. If the average silt loading is less than 0.33 oz/ft², the surface is STABLE. If the average silt loading is greater than or equal to 0.33 oz/ft², then proceed to examine the average percent silt content. If the source is an unpaved road and the average percent silt content is 6% or less, the surface is STABLE. If the source is an unpaved parking lot and the average percent silt content is 8% or less, the surface is STABLE. If your field test results are within 2% of the standard (for example, 4%–8% silt content on an unpaved road), it is recommended that you collect 3 additional samples from the source according to Step 1 (Section 2.1.2(b) of this appendix) and take them to an independent laboratory for silt content analysis.

k. Independent Laboratory Analysis: You may choose to collect 3 samples from the source, according to Step 1 (Section 2.1.2(b) of this appendix), and send them to an independent laboratory for silt content analysis rather than conduct the sieve field procedure. If so, the test method the laboratory is required to use is: U.S. Environmental Protection Agency (1995), "Procedures for Laboratory Analysis of Surface/Bulk Dust Loading Samples", (AP-42 Fifth Edition, Volume I, Appendix C.2.3 "Silt Analysis"), Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina.

2.2 Stabilization Limitations for Open Areas and Vacant Lots: The test methods described in Section 2.3 through Section 2.7 of this appendix shall be used to determine whether an open area or a vacant lot has a stabilized surface. Should a disturbed open area or vacant lot contain more than one type of disturbance, soil, vegetation, or other characteristics, which are visibly distinguishable, test each representative surface separately for stability, in an area that represents a random portion of the overall disturbed conditions of the site, according to the appropriate test methods in Section 2.3 through Section 2.7 of this appendix.

2.3 Soil Crust Determination (the Drop Ball Test):

2.3.1 Drop a steel ball with a diameter of 15.9 millimeters (0.625 inches) and a mass ranging from 16-17 grams (0.56-0.60 ounce) from a distance of one foot directly above (at a 90° angle perpendicular to) the soil surface. If blowsand is present, clear the blowsand from the surfaces on which the drop ball test is conducted. Blowsand is defined as thin deposits of loose uncombined grains covering less than 50% of a vacant lot or project site that have not originated from the representative surface being tested. If material covers a visible crust, which is not blowsand, apply the test method in Section 2.4: Determination of Threshold Friction Velocity (TFV) of this appendix to the loose material to determine whether the surface is stabilized.

2.3.2 A sufficient crust is defined under the following conditions: once a ball has been dropped according to Section 2.3.1 of this appendix, the ball does not sink into the surface, so that it is partially or fully surrounded by loose grains and, upon removing the ball, the surface upon which it fell has not been pulverized, so that loose grains are visible.

2.3.3 Randomly select each representative disturbed surface for the drop ball test by using a blind "over the shoulder" toss of a throwable object (e.g., a metal weight with survey tape attached). Using the point of fall as the lower left-hand corner, measure a one-foot square area. Drop the ball three times within the one-foot by one-foot square survey area, using a consistent pattern across the survey area. The survey area shall be considered to have passed the drop ball test if at least two out of the three times that the ball was dropped, the results met the criteria in Section 2.3.2 of this appendix. Select at least two other

survey areas that represent a random portion of the overall disturbed conditions of the site, and repeat this procedure. If the results meet the criteria of Section 2.3.2 of this appendix for all of the survey areas tested, then the site shall be considered to have passed the drop ball test and shall be considered sufficiently crusted.

2.3.4 At any given site, the existence of a sufficient crust covering one portion of the site may not represent the existence or protectiveness of a crust on another portion of the site. Repeat the drop ball test as often as necessary on each portion of the overall conditions of the site using the random selection method set forth in Section 2.3.3 of this appendix for an accurate assessment.

2.4 Determination of Threshold Friction Velocity (TFV): For disturbed surface areas that are not crusted or vegetated, determine threshold friction velocity (TFV) according to the following sieving field procedure (based on a 1952 laboratory procedure published by W. S. Chepil).

2.4.1 Obtain and stack a set of sieves with the following openings: 4 millimeters (mm), 2 mm, 1 mm, 0.5 mm, and 0.25 mm or obtain and stack a set of standard/commonly available sieves. Place the sieves in order according to size openings, beginning with the largest size opening at the top. Place a collector pan underneath the bottom (0.25 mm) sieve. Collect a sample of loose surface material from an area at least 30 cm by 30 cm in size to a depth of approximately 1 cm using a brush and dustpan or other similar device. Only collect soil samples from dry surfaces (i.e., when the surface is not damp to the touch). Remove any rocks larger than 1 cm in diameter from the sample. Pour the sample into the top sieve (4-mm opening) and cover the sieve/collector pan unit with a lid. Minimize escape of particles into the air when transferring surface soil into the sieve/collector pan unit. Move the covered sieve/collector pan unit by hand using a broad, circular arm motion in the horizontal plane. Complete twenty circular arm movements, ten clockwise and ten counter-clockwise, at a speed just necessary to achieve some relative horizontal motion between the sieves and the particles. Remove the lid from the sieve/collector pan unit and disassemble each sieve separately beginning with the largest sieve. As each sieve is removed, examine it for loose particles. If loose particles have not been sifted to the finest sieve through which they can pass, reassemble and cover the sieve/collector pan unit and gently rotate it an additional ten times. After disassembling the sieve/collector pan unit, slightly tilt and gently tap each sieve and the collector pan so that material aligns along one side. In doing so, minimize escape of particles into the air. Line up the sieves and collector pan in a row and visibly inspect the relative quantities of catch in order to determine which sieve (or whether the collector pan) contains the greatest volume of material. If a visual determination of relative volumes of catch among sieves is difficult, use a graduated cylinder to measure the volume. Estimate TFV for the sieve catch with the greatest volume using Table 1 of this appendix, which provides a correlation between sieve opening size and TFV.

Table 1. Determination of Threshold Friction Velocity

Tyler Sieve No.	ASTM 11 Sieve No.	Opening (mm)	TFV(cm/s)
5	5	4	135
9	10	2	100
16	18	1	76
32	35	0.5	58
60	60	0.25	43
Collector Pan	—	—	30

- 2.4.2** Collect at least three soil samples which represent random portions of the overall conditions of the site, repeat the above TFV test method for each sample and average the resulting TFVs together to determine the TFV uncorrected for non-erodible elements. Non-erodible elements are distinct elements, in the random portion of the overall conditions of the site, that are larger than 1 cm in diameter, remain firmly in place during a wind episode, and inhibit soil loss by consuming part of the shear stress of the wind. Non-erodible elements include stones and bulk surface material but do not include flat or standing vegetation. For surfaces with non-erodible elements, determine corrections to the TFV by identifying the fraction of the survey area, as viewed from directly overhead, that is occupied by non-erodible elements using the following procedure. For a more detailed description of this procedure, see Section 2.7 (Test Methods for Stabilization-Rock Test Method) of this appendix. Select a survey area of 1 meter by 1 meter that represents a random portion of the overall conditions of the site. Where many non-erodible elements lie within the survey area, separate the non-erodible elements into groups according to size. For each group, calculate the overhead area for the non-erodible elements according to the following equations:

$$\text{Average Length} \times \text{Average Width} = \text{Average Dimensions} \quad \text{Eq. 1}$$

$$\text{Average Dimensions} \times \text{Number of Elements} = \text{Overhead Area} \quad \text{Eq. 2}$$

$$\text{Overhead Area of Group 1} + \text{Overhead Area of Group 2 (etc.)} = \text{Total Overhead Area} \quad \text{Eq. 3}$$

$$\text{Total Overhead Area} \div 2 = \text{Total Frontal Area} \quad \text{Eq. 4}$$

$$(\text{Total Frontal Area} \div \text{Survey Area}) \times 100 = \text{Percent Cover of Non-Erodible Elements} \quad \text{Eq. 5}$$

Note: Ensure consistent units of measurement (e.g., square meters or square inches) when calculating percent cover.

Repeat this procedure on an additional two distinct survey areas that represent a random portion of the overall conditions of the site and average the results. Use Table 2 of this appendix to identify the correction factor for the percent cover of non-erodible elements. Multiply the TFV by the corresponding correction factor to calculate the TFV corrected for non-erodible elements.

Table 2. Correction Factors for Threshold Friction Velocity

Percent Cover of Non-Erodible Elements Factor	Correction Factor
Greater than or equal to 10%	5
Greater than or equal to 5% and less than 10%	3
Less than 5% and greater than or equal to 1%	2
Less than 1%	None

2.5 Determination of Flat Vegetative Cover: Flat vegetation includes attached (rooted) vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind. Flat vegetation, which is dead but firmly attached, shall be considered equally protective as live vegetation. Stones or other aggregate larger than 1 centimeter in diameter shall be considered protective cover in the course of conducting the line transect test method. Where flat vegetation exists, conduct the following line transect test method.

2.5.1 Line Transect Test Method: Stretch a 100-foot measuring tape across a survey area that represents a random portion of the overall conditions of the site. Firmly anchor both ends of the measuring tape into the surface using a tool such as a screwdriver, with the tape stretched taut and close to the soil surface. If vegetation exists in regular rows, place the tape diagonally (at approximately a 45° angle) away from a parallel or perpendicular position to the vegetated rows. Pinpoint an area the size of a 3/32 inch diameter brazing rod or wooden dowel centered above each 1-foot interval mark along one edge of the tape. Count the number of times that flat vegetation lies directly underneath the pinpointed area at 1-foot intervals. Consistently observe the underlying surface from a 90° angle directly above each pinpoint on one side of the tape. Do not count the underlying surface as vegetated if any portion of the pinpoint extends beyond the edge of the vegetation underneath in any direction. If clumps of vegetation or vegetative debris lie underneath the pinpointed area, count the surface as vegetated, unless bare soil is visible directly below the pinpointed area. When 100 observations have been made, add together the number of times a surface was counted as vegetated. This total represents the percent of flat vegetation cover (e.g., if 35 positive counts were made, then vegetation cover is 35%). If the survey area that represents a random portion of the overall conditions of the site is too small for 100 observations, make as many observations as possible. Then multiply the count of vegetated surface areas by the appropriate conversion factor to obtain percent cover. For example, if vegetation was counted 20 times within a total of 50 observations, divide 20 by 50 and multiply by 100 to obtain a flat vegetation cover of 40%.

2.5.2 Conduct the line transect test method, as described in Section 2.5.1 of this appendix, an additional two times on areas that represent a random portion of the overall conditions of the site and average results.

2.6 Determination of Standing Vegetative Cover: Standing vegetation includes vegetation that is attached (rooted) with a predominant vertical orientation. Standing vegetation, which is dead but firmly rooted, shall be considered equally protective as live vegetation. Conduct the following standing vegetation test method to determine if 30% cover or more exists. If the resulting percent cover is less than 30% but equal to or greater than 10%, then conduct the test in Section 2.4 (Determination of Threshold Friction Velocity [TFV]) of this appendix in order to determine if the site is stabilized, such that the standing vegetation cover is equal to or greater than 10%, where threshold friction velocity, corrected for non-erodible elements, is equal to or greater than 43 cm/second.

2.6.1 For standing vegetation that consists of large, separate vegetative structures (e.g., shrubs and sagebrush), select a survey area that represents a random portion of the overall conditions of the site that is the shape of a square with sides equal to at least 10 times the average height of the vegetative structures. For smaller standing vegetation, select a survey area of three feet by three feet.

2.6.2 Count the number of standing vegetative structures within the survey area. Count vegetation, which grows in clumps as a single unit. Where different types of vegetation exist and/or vegetation of different height and width exists, separate the vegetative structures with similar dimensions into groups. Count the number of vegetative structures in each group within the survey area. Select an individual structure within each group that represents the average height and width of the vegetation in the group. If the structure is dense (e.g., when looking at it vertically from base to top there is little or zero open air space within its perimeter), calculate and record its frontal silhouette area, according to Equation 6 of this appendix. Also, use Equation 6 of this appendix to estimate the average height and width of the vegetation if the survey area is larger than nine square feet. Otherwise, use the procedure in Section 2.6.3 of this appendix to calculate the frontal silhouette area. Then calculate the percent cover of standing vegetation according to Equations 7, 8, and 9 of this appendix.

$$\text{Average Height} \times \text{Average Width} = \text{Frontal Silhouette Area} \quad \text{Eq. 6}$$

$$\text{Frontal Silhouette Area of Individual Vegetative Structure} \times \text{Number of Vegetation Structures Per Group} = \text{Frontal Silhouette Area of Group} \quad \text{Eq. 7}$$

$$\text{Frontal Silhouette Area of Group 1} + \text{Frontal Silhouette Area of Group 2 (etc.)} = \text{Total Frontal Silhouette Area.} \quad \text{Eq. 8}$$

$$(\text{Total Frontal Silhouette Area} \div \text{Survey Area}) \times 100 = \text{Percent Cover of Standing Vegetation} \quad \text{Eq. 9}$$

$$[(\text{Number of Circled Gridlines within the Outlined Area Counted that are not Covered by Vegetation} \div \text{Total Number of Gridline Intersections within the Outlined Area}) \times 100] = \text{Percent Open Space} \quad \text{Eq. 10}$$

$$100 - \text{Percent Open Space} = \text{Percent Vegetative Density} \quad \text{Eq. 11}$$

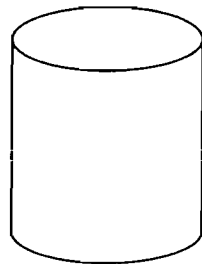
$$\text{Percent Vegetative Density} \div 100 = \text{Vegetative Density} \quad \text{Eq. 12}$$

$$\text{Max. Height} \times \text{Max. Width} \times (\text{Vegetative Density} \div 0.4)^{0.5} = \text{Frontal Silhouette Area} \quad \text{Eq. 13}$$

Note: Ensure consistent units of measurement (e.g., square meters or square inches) when calculating percent cover.

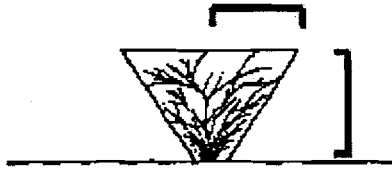
2.6.3 Vegetative Density Factor: Cut a single, representative piece of vegetation (or consolidated vegetative structure) to within 1 cm of surface soil. Using a white paper grid or transparent grid over white paper, lay the vegetation flat on top of the grid (but do not apply pressure to flatten the structure). Grid boxes of 1-inch or ½-inch squares are sufficient for most vegetation when conducting this procedure. Using a marker or pencil, outline the shape of the vegetation along its outer perimeter, according to Figure B, C, or D of this appendix, as appropriate. (Note: Figure C differs from Figure D primarily in that the width of vegetation in Figure C is narrow at its base and gradually broadens to its tallest height. In Figure D, the width of the vegetation generally becomes narrower from its midpoint to its tallest height.) Remove the vegetation, count and record the total number of gridline intersections within the outlined area, but do not count gridline intersections that connect with the outlined shape. There must be at least 10 gridline intersections within the outlined area and preferably more than 20, otherwise, use smaller grid boxes. Draw small circles (no greater than a 3/32-inch diameter) at each gridline intersection counted within the outlined area. Replace the vegetation on the grid within its outlined shape. From a distance of approximately 2 feet directly above the grid, observe each circled gridline intersection. Count and record the number of circled gridline intersections that are not covered by any piece of the vegetation. To calculate percent vegetative density, use Equations 10 and 11 of this appendix. If percent vegetative density is equal to or greater than 30, use an equation (one of the Equations 14, 15, or 16 of this appendix) that matches the outline used to trace the vegetation (Figure B, C, or D) to calculate its frontal silhouette area. If percent vegetative density is less than 30, use Equations 12 and 13 of this appendix to calculate the frontal silhouette area.

Figure B. Cylinder



$$\text{Frontal Silhouette Area} = \text{Maximum Height} \times \text{Maximum Width} \quad \text{Eq. 14}$$

Figure C. Inverted Cone



$$\text{Frontal Silhouette Area} = \text{Maximum Height} \times \frac{1}{2} \text{Maximum Width}$$

Eq. 15

Figure D. Upper Sphere



$$\text{Frontal Silhouette Area} = (3.14 \times \text{Maximum Height} \times \frac{1}{2} \text{Maximum Width}) \div 2$$

Eq. 16

2.7 Rock Test Method: The Rock Test Method, which is similar to Section 2.4 (Test Methods for Stabilization-Determination of Threshold Friction Velocity [TFV]) of this appendix, examines the wind-resistance effects of rocks and other non-erodible elements on disturbed surfaces. Non-erodible elements are objects larger than 1 centimeter (cm) in diameter that remain firmly in place even on windy days. Typically, non-erodible elements include rocks, stones, glass fragments, and hard-packed clumps of soil lying on or embedded in the surface. Vegetation does not count as a non-erodible element in this method. The purpose of this test method is to estimate the percent cover of non-erodible elements on a given surface to see whether such elements take up enough space to offer protection against windblown dust. For simplification, the following test method refers to all non-erodible elements as “rocks”.

2.7.1 Select a 1-meter \times 1-meter survey area that represents the general rock distribution on the surface. (A 1-meter \times 1-meter area is slightly greater than a 3-foot \times 3-foot area). Mark off the survey area by tracing a straight, visible line in the dirt along the edge of a measuring tape or by placing short ropes, yard sticks, or other straight objects in a square around the survey area.

2.7.2 Without moving any of the rocks or other elements, examine the survey area. Since rocks $> 3/8$ inch (1 cm) in diameter are of interest, measure the diameter of some of the smaller rocks to get a sense for which rocks need to be considered.

- 2.7.3** Mentally group the rocks > 3/8 inch (1 cm) diameter lying in the survey area into small, medium, and large size categories. Or, if the rocks are all approximately the same size, simply select a rock of average size and typical shape. Without removing any of the rocks from the ground, count the number of rocks in the survey area in each group and write down the resulting number.
- 2.7.4** Without removing rocks, select one or two average-size rocks in each group and measure the length and width. Use either metric units or standard units. Using a calculator, multiply the length times the width of the rocks to get the average dimensions of the rocks in each group. Write down the results for each rock group.
- 2.7.5** For each rock group, multiply the average dimensions (length times width) by the number of rocks counted in the group. Add the results from each rock group to get the total rock area within the survey area.
- 2.7.6** Divide the total rock area, calculated in Section 2.7.5 of this appendix, by two (to get frontal area). Divide the resulting number by the size of the survey area (making sure the units of measurement match), and multiply by 100 for percent rock cover. For example, the total rock area is 1,400 square centimeters, divide 1,400 by 2 to get 700. Divide 700 by 10,000 (the survey area is 1 meter by 1 meter, which is 100 centimeters by 100 centimeters or 10,000 square centimeters), and multiply by 100. The result is 7% rock cover. If rock measurements are made in inches, convert the survey area from meters to inches (1 inch = 2.54 centimeters).
- 2.7.7** Select and mark off two additional survey areas and repeat the procedures described in Sections 2.7.1 through 2.7.6 of this appendix. Make sure the additional survey areas also represent the general rock distribution on the site. Average the percent cover results from all three survey areas to estimate the average percent of rock cover.
- 2.7.8** If the average rock cover is greater than or equal to 10%, the surface is stable. If the average rock cover is less than 10%, follow the procedures in Section 2.7.9 of this appendix.
- 2.7.9** If the average rock cover is less than 10%, the surface may or may not be stable. Follow the procedures in Section 2.4 (Determination of Threshold Friction Velocity [TFV]) of this rule and use the results from the rock test method as a correction (i.e., multiplication) factor. If the rock cover is at least 1%, such rock cover helps to limit windblown dust. However, depending on the soil's ability to release fine dust particles into the air, the percent rock cover may or may not be sufficient enough to stabilize the surface. It is also possible that the soil itself has a high enough TFV to be stable without even accounting for rock cover.

- 2.7.10 After completing the procedures described in Section 2.7.9 of this appendix, use Table 2 of this appendix to identify the appropriate correction factor to the TFV, depending on the percent rock cover. Multiply the correction factor by the TFV value for a final TFV estimate that is corrected for non-erodible elements.

3. VISUAL OPACITY DETERMINATION OF EMISSIONS FROM DUST-GENERATING OPERATIONS

- 3.1 **Applicability:** This method is applicable for the determination of opacity of fugitive dust plumes from dust-generating operations.
- 3.2 **Principle:** the opacity of emissions from sources of visible emissions is determined visually by an observer qualified according to the procedures of Section 3.4 of this appendix.
- 3.3 **Procedures:** An observer qualified in accordance with Section 3.4 of this appendix, shall use the following procedures for visually determining the opacity of emissions.
- 3.3.1 To determine the opacity of non-continuous dust plumes caused by activities including, but not limited to, bulk material loading/unloading, non-conveyorized screening, or trenching with backhoes:
- a. **Position:** Stand at least 25 feet from the dust-generating operation in order to provide a clear view of the emissions with the sun oriented in the 140° sector to the back. Choose a discrete portion of the operation for observation, such as the unloading point, not the whole operation. Following the above requirements, make opacity observations so that the line of vision is approximately perpendicular to the dust plume and wind direction. If multiple plumes are involved, do not include more than one plume in the line of sight at one time.
 - b. **Initial Fallout Zone:** The initial fallout zone within the plume must be identified. Record the distance from the equipment or path that is your identified initial fallout zone. The initial fallout zone is that area where the heaviest particles drop out of the entrained fugitive dust plume. Opacity readings should be taken at the maximum point of the entrained fugitive dust plume that is located outside the initial fallout zone.
 - c. **Field Records:** Note the following on an observational record sheet:
 - (1) Location of dust-generating operation, type of operation, type of equipment in use and activity, and method of control used, if any;
 - (2) Observer's name, certification data and affiliation, a sketch of the observer's position relative to the dust-generating operation, and

observer's estimated distance and direction to the location of the dust-generating operation;

(3) Time that readings begin, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds); and

(4) Color of the plume and type of background.

d. Observations: Make opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of vision. Make two observations per discrete activity, beginning with the first reading at zero seconds and the second reading at five seconds. The zero-second observation should begin immediately after a plume has been created above the surface involved. Do not look continuously at the plume but, instead, observe the plume briefly at zero seconds and then again at five seconds.

e. Recording Observations: Record the opacity observations to the nearest 5% on an observational record sheet. Each momentary observation recorded represents the average opacity of emissions for a five-second period. Repeat observations until you have recorded at least a total of 12 consecutive opacity readings. The 12 consecutive readings must be taken within the same period of observation but must not exceed one hour. Observations immediately preceding and following interrupted observations can be considered consecutive (e.g., vehicle traveled in front of path, plume doubled over).

f. Data Reduction: Average 12 consecutive opacity readings together. If the average opacity reading equals 20% or lower, the dust-generating operation is in compliance.

3.3.2 To determine the opacity of continuous dust plumes caused by equipment and activities including but not limited to graders, trenchers, paddlewheels, blades, clearing, leveling, and raking:

a. Position: Stand at least 25 feet from the dust-generating operation to provide a clear view of the emissions with the sun oriented in the 140° sector to your back. Following the above requirements, make opacity observations so that the line of vision is approximately perpendicular to the dust plume and wind direction.

b. Dust Plume: Evaluate the dust plume generation and determine if the observations will be made from a single plume or from multiple related plumes.

- (1) If a single piece of equipment is observed working, then all measurements should be taken off the resultant plume as long as the equipment remains within the 140° sector to the back.
 - (2) If there are multiple related sources or multiple related points of emissions of dust from a particular activity, or multiple pieces of equipment operating in a confined area, opacity readings should be taken at the densest point within the discrete length of equipment travel path within the 140° sector to the back. Readings can be taken for more than one piece of equipment within the discrete length of travel path within the 140° sector to the back.
- c. Initial Fallout Zone:** The initial fallout zone within the plume must be identified. Record the distance from the equipment or path that is your identified initial fallout zone. The initial fallout zone is that area where the heaviest particles drop out of the entrained fugitive dust plume. Opacity readings should be taken at the maximum point of the entrained fugitive dust plume that is located outside the initial fallout zone.
- d. Field Records:** Note the following on an observational record sheet:
- (1) Location of the dust-generating operation, type of operation, type of equipment in use and activity, and method of control used, if any;
 - (2) Observer's name, certification data and affiliation, a sketch of the observer's position relative to the dust-generating operation, and observer's estimated distance and direction to the location of the dust-generating operation; and
 - (3) Time that readings begin, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds).
- e. Observations:** Make opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of vision. Make opacity observations at a point beyond the fallout zone. The observations should be made at the densest point. Observations will be made every 10 seconds until at least 12 readings have been recorded. Do not look continuously at the plume, but observe the plume momentarily at 10-second intervals. If the equipment generating the plume travels outside the field of observation or if the equipment ceases to operate, mark an "X" for the 10-second reading interval. Mark an "X" when plumes are stacked or doubled, either behind or in front, or become parallel to line of sight. Opacity readings identified as "X" shall be considered interrupted readings.

- f. **Recording Observations:** Record the opacity observations to the nearest 5% on an observational record sheet. Each momentary observation recorded represents the average opacity of emissions for a 10-second period.
- g. **Data Reduction:** Average 12 consecutive opacity readings together. If the average opacity reading equals 20% or lower, the dust-generating operation is in compliance.

3.4 Qualification and Testing:

- 3.4.1 **Certification Requirements:** To receive certification as a qualified observer, a candidate must be tested and demonstrate the ability to assign opacity readings in 5% increments to 25 different black plumes and 25 different white plumes, with an error not to exceed 15% opacity on any one reading and an average error not to exceed 7.5% opacity in each category. Candidates shall be tested according to the procedures described in Section 3.4.2 of this appendix. Any smoke generator used pursuant to Section 3.4.2 of this appendix shall be equipped with a smoke meter which meets the requirements of Section 3.4.3 of this appendix. Certification tests that do not meet the requirements of Sections 3.4.2 and 3.4.3 of this appendix are not valid. The certification shall be valid for a period of 6 months, and after each 6-month period the qualification procedures must be repeated by an observer in order to retain certification.
- 3.4.2 **Certification Procedure:** The certification test consists of showing the candidate a complete run of 50 plumes, 25 black plumes and 25 white plumes, generated by a smoke generator. Plumes shall be presented in random order within each set of 25 black and 25 white plumes. The candidate assigns an opacity value to each plume and records the observation on a suitable form. At the completion of each run of 50 readings, the score of the candidate is determined. If a candidate fails to qualify, the complete run of 50 readings must be repeated in any retest. The smoke test may be administered as part of a smoke school or training program, and may be preceded by training or familiarization runs of the smoke generator, during which candidates are shown black and white plumes of known opacity.
- 3.4.3 **Smoke Generator Specifications:** Any smoke generator used for the purpose of Section 3.4.2 of this appendix shall be equipped with a smoke meter installed to measure opacity across the diameter of the smoke generator stack. The smoke meter output shall display in-stack opacity, based upon a path length equal to the stack exit diameter on a full 0% to 100% chart recorder scale. The smoke meter optical design and performance shall meet the specifications shown in Table 3 of this appendix. The smoke meter shall be calibrated as prescribed in Section 3.4.3(a) of this appendix prior to conducting each smoke reading test. At the completion of each test, the zero and span drift shall be checked, and if the drift exceeds plus or minus 1% opacity, the condition shall be corrected prior to conducting any subsequent test runs. The smoke meter

shall be demonstrated, at the time of installation, to meet the specifications listed in Table 3 of this appendix. This demonstration shall be repeated following any subsequent repair or replacement of the photocell or associated electronic circuitry, including the chart recorder or output meter, or every 6 months, whichever occurs first.

a. Calibration: The smoke meter is calibrated after allowing a minimum of 30 minutes warm-up by alternately producing simulated opacity of 0% and 100%. When stable response at 0% or 100% is noted, the smoke meter is adjusted to produce an output of 0% or 100%, as appropriate. This calibration shall be repeated until stable 0% and 100% readings are produced without adjustment. Simulated 0% and 100% opacity values may be produced by alternately switching the power to the light source on and off while the smoke generator is not producing smoke.

b. Smoke Meter Evaluation: The smoke meter design and performance are to be evaluated as follows:

- (1) **Light Source:** Verify, from manufacturer's data and from voltage measurements made at the lamp, as installed, that the lamp is operated within plus or minus 5% of the nominal rated voltage.
- (2) **Spectral Response of Photocell:** Verify from manufacturer's data that the photocell has a photopic response (i.e., the spectral sensitivity of the cell shall closely approximate the standard spectral-luminosity curve for photopic vision which is referenced in (b) of Table 3 of this appendix).
- (3) **Angle of View:** Check construction geometry to ensure that the total angle of view of the smoke plume, as seen by the photocell, does not exceed 15°. Calculate the total angle of view (ϕ_v) as follows:

$$\text{Total Angle of View} = 2 \tan^{-1} (d/2L)$$

where:

d = The photocell diameter + the diameter of the limiting aperture; and
L = The distance from the photocell to the limiting aperture. The limiting aperture is the point in the path between the photocell and the smoke plume where the angle of view is most restricted. In smoke generator smoke meters, this is normally an orifice plate.

- (4) **Angle of Projection:** Check construction geometry to ensure that the total angle of projection of the lamp on the smoke plume does not exceed 15°. Calculate the total angle of projection (ϕ_p) as follows:

$$\text{Total Angle of Projection} = 2 \tan^{-1} (d/2L)$$

where:

d = The sum of the length of the lamp filament + the diameter of the limiting aperture; and

L = The distance from the lamp to the limiting aperture.

- (5) **Calibration Error:** Using neutral-density filters of known opacity, check the error between the actual response and the theoretical linear response of the smoke meter. This check is accomplished by first calibrating the smoke meter, according to Section 3.4.3(a) of this appendix, and then inserting a series of three neutral-density filters of nominal opacity of 20%, 50%, and 75% in the smoke meter path length. Use filters calibrated within plus or minus 2%. Care should be taken when inserting the filters to prevent stray light from affecting the meter. Make a total of five nonconsecutive readings for each filter. The maximum opacity error on any one reading shall be plus or minus 3%.
- (6) **Zero and Span Drift:** Determine the zero and span drift by calibrating and operating the smoke generator in a normal manner over a 1-hour period. The drift is measured by checking the zero and span at the end of this period.
- (7) **Response Time:** Determine the response time by producing the series of five simulated 0% and 100% opacity values and observing the time required to reach stable response. Opacity values of 0% and 100% may be simulated by alternately switching the power to the light source off and on while the smoke generator is not operating.

Table 3. Smoke Meter Design and Performance Specifications

Parameter	Specification
a. Light source	Incandescent lamp operated at nominal rated voltage.
b. Spectral response of photocell	Photopic (daylight spectral response of the human eye)
c. Angle of view	15° maximum total angle
d. Angle of projection	15° maximum total angle
e. Calibration error	Plus or minus 3% opacity, maximum
f. Zero and span drift	Plus or minus 1% opacity, 30 minutes
g. Response time	Less than or equal to 5 seconds

4. VISUAL OPACITY DETERMINATION OF EMISSIONS FROM LIVESTOCK ACTIVITIES – CORRALS, PENS, AND ARENAS

- 4.1 **Applicability:** This method is applicable for the determination of opacity of fugitive dust plumes from livestock activities (corrals, pens, and arenas).
- 4.2 **Principle:** The opacity of emissions from livestock activities (corrals, pens, and arenas) is determined visually by an observer qualified according to Section 3.4 of this appendix.

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Adopted 04/07/04

**APPENDIX F
SOIL DESIGNATIONS**

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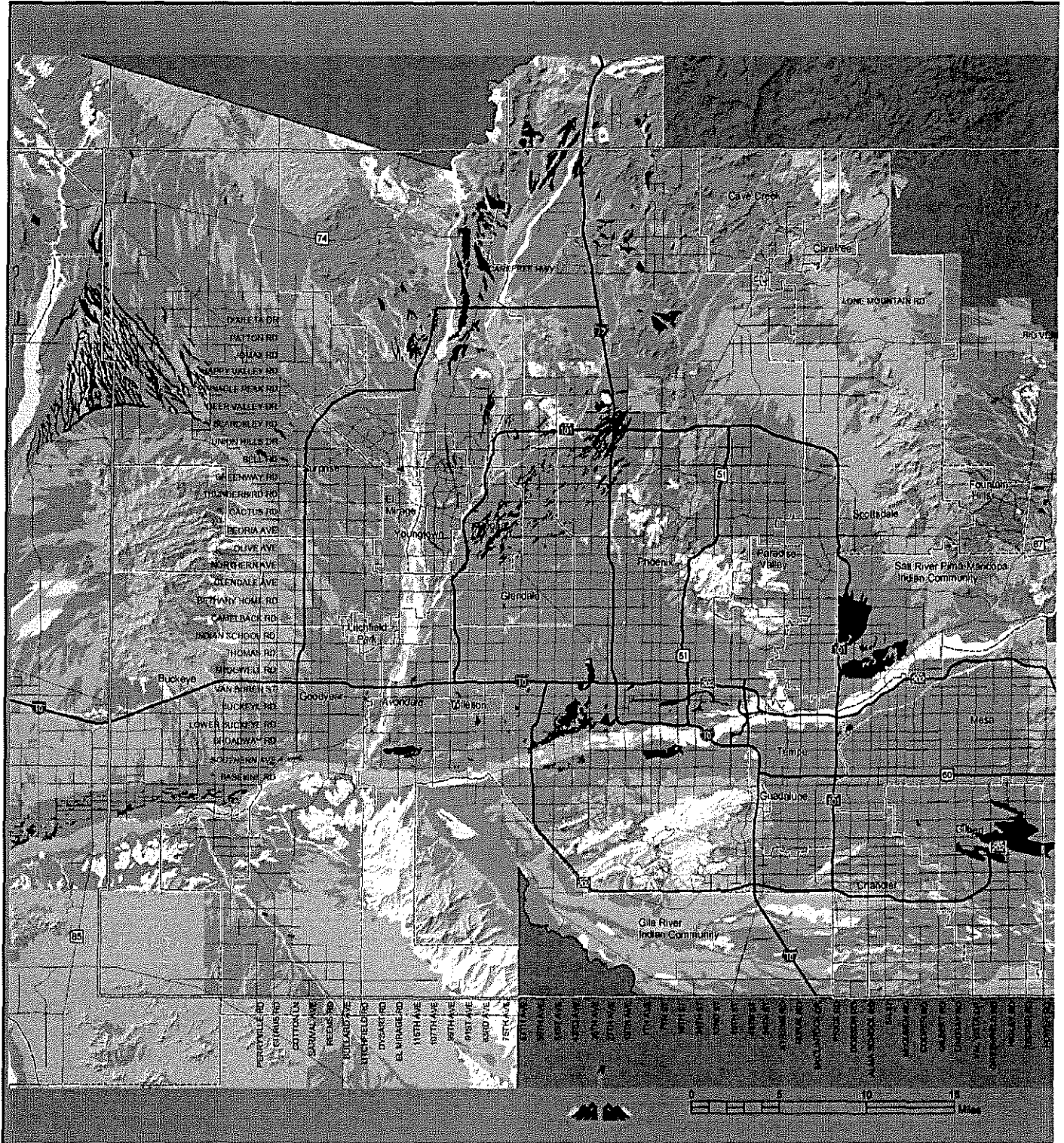
SECTION 1 – SOIL DESCRIPTIONS

SECTION 2 – SOIL MAP

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

**APPENDIX F
SOIL DESIGNATIONS**

1. SOIL DESCRIPTIONS
 - a. VERY SLIGHT SOIL TEXTURE – includes very fine sand, fine sand, sand, coarse sand, loamy very fine sand, loamy fine sand, loamy sand.
 - b. SLIGHT SOIL TEXTURE – includes very fine sandy loam, fine sandy loam, sandy loam, course sandy loam.
 - c. MODERATE SOIL TEXTURE – includes loam, silt loam, clay loam, silty clay loam, sandy clay loam.
 - d. SEVERE SOIL TEXTURE – includes clay, silty clay, sandy clay.
2. SOIL MAP



DMITTA DR
PATTON RD
SARAS RD
HAPPY VALLEY RD
SINGLE PEAK RD
DEER VALLEY DR
BEARHOLEY RD
LINDEN HILLS DR
BILLS RD
WEDDWAY RD
THUNDERBOLT RD
CACTUS RD
PEORIA AVE
OLIVE AVE
NORTHERN AVE
GLENDALE AVE
BETHANY HOME RD
CARELBACK RD
RODAN SCHOOL RD
THOMAS RD
BUCKEYE
BUCKEYE RD
VAN NUBEN ST
BUCKEYE RD
LOWER BUCKEYE RD
BROADWAY RD
SCOTTSMAN DR
BASELINE RD

PEROVILLE RD
COTTON Cn
SUNNYSIDE
FEEDER RD
BULLCREEK
STICKFIELD RD
DYEAS RD
EL VIRAGE RD
NORTH AVE
NORTH AVE
BOTH AVE
FIRST AVE
CARD AVE
PETROUSE

