Maricopa County AIR QUALITY DEPARTMENT
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June 16, 2017

Mr. Misael Cabrera, Director
Arizona Department of Environmental Quality ("ADEQ")
1110 West Washington Street
Phoenix, Arizona 85007

RE: Revision To State Implementation Plan ("SIP") Revision For The Maricopa County Air Quality Department ("MCAQD") Ozone Rules Contained In The Arizona SIP

Dear Mr. Cabrera:

As the designated U.S. Environmental Protection Agency ("EPA") contact, the MCAQD hereby requests ADEQ to submit to the EPA for approval the enclosed revision to the SIP Revision for the MCAQD ozone rules contained in the Arizona SIP. The MCAQD is providing an electronic format (PDF) of this revision to the SIP Revision to ADEQ.

The enclosed revision to the SIP Revision for the MCAQD ozone rules contained in the Arizona SIP addresses the public notice requirements for the reasonably available control technology (RACT) SIP and the negative declarations. Although the RACT SIP analysis dated December 5, 2016 was included with the rules that were submitted to the EPA on December 19, 2016 as a revision to the Arizona SIP, neither the Notice of Public Hearing newspaper ads nor the Board of Supervisors' certified agenda mentioned the RACT SIP or the negative declarations. The enclosed revision to the SIP Revision for the MCAQD ozone rules contained in the Arizona SIP satisfies such requirements. The only changes to the SIP Revision, which was submitted to the EPA on December 19, 2016, are in Table 12 and Appendices 1, 3, and 7.

You may direct any questions to Hether Krause, Manager of the Planning & Analysis Division, at (602) 506-6731 or hetherkrause@mail.maricopa.gov.

Sincerely,

Philip A. McNeely, R.G.
Director

Enclosures
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Maricopa County
Air Quality Department

Revisions To The State Implementation Plan Revision For The Maricopa County Air Quality Department Ozone Rules Contained In The Arizona SIP

Originally Dated December 5, 2016
Originally Submitted To the EPA On December 19, 2016
June 16, 2017

• Highlighted Items Have Been Revised/Added

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SECTION 1: INTRODUCTION

1.1 Purpose

This State Implementation Plan Revision ("SIP Revision") is being submitted to the U.S. Environmental Protection Agency ("EPA") for approval of final revisions to ozone rules contained in the Arizona SIP for portions under the jurisdiction of the Maricopa County Air Quality Department ("MCAQD"); six (6) rules were revised to implement reasonably available control technology ("RACT") for volatile organic compounds ("VOCs") and three (3) rules were revised to implement RACT for nitrogen oxides ("NO_x"). The rule revisions will replace existing approved SIP rules with requirements that are either as stringent as or more stringent than the existing approved SIP rules. The MCAQD is requesting that the EPA rescind (withdraw) from the Arizona SIP the existing approved versions of the MCAQD's rules and to approve into the Arizona SIP the revised and adopted versions of the MCAQD's rules – Rules 322, 323, 324, 336, 342, 350, 351, 352, and 353.

1.2 Background

The Clean Air Act Amendments ("CAAA") of 1990 gives States primary responsibility for achieving the national ambient air quality standards ("NAAQS"). The NAAQS are established by the EPA as the maximum concentrations of specific air contaminants allowed in the atmosphere above which public health and welfare would not be protected.

The CAAA requires that States attain the NAAQS by specified dates based on the severity of an area's air quality problem. Maricopa County is designated as "moderate" nonattainment for the 2008 eight-hour ozone NAAQS (86 FR 26697, May 4, 2016). As a "moderate" nonattainment area, Maricopa County is required by the CAAA to attain the 2008 eight-hour ozone NAAQS by July 20, 2018.

The Maricopa Association of Governments ("MAG") has prepared the MAG 2017 Eight-Hour Ozone Moderate Area Plan to meet the requirements of Section 182(b) of the Clean Air Act. Per the MAG 2017 Eight-Hour Ozone Moderate Area Plan, "The new MAG 2017 Eight-Hour Ozone Moderate Area Plan includes 93 existing and approved ozone control measures in the Maricopa nonattainment area from the EPA approved regional air quality plans and separate EPA actions. The overall approach taken in the plan is to demonstrate attainment with existing federal, state, and local ozone control measures. The implementation of existing ozone control measures in the Maricopa eight-hour ozone nonattainment area has already been effective in reducing ozone. These measures have allowed the area to attain and maintain both the one-hour ozone standard and the 1997 eight-hour ozone standard of 0.08 parts per million. The existing ozone control measures continue to have emission reduction benefits that provide for the attainment of the 2008 ozone standard in the 2017 ozone season prior to the July 20, 2018 attainment date. The emission reduction benefits of the existing measures also continue beyond the attainment year of 2017, providing the emissions reductions needed in 2018 to satisfy the contingency measure requirements of the Clean Air Act Section 172(c)(9)."

Within the Maricopa nonattainment area, the MCAQD must implement RACT for (1) sources that are subject to Control Techniques Guidelines (CTGs) issued by the EPA, (2) major sources of

VOCs (ozone precursors), and (3) all major stationary sources of NO_x (ozone precursors) that are located in the area.

Because of the Maricopa nonattainment area, the MCAQD must ensure that the rules that implemented RACT in 2000 continue to implement RACT and that the NO_x rules implement RACT to reduce NO_x emissions (ozone precursors); the NO_x waiver granted by the EPA no longer applies. In addition, Maricopa County must ensure that the rules implement RACT for all major sources of VOC and NO_x.

The MCAQD revised the following six (6) rules to implement RACT for VOCs:
- Rule 336: Surface Coating Operations
- Rule 342: Coating Wood Furniture And Fixtures
- Rule 350: Storage Of Organic Liquids At Bulk Plants And Bulk Terminals
- Rule 351: Loading Of Organic Liquids
- Rule 352: Gasoline Delivery Vessel Testing And Use
- Rule 353: Gasoline In Stationary Dispensing Tanks

The MCAQD revised the following three (3) rules to implement RACT to NO_x:
- Rule 322: Power Plant Operations
- Rule 323: Fuel Burning Equipment From Industrial/Commercial/Institutional Sources
- Rule 324: Stationary Internal Combustion (IC) Engines

This SIP Revision is being submitted to the EPA for approval of final revisions to these nine (9) ozone rules contained in the Arizona SIP for portions under the MCAQD; six (6) rules were revised to implement reasonably available control technology ("RACT") for volatile organic compounds ("VOCs") and three (3) rules were revised to implement RACT for nitrogen oxides ("NO_x"). The rule revisions will replace existing approved SIP rules with requirements that are either as stringent as or more stringent than the existing approved SIP rules. The MCAQD is requesting that the EPA rescind (withdraw) from the Arizona SIP the existing approved versions of the MCAQD's rules and to approve into the Arizona SIP the revised and adopted versions of the MCAQD's rules – Rules 322, 323, 324, 336, 342, 350, 351, 352, and 353.

1.3 Ozone SIP Requirements for Moderate Nonattainment Areas

The Maricopa Association of Governments (MAG) has prepared the MAG 2017 Eight-Hour Ozone Moderate Area Plan to meet the requirements of Section 182(b) of the Clean Air Act. Per the MAG 2017 Eight-Hour Ozone Moderate Area Plan, "In accordance with Clean Air Act Section 172(c)(1), the MAG 2017 Eight-Hour Ozone Moderate Area Plan is required to provide for the implementation of all reasonably available control measures (RACM), including reasonably available control technology (RACT), as expeditiously as practicable to attain the National Ambient Air Quality Standards and to meet reasonable further progress requirements. The EPA final rule on the implementation of the 2008 ozone standard indicates that states should consider all available measures, including those being implemented in other areas, and that a state must adopt measures for an area only if those measures are economically and technologically feasible and will advance the attainment date or are necessary for reasonable further progress."

"Sections 182(b)(2) and 182(f) of the Clean Air Act require RACT to be implemented in ozone nonattainment areas classified as Moderate or higher. Additionally, 40 CFR Section 51.1112(a)

requires the State to submit a SIP revision "that meets the VOC and NO_x RACT requirements in Clean Air Act Sections 182(b)(2) and 182(f)" for nonattainment areas classified as Moderate or higher. The RACT SIP revision for the Maricopa eight-hour ozone nonattainment area is required to be submitted to EPA by January 1, 2017, as stated in the EPA final rule reclassifying the Maricopa nonattainment area to a Moderate Area (81 FR 26697). The requirement to implement RACT in the Maricopa eight-hour ozone nonattainment area is separate and independent from the Clean Air Act Section 172(c)(1) requirement to adopt RACM necessary to meet reasonable further progress requirements and attain the 2008 ozone standard. Within the Maricopa nonattainment area, the MCAQD implements RACT for point and area sources. The MCAQD has prepared a RACT SIP (*See* Appendix 1)."

This SIP Revision is being submitted to the EPA for approval of final revisions to nine (9) ozone rules contained in the Arizona SIP for portions under the MCAQD; six (6) rules were revised to implement RACT for VOCs and three (3) rules were revised to implement RACT for NO_x. Table 1 below summarizes the changes made to such rules. All rule changes are included in the Notices of Final Rulemaking (*See* Appendix 2). The rule revisions will replace existing approved SIP rules with requirements that are either as stringent as or more stringent than the existing approved SIP rules as summarized in Table 1 below.

TABLE 1: Summary of Changes Made to the Existing Approved SIP Rules

Rule Number And Title	Effective Date	RuleSectionsChan ged	Effect On SIP Stringency
322: Power Plant Operations	October 17, 2007	Section 100 Applicability of Rule; Section 200 Definitions; Section 301 Limitations for Particulate Matter; Section 305 Limitations for Nitrogen Oxides (NOx); Alternative Monitoring Methods; Section 400 Administrative Requirements; and Section 500 Compliance Determination Test Methods.	Strengthened Rule
323: Fuel Burning Equipment From Industrial/Commerc ial/Institutional (ICI) Sources	October 17, 2007	Section104Exemptions; Section 301.1 Good Combustion Practices for Turbines; Section 303 Limitations-Sulfur in Fuel; Section 304.1 Limitations-Nitrogen Oxides; Section 401 Compliance Schedule; and Section 503 Compliance Determinations.	Strengthened Rule
324: Stationary Reciprocating Internal Combustion Engines (RICE)	October 17, 2007	Title revised for clarification; Section 102 Applicability; Section 103 Exemptions; Section 104 Partial Exemption; Section 105 Partial Exemption; Section 106 Partial Exemption; Section 200 Definitions; Section 302 Good Combustion Practices/Tuning Procedure for RICE; Section 304 Limitations for Non-Emergency Engines; Section 306 Equivalent Replacement Engine or Identical Replacement Engine; Section 307 Modification to a Stationary RICE;	Strengthened Rule

Rule Number And Title	Effective Date	RuleSectionsChan ged	Effect On SIP Stringency
		Section 308 Non-Resetting Totalizing Hour Meter; Section 401 Compliance Schedule-Stationary Rice; Section 402 Compliance Schedule-Non-Resetting Totalizing Hour Meter; Section 501 Compliance Determination; Section 503 Compliance Determination Test Methods Incorporated by Reference; and Section 504 Compliance Determination Test MethodsIncorporated by Reference.	
336: Surface Coating Operations	April 7, 1999	Section103 Partial Exemptions; Section 104 Total Categorical Exemptions; Section 200 Definitions; Section 301 Surface Coatings; Section 302 Application Methods for Surface Coatings; Section 303 Cleanup of Application Equipment; Section 304 Work Practices; Section 305 Emission Control System (ECS) Requirements; Section 401 Compliance Schedule VOC Limits; Section 402 Compliance Schedule O&M Plan; Section 501 Recordkeeping and Reporting; Section 502 ECS Recording Requirements; and Section 503 Compliance Determination and Test Methods.	Strengthened Rule
342: Coating Wood Furniture & Fixtures	November 20, 1996	Section103 Exemptions; Section 200 Definitions; Section 301 Limitations; Section 302 Limitation of Conventional Air-Atomized Spray and Other Spray Methods Atomizing with High Pressure Air; Section 304 VOC Leak Detection and Repair; Section 306 Handling and Disposal of VOC-Containing Materials; Section 401 Compliance Schedule for Appendix C; Section 403 Annual Operator Training Requirements to Reduce VOC Emissions; Section 501 Recordkeeping and Reporting; Section 502 Compliance Determination; Appendix A.d Definitions; Appendix B.d; Appendix B.c; and Appendix C.e.	Strengthened Rule
350: Storage of Organic Liquids at Bulk Plants and Terminals	April 6, 1992	Title revised for clarification; Section 101 Purpose; Section 102 Applicability; Section 103 Exemptions; Section 200 Definitions; Section 301 Organic Liquid Stationary Storage Tank Requirements; Section 302 Vapor LossControl System;	Strengthened Rule

Rule Number And Title	Effective Date	RuleSectionsChan ged	Effect On SIP Stringency
		Section 303 Equipment Maintenance and Repair; Section 304 General Requirements for the Transfer of Organic Liquid; Section 401 Organic Liquid (Non-Gasoline) Stationary Storage Tank Inspections; Section 402 Monthly Organic Liquid Transfer Equipment Leak Inspections; Section 403 Organic Liquid (Non-Gaoline) Strorage Tank Inspections-Availability to Control Officer; Section 404 Other Agencies' Requirements; Section 501 Monitoring for Leaks; Section 502 TVP Records; Section 503 Leak Inspection Records; Section 506 Records Retention; and Section507ComplianceDetermination	
351: Loading of Organic Liquids	February 15, 1995	Title revised for clarification; Section 101 Purpose; Section 102 Applicability; Section 103 Exemptions; Section 200 Definitions; Section 301 Federal Standards of Performance for Bulk Gasoline Plants and Bulk Gasoline Terminals; Section 302 Gasoline Stationary Storage Tank Standards; Section 303 Vapor Loss Control; Section 304 General Requirements for the Loading of Gasoline; Section 305 Operating Requirements for a Vapor Loss Control System; Section 401 Equipment Leaks; Section 402 Gasoline Storage Tank Inspections; Section 403 Gasoline Storage Tank Inspections-Availability to Control Officer; Section 404 Other Agencies' Requirements; Section 501 Determining Vapor Tight Status; Section 502 Compliance Inspections; Section 503 Records Retention; and Section 504 Compliance Determination Test Methods Incorporated by Reference.	Strengthened Rule
352: Gasoline Delivery Vessels	November 16, 1992	Title revised for clarification; Section 103 Partial Exemptions; Section 200 Definitions; Section 301 Gasoline Cargo Tank Requirements; Section 302 Loading of Gasoline; Section 401 Maricopa County (MC) Vapor Tightness Test; Section 402 Installation of Control Device; Section 501 Maricopa County (MC) Gasoline Cargo Tank Vapor Tightness Testing Requirement;	Strengthened Rule

Rule Number And Title	Effective Date	RuleSectionsChan ged	Effect On SIP Stringency
		Section 502 Recordkeeping and Reporting Requirements; Section 503 Monitoring for Leaks; Section 504 Compliance; and Section 505 Test Methods Incorporated by Reference.	
353: Transfer of Gasoline Into Stationary Dispensing Tanks	April 6, 1992	Title revised for clarification; Section 101 Purpose; Section 102 Applicability; Section 103 Exemptions; Section 200 Definitions; Section 301 Manufacturers, Suppliers and Owner or Operator; Section 302 General Housekeeping Requirements; Section 303 Gasoline Storage Equipment and Operation Requirements; Section 304 Loading of Gasoline; Section 305 Control of VOC Vapors; Section 401 Inspections; Section 501 Determining Vapor Tight Status; Section 502 Compliance Inspections; Section 503 GDF Recordkeeping; Section 504 Compliance Determination; and Section 505 Test Methods Incorporated by Reference.	Strengthened Rule

1.4 Removal and Replacement of Nine (9) MCAQD Rules in Arizona's SIP

This SIP Revision is being submitted to the EPA for approval of final revisions to nine (9) ozone rules contained in the Arizona SIP for portions under the MCAQD; six (6) rules were revised to implement RACT for VOCs and three (3) rules were revised to implement RACT for NO_x. The rule revisions will replace existing approved SIP rules with requirements that are either as stringent as or more stringent than the existing approved SIP rules. The MCAQD is requesting that the EPA rescind (withdraw) from the Arizona SIP the existing approved versions of the MCAQD's rules and to approve into the Arizona SIP the revised and adopted versions of the MCAQD's rules, as outlined in Table 2 below.

TABLE 2: Summary of Action Requested – Removal and Replacement of Nine (9) MCAQD Rules in Arizona's SIP

Rule Number, Title, And Effective Date	ActionRequested	Replace With
Rule 322: Power Plant Operations, adopted on October 17, 2007	Rescind (withdraw) and Replace	Rule 322: Power Plant Operations, as revised and adopted on November 2, 2016
Rule 323: Fuel Burning Equipment from Industrial/Commercial/Institutional (ICI) Sources, adopted on October 17, 2007	Rescind (withdraw) and Replace	Rule 323: Fuel Burning Equipment from Industrial/Commercial/Institutional (ICI) Sources, as revised and adopted on November 2, 2016

Rule Number, Title, And Effective Date	ActionRequested	Replace With
Rule 324: Stationary Internal Combustion (IC) Engines, adopted on October 17, 2007	Rescind (withdraw) and Replace	Rule 324: Stationary Reciprocating Internal Combustion Engines (RICE), as revised and adopted on November 2, 2016
Rule 336: Surface Coating Operations, adopted on July 13, 1988 and revised on April 7, 1999	Rescind (withdraw) and Replace	Rule 336: Surface Coating Operations, as revised and adopted on November 2, 2016
Rule 342: Coating Wood Furniture and Fixtures, revised and adopted on November 20, 1996	Rescind (withdraw) and Replace	Rule 342: Coating Wood Furniture and Fixtures, as revised and adopted on November 2, 2016
Rule 350: Storage of Organic Liquids at Bulk Plants, adopted on April 6, 1992	Rescind (withdraw) and Replace	Rule 350: Storage and Transfer of Organic Liquids (Non-Gasoline) at an Organic Liquid Distribution Center, as revised and adopted on November 2, 2016
Rule 351: Loading of Organic Liquid, revised on February 15, 1995	Rescind (withdraw) and Replace	Rule 351: Storage and Loading of Gasoline at Bulk Gasoline Plants and Bulk Gasoline Terminals, as revised and adopted on November 2, 2016
Rule 352: Gasoline Delivery Vessel Testing and Use, adopted on November 16, 1992	Rescind (withdraw) and Replace	Rule 352: Gasoline Cargo Tank Testing and Use, as revised and adopted on November 2, 2016
Rule 353: Gasoline in Stationary Dispensing Tanks, adopted on April 6, 1992	Rescind (withdraw) and Replace	Rule 353: Storage and Loading of Gasoline at Gasoline Dispensing Facilities, as revised and adopted on November 2, 2016

1.5 Conclusion

This SIP Revision is being submitted to the EPA for approval of final revisions to nine (9) ozone rules contained in the Arizona SIP for portions under the MCAQD; six (6) rules were revised to implement RACT for VOCs and three (3) rules were revised to implement RACT for NO_x. The rule revisions will replace existing approved SIP rules with requirements that are either as stringent as or more stringent than the existing approved SIP rules. The MCAQD is requesting that the EPA rescind (withdraw) from the Arizona SIP the existing approved versions of the MCAQD's rules and to approve into the Arizona SIP the revised and adopted versions of the MCAQD's rules – Rules 322, 323, 324, 336, 342, 350, 351, 352, and 353.

SECTION 2: COMPLETENESS CRITERIA

2.1 Administrative Materials

2.1(a) A formal letter of submittal from the MCAQD Director or [his] designee, requesting EPA approval of the SIP Revision.

See SIP submission cover letter from Philip A. McNeely, Director of MCAQD, included above.

2.1(b) Evidence that the MCAQD has adopted the SIP Revision in the State code or body of regulations; or issued the permit, order, consent agreement (hereafter "document") in final form.

See Maricopa County Board of Supervisors' Certified Agenda Item and Action Taken on November 2, 2016, Appendix 3. *See* Maricopa County Board of Supervisors' Certified Agenda Item and Action Taken on May 24, 2017, Appendix 3A. The certification complies with 40 C.F.R. 51, Appendix V, 2.1(b), which requires "the date of adoption or final issuance as well as the effective date of the plan, if different from the adoption/issuance date."

2.1(c) Evidence that the MCAQD has the necessary legal authority under State law to adopt and implement the SIP Revision.

Arizona Revised Statutes §§ 49-112, 49-474, 49-471.09, 49-479, and 49-480 authorize MCAQD to issue and administer and submit the ozone rules for approval into the SIP. *See* Appendix 4.

Per 40 CFR § 51.162, the MCAQD will be responsible for meeting the requirements of 40 CFR 51 for all areas under its jurisdiction. Where such responsibility rests with an agency other than an air pollution control agency, such agency will consult with the appropriate State or local air pollution control agency in carrying out the provisions of this subpart. There are no related agreements or memoranda of understanding applicable to this SIP Revision.

2.1(d) A copy of the actual regulations, or documents submitted for approval and incorporation by reference into the plan, including indication of the changes made to the existing approved plan, where applicable.

A copy of the actual regulations submitted for approval is included in the appendices. The Notice of Proposed Rulemaking for each rule is included in Appendix 5, and includes draft copies (strikethrough) of the actual, final and official regulations. Appendix 6 includes a clean copy of each rule of the actual, final, and official regulations. The Notices of Final Rulemaking in Appendix 2 provide a detailed summary of the changes made to each rule of the actual, final and official regulations. The effective date for all rules is November 2, 2016.

2.1(e) Evidence that the MCAQD followed all of the procedural requirements of the State's laws and Constitution in conducting and completing the adoption/issuance of the plan.

The MCAQD followed all of the procedural requirements of the Arizona State's laws and Constitution in conducting and completing the adoption/issuance of the plan. A.R.S. §§ 49-112, 49-471.09, 49-474, 49-479, and 49-480 establish the procedure for rule adoption of a County

regulation. Adoption occurs upon completion of the following:

(1) Filing and publication of a Notice of Proposed Rulemaking (and subsequent notices, as necessary) in the Arizona Administrative Register per A.R.S. § 41- 1013(B)(8) which designates the Register as Arizona's official publication for rules;

(2) Oral proceeding, if requested;
(3) Public hearing, including publication of notice of public hearing in a newspaper;
(4) Opportunity for public comment, including response to public comment, if any;
(5) Board of Supervisor approval; and
(6) Notice of Final Rulemaking, including publication in the Arizona Administrative Register.

MCAQD complied with the rule adoption process. Tables 3 through 12 below show the MCAQD's compliance with the public notice requirements. The Notices of Final Rulemaking in Appendix 2 includes public comments and MCAQD's responses for each rule. Appendix 3 includes the Maricopa County Board of Supervisors' Certified Agenda Item and Action Taken on November 2, 2016. Appendix 3A includes the Maricopa County Board of Supervisors' Certified Agenda Item and Action Taken on May 24, 2017. The rules became effective upon adoption by the Board of Supervisors.

2.1(f) Evidence that public notice was given of the proposed change consistent with procedures approved by EPA, including the date of publication of such notice.

The MCAQD held stakeholder workshops, public hearings, and provided public comment opportunities prior to, during, and after the proposed changes for each rulemaking. The MCAQD's procedural process complied with EPA procedures: the MCAQD provided opportunity for public comment period per 40 CFR § 51.161, including public inspection, a 30-day comment period and prominent notice.

Appendix 7 contains the evidence that MCAQD gave public notice of the proposed changes consistent with procedures approved by the EPA. A summary table of the public notices for each rule is included in Tables 3 through 12 below.

TABLE 3: Summary of Evidence of Public Notice Re: Rule 322 (Power Plant Operations)

Rulemaking Notices	Hearing Notices	PublicComment Opportunities
May 4, 2015: Notice of Briefing to County Manager	April 7, 2016: Board of Health Public Meeting to Initiate Regulatory Change for 4/25/2016 meeting	4/25/2016: Board of Health Public Meeting
June 15, 2015: Stakeholder Workshop Announcement for 06/29/2015 Workshop	August 15, 2016: Notice of Public Hearingon 09/21/2016 for BOS to set hearingfo r 11/02/2016	Stakeholder Workshops: 06/29/2015 09/03/2015 02/24/2016
August 25, 2015: Stakeholder Workshop Announcement for 09/03/2015 Workshop	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing for 11/02/2016 BOS Public Hearing	05/13/2016: May 13, 2016 – June 13, 2016 22 A.A.R. 1122, May 13, 2016
February 8, 2016: Stakeholder Workshop Announcement for 02/24/2016 Workshop	Arizona Business Gazette Affidavit of Publication October 6, 2016, Showing Consecutive Publications on 09/29/2016 and 10/06/2016 for Public Hearing on 11/02/2016	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing 09/28/2016 – 10/06/2016

	The Record Reporter Affidavit of Publication October 5, 2016, Showing Consecutive Publications on 09/28/2016 and 10/05/2016 for Public Hearing on 11/02/2016	09/26/2016: Notice of Public Hearing for 11/02/2016 of BOS Public Hearing

TABLE 4: Summary of Evidence of Public Notice

Re: Rule 323 (Fuel Burning Equipment from Industrial/Commercial/Institutional (ICI) Sources)

Rulemaking Notices	Hearing Notices	PublicComment Opportunities
May 4 2015: Notice of Briefing to County Manager	April 7, 2016: Board of Health Public Meeting to Initiate Regulatory Change for 4/25/2016 meeting	4/25/2016: Board of Health Public Meeting
June 15, 2015: Stakeholder Workshop Announcement for 06/29/2015 Workshop	August 15, 2016: Notice of Public Hearingon 09/21/2016 for BOS to set hearingfo r 11/02/2016	Stakeholder Workshops: 06/29/2015 09/03/2015 02/18/2016
August 25, 2015: Stakeholder Workshop Announcement for 09/03/2015 Workshop	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing for 11/02/2016 BOS Public Hearing	05/13/2016: May 13, 2016 – June 13, 2016 22 A.A.R. 1134, May 13, 2016
February 10, 2016: Stakeholder Workshop Announcement for 02/18/2016 Workshop	Arizona Business Gazette Affidavit of Publication October 6, 2016 Showing Consecutive Publications on 09/29/2016 and 10/06/2016 for Public Hearing on 11/02/2016	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing 09/28/2016 – 10/06/2016
	The Record Reporter Affidavit of Publication October 5, 2016, Showing Consecutive Publications on 09/28/2016 and 10/05/2016 for Public Hearing on 11/02/2016	09/26/2016: Notice of Public Hearing for 11/02/2016 of BOS Public Hearing

TABLE 5: Summary of Evidence of Public Notice
Re: Rule 324 (Stationary Reciprocating Internal Combustion Engines (RICE))

Rulemaking Notices	Hearing Notices	PublicComment Opportunities
May 4 2015: Notice of Briefing to County Manager	April 7, 2016: Board of Health Public Meeting to Initiate Regulatory Change for 4/25/2016 meeting	4/25/2016: Board of Health Public Meeting
July 20, 2015: Stakeholder Workshop Announcement for 08/03/2015 Workshop	August 15, 2016: Notice of Public Hearingon 09/21/2016 for BOS to set hearingfo r 11/02/2016	Stakeholder Workshops: 08/03/2015 11/19/2015 01/27/2016
November 16, 2015: Stakeholder Workshop Announcement for 11/19/2015 Workshop	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing for 11/02/2016 BOS Public Hearing	05/13/2016: May 13, 2016 – June 13, 2016 22 A.A.R. 1145, May 13, 2016
January 11, 2016: Stakeholder Workshop Announcement for 01/27/2016 Workshop	Arizona Business Gazette Affidavit of Publication October 6, 2016 Showing Consecutive Publications on 09/29/2016 and 10/06/2016 for Public Hearing on 11/02/2016	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing 09/28/2016 – 10/06/2016

	The Record Reporter Affidavit of Publication October 5, 2016, Showing Consecutive Publications on 09/28/2016 and 10/05/2016 for Public Hearing on 11/02/2016	09/26/2016: Notice of Public Hearing for 11/02/2016 of BOS Public Hearing

TABLE 6: Summary of Evidence of Public Notice Re: Rule 336 (Surface Coating Operations)

Rulemaking Notices	Hearing Notices	PublicComment Opportunities
May 2015: Notice of Briefing to County Manager	April 7, 2016: Board of Health Public Meeting to Initiate Regulatory Change for 4/25/2016 meeting	4/25/2016: Board of Health Public Meeting
June 15, 2015: Stakeholder Workshop Announcement for 06/29/2015 Workshop	August 15, 2016: Notice of Public Hearingon 09/21/2016 for BOS to set hearingfo r 11/02/2016	Stakeholder Workshops: 06/29/2015 09/03/2015 12/17/2015 02/18/2016
August 25, 2015: Stakeholder Workshop Announcement for 09/03/2015 Workshop	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing for 11/02/2016 BOS Public Hearing	05/13/2016: May 13, 2016 – June 13, 2016 22 A.A.R. 1159, May 13, 2016
December 3, 2015: Stakeholder Workshop Announcement for 12/17/2015 Workshop	Arizona Business Gazette Affidavit of Publication October 6, 2016 Showing Consecutive Publications on 09/29/2016 and 10/06/2016 for Public Hearing on 11/02/2016	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing 09/28/2016 – 10/06/2016
February 10, 2016: Stakeholder Workshop Announcement for 02/18/2016 Workshop	The Record Reporter Affidavit of Publication October 5, 2016, Showing Consecutive Publications on 09/28/2016 and 10/05/2016 for Public Hearing on 11/02/2016	09/26/2016: Notice of Public Hearing for 11/02/2016 of BOS Public Hearing

TABLE 7: Summary of Evidence of Public Notice Re: Rule 342 (Coating Wood Furniture and Fixtures)

Rulemaking Notices	Hearing Notices	PublicComment Opportunities
May 2015: Notice of Briefing to County Manager	April 7, 2016: Board of Health Public Meeting to Initiate Regulatory Change for 4/25/2016 meeting	4/25/2016: Board of Health Public Meeting
July 20, 2015: Stakeholder Workshop Announcement for 08/03/2015 Workshop	August 15, 2016: Notice of Public Hearingon 09/21/2016 for BOS to set hearingfo r 11/02/2016	Stakeholder Workshops: 08/03/2015 12/17/2015 02/09/2016 05/10/2016
December 3, 2015: Stakeholder Workshop Announcement for 12/17/2015 Workshop	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing for 11/02/2016 BOS Public Hearing	05/13/2016: May 13, 2016 – June 13, 2016 22 A.A.R. 1184, May 13, 2016
January 25, 2016: Stakeholder Workshop Announcement for 02/09/2016 Workshop	Arizona Business Gazette Affidavit of Publication October 6, 2016 Showing Consecutive Publications on 09/29/2016 and 10/06/2016 for Public Hearing on 11/02/2016	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing 09/28/2016 – 10/06/2016
April 28, 2016: Stakeholder Workshop Announcement for 05/10/2016 Workshop	The Record Reporter Affidavit of Publication October 5, 2016, Showing Consecutive Publications on 09/28/2016 and 10/05/2016 for Public Hearing on 11/02/2016	09/26/2016: Notice of Public Hearing for 11/02/2016 of BOS Public Hearing

TABLE 8: Summary of Evidence of Public Notice
Re: Rule 350 (Storage and Transfer of Organic Liquids (Non-Gasoline) at an Organic Liquid Distribution Facility)

Rulemaking Notices	Hearing Notices	PublicComment Opportunities
May 4, 2015: Notice of Briefing to County Manager	April 7, 2016: Board of Health Public Meeting to Initiate Regulatory Change for 4/25/2016 meeting	4/25/2016: Board of Health Public Meeting
June 15, 2015: Stakeholder Workshop Announcement for 06/29-30/2015 Workshop	August 15, 2016: Notice of Public Hearingon 09/21/2016 for BOS to set hearingfo r 11/02/2016	Stakeholder Workshops: 06/30/2015 09/14/2015 02/22/2016
08/27/2015: Stakeholder Workshop Announcement for 09/14/2015 Workshop	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing for 11/02/2016 BOS Public Hearing	05/13/2016: May 13, 2016 – June 13, 2016 22 A.A.R. 1207, May 13, 2016
DATE: Stakeholder Workshop Announcement for 02/22/2016 Workshop	Arizona Business Gazette Affidavit of Publication October 6, 2016 Showing Consecutive Publications on 09/29/2016 and 10/06/2016 for Public Hearing on 11/02/2016	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing 09/28/2016 – 10/06/2016
	The Record Reporter Affidavit of Publication October 5, 2016, Showing Consecutive Publications on 09/28/2016 and 10/05/2016 for Public Hearing on 11/02/2016	09/26/2016: Notice of Public Hearing for 11/02/2016 of BOS Public Hearing

TABLE 9: Summary of Evidence of Public Notice
Re: Rule 351 (Storage and Loading of Gasoline at Bulk Gasoline Plants and Bulk Gasoline Terminals)

Rulemaking Notices	Hearing Notices	PublicComment Opportunities
May 4, 2015: Notice of Briefing to County Manager	April 7, 2016: Board of Health Public Meeting to Initiate Regulatory Change for 4/25/2016 meeting	4/25/2016: Board of Health Public Meeting
June 15, 2015: Stakeholder Workshop Announcement for 06/29-30/2015 Workshop	August 15, 2016: Notice of Public Hearingon 09/21/2016 for BOS to set hearingfo r 11/02/2016	Stakeholder Workshops: 06/30/2015 09/14/2015 02/22/2016
DATE: Stakeholder Workshop Announcement for 09/14/2015 Workshop	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing for 11/02/2016 BOS Public Hearing	05/13/2016: May 13, 2016 – June 13, 2016 22 A.A.R. 1224, May 13, 2016
DATE: Stakeholder Workshop Announcement for 02/22/2016 Workshop	Arizona Business Gazette Affidavit of Publication October 6, 2016 Showing Consecutive Publications on 09/29/2016 and 10/06/2016 for Public Hearing on 11/02/2016	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing 09/28/2016 – 10/06/2016
	The Record Reporter Affidavit of Publication October 5, 2016, Showing Consecutive Publications on 09/28/2016 and 10/05/2016 for Public Hearing on 11/02/2016	09/26/2016: Notice of Public Hearing for 11/02/2016 of BOS Public Hearing

TABLE 10: Summary of Evidence of Public Notice Re: Rule 352 (Gasoline Cargo Tank Testing and Use)

Rulemaking Notices	Hearing Notices	PublicComment Opportunities
May 4, 2015: Notice of Briefing to County Manager	April 7, 2016: Board of Health Public Meeting to Initiate Regulatory Change for 4/25/2016 meeting	4/25/2016: Board of Health Public Meeting
June 15, 2015: Stakeholder Workshop Announcement for 06/30/2015 Workshop	August 15, 2016: Notice of Public Hearingon 09/21/2016 for BOS to set hearingfo r 11/02/2016	Stakeholder Workshops: 06/30/2015 09/14/2015 02/22/2016
DATE: Stakeholder Workshop Announcement for 09/14/2015 Workshop	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing for 11/02/2016 BOS Public Hearing	05/13/2016: May 13, 2016 – June 13, 2016 22 A.A.R. 1242, May 13, 2016
DATE: Stakeholder Workshop Announcement for 02/22/2016 Workshop	Arizona Business Gazette Affidavit of Publication October 6, 2016 Showing Consecutive Publications on 09/29/2016 and 10/06/2016 for Public Hearing on 11/02/2016	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing 09/28/2016 – 10/06/2016
	The Record Reporter Affidavit of Publication October 5, 2016, Showing Consecutive Publications on 09/28/2016 and 10/05/2016 for Public Hearing on 11/02/2016	09/26/2016: Notice of Public Hearing for 11/02/2016 of BOS Public Hearing

TABLE 11: Summary of Evidence of Public Notice Re: Rule 353 (Storage and Loading of Gasoline at Gasoline Dispensing Facilities)

Rulemaking Notices	Hearing Notices	PublicComment Opportunities
May 4, 2015: Notice of Briefing to County Manager	April 7, 2016: Board of Health Public Meeting to Initiate Regulatory Change for 4/25/2016 meeting	4/25/2016: Board of Health Public Meeting
June 15, 2015: Stakeholder Workshop Announcement for 06/30/2015 Workshop	August 15, 2016: Notice of Public Hearingon 09/21/2016 for BOS to set hearingfo r 11/02/2016	Stakeholder Workshops: 06/30/2015 09/14/2015 02/22/2016
DATE: Stakeholder Workshop Announcement for 09/14/2015 Workshop	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing for 11/02/2016 BOS Public Hearing	05/13/2016: May 13, 2016 – June 13, 2016 22 A.A.R. 1257, May 13, 2016
DATE: Stakeholder Workshop Announcement for 02/22/2016 Workshop	Arizona Business Gazette Affidavit of Publication October 6, 2016 Showing Consecutive Publications on 09/29/2016 and 10/06/2016 for Public Hearing on 11/02/2016	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing 09/28/2016 – 10/06/2016
	The Record Reporter Affidavit of Publication October 5, 2016, Showing Consecutive Publications on 09/28/2016 and 10/05/2016 for Public Hearing on 11/02/2016	09/26/2016: Notice of Public Hearing for 11/02/2016 of BOS Public Hearing

TABLE 12: Summary of Evidence of Public Notice Re: RACT SIP And Negative Declarations

Rulemaking Notices	Hearing Notices	PublicComment Opportunities

Not Applicable	August 15, 2016: Notice of Public Hearing on 09/21/2016 for BOS to set hearing for 11/02/2016	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing 09/28/2016 – 10/06/2016
	September 28 and 29, 2016 and October 5 and 6, 2016: Notice of Public Hearing for 11/02/2016 BOS Public Hearing	09/26/2016: Notice of Public Hearing for 11/02/2016 of BOS Public Hearing
	Arizona Business Gazette Affidavit of Publication October 6, 2016 Showing Consecutive Publications on 09/29/2016 and 10/06/2016 for Public Hearing on 11/02/2016	30-Day Comment Period November 2 thru December 2, 2016 The Record Reporter Affidavit of Publication November 2 and 9, 2016

Rulemaking Notices	Hearing Notices	PublicComment Opportunities
		Arizona Business Gazette Affidavit of Publication November 3 and 10, 2016
	The Record Reporter Affidavit of Publication October 5, 2016, Showing Consecutive Publications on 09/28/2016 and 10/05/2016 for Public Hearing on 11/02/2016	April 12, 2017: Notice of Public Hearing for May 24, 2017 BOS Public Hearing
		April 19, 20, 26, and 27, 2017: Notice of Public Hearing
		30-Day Comment Period The Record Reporter Affidavit of Publication April 19 and 26, 2017 Arizona Business Gazette Affidavit of Publication April 20 and 27, 2017

2.1(g) Certification that public hearing(s) were held in accordance with the information provided in the public notice and the State's laws and constitution, if applicable and consistent with the public hearing requirements in 40 CFR 51.102.

See Appendix 3, Maricopa County Board of Supervisors' Certified Agenda Item and Action Taken on November 2, 2016. *See* Appendix 3A, Maricopa County Board of Supervisors' Certified Agenda Item and Action Taken on May 24, 2017. *See* Appendix 7, evidence that MCAQD gave public notice of the proposed changes consistent with procedures approved by the EPA.

2.1(h) Compilation of public comments and MCAQD's response thereto.

The Notices of Final Rulemaking in Appendix 2 include public comments and MCAQD's responses for each rule.

2.2 Technical Support

2.2(a) Identification of all regulated pollutants affected by the plan.

This SIP Revision affects the following criteria pollutants: nitrogen oxides ("NO_x") and volatile organic compounds ("VOCs").

2.2(b) Identification of the locations of affected sources including the EPA attainment/nonattainment designation of the locations and the status of the attainment plan for the affected areas(s).

This SIP Revision is potentially applicable to all areas and sources under the MCAQD's jurisdiction. The EPA attainment/nonattainment designations for all or parts of Maricopa County are:

PM_{10} Classification:	Serious (As of June 6, 2007)
Carbon Monoxide Classification:	Attainment (As of April 2005)
Ozone Classification:	Moderate (As of May 4, 2016)
$PM_{2.5}$ Classification:	Unclassified/Attainment (As of March 2011)

2.2(c) Quantification of the changes in plan allowable emissions from the affected sources; estimates of changes in current actual emissions from affected sources or, where appropriate, quantification of changes in actual emissions from affected sources through calculations of the differences between certain baseline levels and allowable emissions anticipated as a result of the revision.

Per the MAG 2017 Eight-Hour Ozone Moderate Area Plan, "The new MAG 2017 Eight-Hour Ozone Moderate Area Plan includes 93 existing and approved ozone control measures in the Maricopa nonattainment area from EPA approved regional air quality plans and separate EPA actions. The overall approach taken in the plan is to demonstrate attainment with existing federal, state and local ozone control measures. The implementation of existing ozone control measures in the Maricopa eight-hour ozone nonattainment area has already been effective in reducing ozone. These measures have allowed the area to attain and maintain both the one-hour ozone standard and the 1997 eight-hour ozone standard of 0.08 parts per million."

This SIP Revision is being submitted to the EPA for approval of final revisions to nine (9) ozone rules contained in the Arizona SIP for portions under the MCAQD; six (6) rules were revised to implement RACT for VOCs and three (3) rules were revised to implement RACT for NO_x. Section 1.3 Table 1 in this SIP Revision summarizes the changes made to such rules. All rule changes are included in the Notices of Final Rulemaking (*See* Appendix 2). The rule revisions will replace existing approved SIP rules with requirements that are either as stringent as or more stringent than the existing approved SIP rules.

2.2(d) The MCAQD's demonstration that the NAAQS, prevention of significant deterioration increments, reasonable further progress demonstration, and visibility, as applicable, are protected if the plan is approved and implemented.

Per the MAG 2017 Eight-Hour Ozone Moderate Area Plan, "Section 182(a)(2)(C) requires the State to submit a revision that requires permits, in accordance with Sections 172(c)(5) and 173 of the Clean Air Act, for the construction and operation of each new or modified major stationary source (with respect to ozone) located within the Moderate nonattainment area. Except as noted below, the nonattainment area preconstruction permit program for the portions of the Moderate ozone nonattainment area located in Maricopa County is administered by the Maricopa County Air Quality Department. On August 15, 1994, the Arizona Department of Environmental Quality

submitted to EPA the State Implementation Plan - Maricopa County New Source Review and Prevention of Significant Deterioration (NSR/PSD) Program for Major Sources and Major Modifications, and New Source Review (NSR) for Minor Sources. The submission included new or amended Maricopa County Air Quality Rules 100, 200, 210, 220, 240, 241, 245, 270, 500 and Appendix B as revisions to the County's approved nonattainment new source review program. These new and amended rules were designed in part to satisfy the requirements of Title I, Part D, Subpart 2 of the Clean Air Act Amendments of 1990 for nonattainment new source review in ozone nonattainment areas as well as all of the requirements of sections 172(c)(5) and 173 of the Clean Air Act. The Arizona Department of Environmental Quality submitted supplemental documentation, amendments to these rules and additional rules implementing the County's new source review program (County Rules 242 and 510) on August 30, 1994, August 31, 1995, February 26, 1997, June 7, 2007 and July 5, 2007. On May 18, 2016, The Arizona Department of Environmental Quality submitted to EPA the Maricopa County SIP Revision Package: New Source Review Rules as a revision to the Arizona State Implementation Plan. The submission included amended Maricopa County Air Quality Rules 100, 200, 210, 220, 230, 240, 241,500, 510, 600 and Appendices D and E as revisions to the County's new source review program."

This SIP Revision is being submitted to the EPA for approval of final revisions to nine (9) ozone rules contained in the Arizona SIP for portions under the MCAQD; six (6) rules were revised to implement RACT for VOCs and three (3) rules were revised to implement RACT for NO_x. The rule revisions will replace existing approved SIP rules with requirements that are either as stringent as or more stringent than the existing approved SIP rules. The MCAQD is requesting that the EPA rescind (withdraw) from the Arizona SIP the existing approved versions of the MCAQD's rules and to approve into the Arizona SIP the revised and adopted versions of the MCAQD's rules – Rules 322, 323, 324, 336, 342, 350, 351, 352, and 353.

2.2(e) Modeling information required to support the proposed revision, including input data, output data, models used, justification of model selections, ambient monitoring data used, meteorological data used, justification for use of offsite data (where used), modes of models used, assumptions, and other information relevant to the determination of adequacy of the modeling analysis.

Modeling information is provided in the MAG 2017 Eight-Hour Ozone Moderate Area Plan. This SIP Revision is being submitted to the EPA for approval of final revisions to nine (9) ozone rules contained in the Arizona SIP for portions under the MCAQD; six (6) rules were revised to implement RACT for VOCs and three (3) rules were revised to implement RACT for NO_x. The rule revisions will replace existing approved SIP rules with requirements that are either as stringent as or more stringent than the existing approved SIP rules. The MCAQD is requesting that the EPA rescind (withdraw) from the Arizona SIP the existing approved versions of the MCAQD's rules and to approve into the Arizona SIP the revised and adopted versions of the MCAQD's rules – Rules 322, 323, 324, 336, 342, 350, 351, 352, and 353.

2.2(f) Evidence, where necessary, that emission limitations are based on continuous emission reduction technology.

See the Notices of Final Rulemaking in Appendix 2.

2.2(g) Evidence that the plan contains emission limitations, work practice standards and recordkeeping/reporting requirements, where necessary, to ensure

emission levels.

See the Notices of Final Rulemaking in Appendix 2.

2.2(h) Compliance/enforcement strategies, including how compliance will be determined in practice.

The MCAQD will determine compliance by conducting periodic inspections as is current practice. Enforcement of the revised rules will continue to occur through permit requirements and enforcement action per current department policies and procedures.

2.2(i) Special economic and technological justifications required by any applicable EPA policies, or an explanation of why such justifications are not necessary.

Per the MAG 2017 Eight-Hour Ozone Moderate Area Plan, "In accordance with Clean Air Act Section 172(c)(1), the MAG 2017 Eight-Hour Ozone Moderate Area Plan is required to provide for the implementation of all reasonably available control measures (RACM), including reasonably available control technology (RACT), as expeditiously as practicable to attain the National Ambient Air Quality Standards and to meet reasonable further progress requirements. The EPA final rule on the implementation of the 2008 ozone standard indicates that states should consider all available measures, including those being implemented in other areas, and that a state must adopt measures for an area only if those measures are economically and technologically feasible and will advance the attainment date or are necessary for reasonable further progress."

"Sections 182(b)(2) and 182(f) of the Clean Air Act require RACT to be implemented in ozone nonattainment areas classified as Moderate or higher. Additionally, 40 CFR Section 51.1112(a) requires the State to submit a SIP revision "that meets the VOC and NO_x RACT requirements in Clean Air Act Sections 182(b)(2) and 182(f)" for nonattainment areas classified as Moderate or higher. The RACT SIP revision for the Maricopa eight-hour ozone nonattainment area is required to be submitted to EPA by January 1, 2017, as stated in the EPA final rule reclassifying the Maricopa nonattainment area to a Moderate Area (81 FR 26697). The requirement to implement RACT in the Maricopa eight-hour ozone nonattainment area is separate and independent from the Clean Air Act Section 172(c)(1) requirement to adopt RACM necessary to meet reasonable further progress requirements and attain the 2008 ozone standard. Within the Maricopa nonattainment area, the MCAQD implements RACT for point and area sources." The MCAQD has prepared a RACT SIP (*See* Appendix 1)

Maricopa County
Air Quality Department

State Implementation Plan Revision For The Maricopa County Air Quality Department Ozone Rules Contained In The Arizona SIP December 5, 2016

APPENDIX 1: RACT SIP

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Maricopa County
Air Quality Department

Analysis Of Reasonably Available Control Technology For The 2008 8-Hour Ozone National Ambient Air Quality Standard (NAAQS) State Implementation Plan (RACT SIP)

December 5, 2016

Prepared By:
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The Clean Air Act Amendments (CAAA) of 1990 gives States primary responsibility for achieving the national ambient air quality standards (NAAQS). The NAAQS are established by the U.S. Environmental Protection Agency (EPA) as the maximum concentrations of specific air contaminants allowed in the atmosphere above which public health and welfare would not be protected.

The CAAA requires that States attain the NAAQS by specified dates based on the severity of an area's air quality problem. Maricopa County is designated as "moderate" nonattainment for the 2008 eight-hour ozone NAAQS (86 FR 26697, May 4, 2016). As a "moderate" nonattainment area, Maricopa County is required by the CAAA to attain the 2008 eight-hour ozone NAAQS by July 20, 2018.

The Maricopa Association of Governments (MAG) has prepared the MAG 2017 Eight-Hour Ozone Moderate Area Plan to meet the requirements of Section 182(b) of the Clean Air Act. Per the MAG 2017 Eight-Hour Ozone Moderate Area Plan, "The new MAG 2017 Eight-Hour Ozone Moderate Area Plan includes 93 existing and approved ozone control measures in the Maricopa nonattainment area from the EPA approved regional air quality plans and separate EPA actions. The overall approach taken in the plan is to demonstrate attainment with existing federal, state, and local ozone control measures. The implementation of existing ozone control measures in the Maricopa eight-hour ozone nonattainment area has already been effective in reducing ozone. These measures have allowed the area to attain and maintain both the one-hour ozone standard and the 1997 eight-hour ozone standard of 0.08 parts per million. The existing ozone control measures continue to have emission reduction benefits that provide for the attainment of the 2008 ozone standard in the 2017 ozone season prior to the July 20, 2018 attainment date. The emission reduction benefits of the existing measures also continue beyond the attainment year of 2017, providing the emissions reductions needed in 2018 to satisfy the contingency measure requirements of the Clean Air Act Section 172(c)(9)."

Within the Maricopa nonattainment area, the Maricopa County Air Quality Department (department) must implement reasonably available control technology (RACT) for (1) sources that are subject to Control Techniques Guidelines (CTGs) issued by the EPA, (2) major sources of volatile organic compounds (VOCs) (ozone precursors), and (3) all major stationary sources of nitrogen oxides (NO_x) (ozone precursors) that are located in the area.

RACT is the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility (44 FR 53762; September 17, 1979).

Control Techniques Guidelines (CTGs), issued by the EPA, are intended to provide States information that should assist them in determining RACT for source categories. In developing CTGs, the EPA evaluates sources of VOC emissions from source categories and the available control approaches for addressing those emissions, including the costs of such approaches. Based on available information and data, the EPA provides recommendations for determining RACT for the source categories. States can use the recommendations in the CTGs to inform their own determination as to what constitutes RACT in their particular areas. The guidance does not change or substitute for applicable sections of the CAAA or the EPA's regulation nor is it regulation. CTGs provide only recommendations for States to consider in determining RACT. States are free to implement other technically-sound approaches that are consistent with the CAAA and the EPA's implementing regulations.

Source categories for VOCs for which the EPA has issued CTGs include: solvent metal cleaning, perchloroethlene dry cleaning, large petroleum dry cleaning, metal furniture, magnet wire, large appliances, paper, can coating, metal coils, fabrics, miscellaneous metal parts, industrial adhesives, graphic arts, flexible package printing, cutback asphalt, wood furniture manufacturing, automobile and light-duty trucks, flatwood paneling, aerospace Most Achievable Control Technology (MACT), aerospace CTG & MACT, synthesized pharmaceutical products, gasoline bulk plants, fixed roof petroleum tanks, external floating roof petroleum tanks, gasoline loading terminals, gasoline tank trucks and vapor collection system leaks, service stations (Stage I vapor control systems), polymer manufacturing, synthetic organic chemical manufacturing

industry (SOCMI) and polymer manufacturing equipment leaks, miscellaneous refinery sources, leaks from petroleum refineries, rubber tire manufacturing, air oxidation processes (SOCMI), equipment leaks from natural gas/gasoline processing plants, reactor processes and distillation operations in SOCMI, surface coating at shipbuilding facilities, operations at shipbuilding facilities, and fiberglass boat manufacturing.

Major sources of VOCs (ozone precursors) in Maricopa County are listed below. "Major sources" are sources that emit or have the potential to emit 100 tons per year of VOC. The department requires such sources to implement RACT via the VOC rules that implement RACT.

- Arlington Valley LLC
- Gila River Power Station
- Luke Air Force Base
- Mesquite Power Operations LLC
- New Harquahala Generating Company
- New Wincup Holdings Inc
- Oak Canyon Manufacturing Inc
- Redhawk Generating Facility
- Rexam Beverage Can Company
- SFPP PL Phoenix Terminal
- Trendwood Inc

Major stationary sources of NO_x (ozone precursors) in Maricopa County are listed below. Major stationary sources are sources that emit or have the potential to emit 100 tons per year of NO_x. The department requires such sources to implement RACT via the NO_x rules that implement RACT.

- Arlington Valley LLC
- Gila River Power Station
- Luke Air Force Base
- Mesquite Power Operations LLC
- New Harquahala Generating Company
- Ocotillo Power Plant
- Redhawk Generating Facility
- Santan Generating Station
- SRP Kyrene Generating Station

As part of the Final Serious Area (1-Hour) Ozone State Implementation Plan For Maricopa County, December 2000, Maricopa County implemented RACT in the following Maricopa County Air Pollution Control Regulations:

- Rule 331: Solvent Cleaning
- Rule 333: Petroleum Solvent Dry Cleaning
- Rule 334: Rubber Sports Ball Manufacturing
- Rule 335: Architectural Coatings
- Rule 336: Surface Coating Operations
- Rule 337: Graphic Arts
- Rule 338: Semiconductor Manufacturing
- Rule 339: Vegetable Oil Extraction Processes
- Rule 340: Cutback & Emulsified Asphalt
- Rule 341: Metal Casting
- Rule 342: Coating Wood Furniture And Fixtures
- Rule 343: Commercial Bread Bakeries
- Rule 344: Automotive Windshield Washer Fluid
- Rule 346: Coating Wood Millwork
- Rule 347: Ferrous Sand Casting
- Rule 348: Aerospace Manufacturing And Rework Operations
- Rule 349: Pharmaceutical, Cosmetic, And Vitamin Manufacturing Operations

- Rule 350: Storage Of Organic Liquids At Bulk Plants And Bulk Terminals
- Rule 351: Loading Of Organic Liquids
- Rule 352: Gasoline Delivery Vessel Testing And Use
- Rule 353: Gasoline In Stationary Dispensing Tanks
- Rule 358: Polystyrene Foam Operations

The rules implemented RACT to reduce VOC emissions (ozone precursors) but did not implement RACT to reduce NO_x emissions (ozone precursors). Maricopa County had determined that NO_x reductions would not contribute to attainment of the 1-hour ozone NAAQS. The EPA granted a waiver (NO_x waiver) from the Clean Air Act Section 182(f) requirements for NO_x (60 FR 19510, April 19, 1995).

Because of the Maricopa nonattainment area, Maricopa County must ensure that the rules that implemented RACT in 2000 continue to implement RACT and that the NO_x rules implement RACT to reduce NO_x emissions (ozone precursors); the NO_x waiver granted by the EPA no longer applies. In addition, Maricopa County must ensure that the rules implement RACT for all major sources of VOC and NO_x.

In coordination with the EPA Region 9, the department conducted an analysis of CTG source categories with the Maricopa County Air Pollution Control Regulations that implemented RACT in 2000. The analysis compared CTGs' applicability thresholds and emissions limits with emissions limits in the VOC rules listed above. If the rules were not consistent with the CTGs, the department determined that the rule was not implementing RACT and therefore needed revision. See Appendices A and C. For non-CTG source categories, the department compared the rule requirements applicable to such source categories with relevant RACT guidance documents. See Appendix B.

Negative Declarations: In instances where either there were no sources in Maricopa County meeting a CTG source category or where the number of sources or the amount of emissions were de minimis, the department made a negative declaration regarding such CTG source category. See Appendix A.

The analysis showed that six (6) of the rules that implemented RACT in 2000 to reduce VOC emissions (ozone precursors) were not consistent with the CTGs. The department revised the following six (6) rules to implement RACT for VOCs:
- Rule 336: Surface Coating Operations
- Rule 342: Coating Wood Furniture And Fixtures
- Rule 350: Storage Of Organic Liquids At Bulk Plants And Bulk Terminals
- Rule 351: Loading Of Organic Liquids
- Rule 352: Gasoline Delivery Vessel Testing And Use
- Rule 353: Gasoline In Stationary Dispensing Tanks

The analysis also showed that three (3) rules needed to be revised to implement RACT to reduce NO_x emissions (ozone precursors). The department revised the following three (3) rules to implement RACT to NO_x:
- Rule 322: Power Plant Operations
- Rule 323: Fuel Burning Equipment From Industrial/Commercial/Institutional Sources
- Rule 324: Stationary Internal Combustion (IC) Engines

These rulemakings included twenty-one (21) stakeholder workshops and a 30-day comment period, which began on May 13, 2016 with the publication of the Notices of Proposed Rulemaking in the Arizona Administrative Register. A public hearing before the Maricopa County Board of Supervisors was conducted on November 2, 2016, at which the Maricopa County Board of Supervisors approved the revisions to the nine (9) rules.

This document (RACT SIP) will be submitted to the EPA (through the Arizona Department of Environmental Quality (ADEQ)).

CONCLUSION

Based on the analysis performed (described in this RACT SIP and in Appendices A, B, and C), the department finds that it has fulfilled the requirements of RACT, as applicable to the 2008 eight-hour ozone NAAQS for all CTG source categories and for all major sources of VOC and NO_x.

APPENDICES

Appendix A: RACT Analysis Of CTG Source Categories
Appendix B: RACT Analysis Of Non-CTG Source Categories
Appendix C: CTG-RACT Spreadsheet

Appendix A: RACT Analysis Of CTG Source Categories

Solvent Metal Cleaning
Rule 331 (Solvent Cleaning) limits VOC emissions from various cleaning operations.

There are two relevant CTG documents for Solvent Cleaning. The first document is "Control of Volatile Organic Emissions from Solvent Metal Cleaning" (EPA-450/2-77-022) ("1977 CTG document"); the second document is "Control Techniques Guidelines: Industrial Cleaning Solvents" (EPA-453/R-06-001) ("2006 CTG document").

Rule 331 was most recently revised on September 25, 2013 (to delete the definitions of "non-precursor organic compounds" and "volatile organic compounds") and the department determined that the rule implements RACT; this was confirmed through the comparison of Rule 331 with the 1977 and the 2006 CTG documents. The work practices required in Rule 331, e.g., minimizing air circulation around cleaning operations and properly disposing of VOC materials, correspond with the work practices discussed in the 1977 CTG document. The solvent handling requirements of the rule (Section 301) correspond with the work practices discussed in Section V.A.1 of the 2006 CTG document. The solvent specification requirement included in the rule (Section 304.1) exceeds the alternative composite vapor pressure limit from Section V.A.3 of the 2006 CTG document. Finally, the minimum control efficiencies of the emission control system included in the rule (Section 304.2 and Appendix IV.1) meet the control efficiencies discussed in Section V.A.2 of the 2006 CTG document.

Can Coating, Fabrics, And Miscellaneous Metal Parts
Rule 336 (Surface Coating Operations) was revised on November 2, 2016. The purpose of Rule 336 is to limit VOC emissions from various types of surface coating operations. Specific types of surface coating operations addressed under Rule 336 include: Metal Parts and Products; Can and Coil Coating; Plastic Parts and Products; Business Machine Coatings; Metal Furniture and Large Appliance Coatings; Paper, Film, and Foil Surface Coating; and Pleasure Craft Surface Coating.

The department revised Rule 336 to incorporate five (5) CTGs:
- "Control Techniques Guidelines For Metal Furniture Coatings" (EPA-453/R-07-005)
- "Control Techniques Guidelines For Large Appliance Coatings" (EPA-453/R-07-004)
- "Control Techniques Guidelines For Miscellaneous Metal And Plastic Parts Coatings" (EPA-453/R-08-003) ("2008 CTG document")
- "Control Techniques Guidelines For Paper, Film, And Foil Coatings" (EPA-453/R-07-003)
- "Control Techniques Guidelines: Industrial Cleaning Solvents" (EPA-453/R-06-001)

The revisions in Rule 336 also include raising the required emission control system (ECS) control efficiency to 90 percent (see Section 305.1); this revision meets the control efficiencies discussed in Section VI.C of the 2008 CTG document. The revisions in Rule 336 also include required work practices for handling, disposal, and storage of VOC-containing material (see Section 304) which are discussed in Section VI.D of the 2008 CTG document.

Other revisions include amending the VOC emission limits for surface coatings consistent with the above listed CTGs, deleting an exemption for the military, deleting the sprayless equipment exemption for vapor pressure limits, adding new work practices, clarifying existing work practices, streamlining recordkeeping provisions, and updating test methods. Review of the CTG requirements indicate that the revisions meet (or exceed) the federal CTG requirements and can be considered RACT for control of VOCs from surface coating operations.

Regarding pleasure craft surface coating, stakeholders commented that three pleasure craft VOC surface coating limits: Extreme High Gloss Coatings, Finish Primer/Surfacer; and Other Substrate Anti-Foulant Coating should be higher than the limits proposed in the CTG (Miscellaneous Metal and Plastic Parts Coatings, September, 2008). Stakeholders challenged these CTG recommended limits to EPA in 2010. EPA responded in a June 1, 2010 decision that clarified these suggested pleasure craft VOC surface coating thresholds were RACT recommendations provided in the CTG and should be "used by the states

to determine what constitutes RACT for VOC operations in their particular ozone nonattainment areas." The department reviewed both the stakeholders' recommendation and the EPA's decision and included the following VOC limits in Rule 336, Table 336-7:

Extreme High Gloss Topcoat	600 g VOC/l
Finish Primer Surfacer;	600 g VOC/l
Other Substrate Anti-Foulant Coating	400 g VOC/l

Graphic Arts

The purpose of Rule 337 (Graphic Arts) is to limit VOC emissions from the use of inks, coatings, adhesives, fountain solutions, and cleaning materials from graphic arts operations, including any digital, screen, gravure, letterpress, flexographic, and lithographic printing process.

There are three relevant CTG documents for Graphic Arts. The first document is "Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VIII: Graphic Arts – Rotogravure and Flexography" (EPA-450/2-78-033) ("1978 CTG document"); the second document is "Offset Lithography Printing" (EPA-453/R-94-054) ("1994 CTG document"); the third document is "Offset Lithographic Printing and Letterpress Printing" (EPA-453/R-06-002) ("2006 CTG document").

Rule 337 was most recently revised on August 17, 2011 and the department has determined that the rule implements RACT. This was confirmed through comparison of Rule 337 with the 2006 CTG document. The maximum fountain solution VOC contents included in the rule (Section 302.2) correspond with the fountain solution limits discussed in Section VI.B of the 2006 CTG document. The cleaning solution requirements included in the rule (Section 302.3) correspond with the cleaning material recommendations from Section VI.C of the 2006 CTG document. Finally, the minimum control efficiencies of the emission control system included in the rule (Section 302.4) meet the control efficiencies discussed in Section VI.A of the 2006 CTG document.

Wood Furniture Manufacturing

Rule 342 (Coating Wood Furniture and Fixtures) was revised on November 2, 2016. The purpose of Rule 342 is to limit the emissions of VOC from the surface preparation and coating of wood furniture and fixtures. The provisions of Rule 342 apply to any facility in Maricopa County that applies a VOC containing finishing material to furniture or fixtures made of wood or wood derived material. These wood products fall into the Standard Industrial Classification (SIC) code of 2434, 2511, 2512, 2515, 2517, 2519, 2521, 2531, or 2541. Rule 342 provides simplified provisions for facilities which agree to a permit limit of less than 10 tons (9.1 megagrams (Mg)) of VOC emissions per year and for sources emitting less than 2 tons (1.8 Mg) of VOC per year.

The relevant CTG for Rule 342 is "Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations" (EPA-453/R-96-007).

The rule revisions include adding leak detection and repair requirements, annual operator training requirements, and associated recordkeeping requirements. The VOC content limits in Rule 342 met the VOC content limits in the CTG; therefore, they were not changed.

Currently, there are 82 permits issued by Maricopa County Air Quality Department that include Rule 342 requirements. Three permits are Title V permits but not necessarily Title V for VOC emissions from wood finishing only. Fifteen permits are general woodworking permits. Sixty-four permits are Non-Title V permits; some may be "synthetic minor permits" meaning the facility has accepted an emissions limit below the Title V threshold. Wood finishing may not be the primary process for the Non-Title V permits.

The wood furniture industry in Maricopa County is composed of a diverse mix of cabinet shops and furniture companies, e.g., soft goods (sofas), case goods, spraying flatline, and knockdown or non-knockdown.

During stakeholder workshops held in August 2015, December 2015, and February 2016, it was noted that the climatic conditions in Maricopa County are different from other areas and product reformulations developed in these other locations may not be workable in Maricopa County. A particular example cited

was that South Coast Air Quality Management District (SCAQMD) Rule 1136 (Wood Products Coatings) has more stringent VOC limits than the CTG; however, use of coatings compliant with these lower VOC limits will adversely impact the final finish quality. The shops and manufacturers in Maricopa County do not operate in temperature and humidity controlled environments. In the hot, dry climate of Maricopa County, the shops and manufacturers use products that have a higher solids content, which slows-down the evaporation rate of coatings and finishes. In addition, EPA Staff (Stanley Tong e-mail dated November 19, 2015) have indicated that "…[the EPA] understands that high temperatures can cause the solvent to flash off too fast before the resin can form a proper film. [The EPA] is open to evaluate this as a reason for an alternative to the wood furniture CTG VOC limits, if [the department] can provide written documentation from a few coating manufacturers that their wood furniture coatings will not work at the temperatures typically found in the coating areas of [Maricopa County's] wood furniture manufacturing plant."

A review was conducted by Eastern Research Group, Inc. (ERG) to compare industry stakeholders' comments on what constitutes RACT for wood furniture coating operations as it relates to Rule 342. The industry stakeholders provided substantial analysis and comments on the achievability of the current VOC limits in Rule 342 and on the achievability of more stringent limits. The industry stakeholders' comments are summarized and addressed below. The effects of SCAQMD Rule 1136 on the wood furniture industry in that District were frequently cited by the stakeholders as an example of what could happen in Maricopa County under more stringent regulations.

The following table summarizes the VOC content limits from the CTG and Rule 342. Units are in kg VOC/kg solids (grams VOC/liter*).

Coating Category	CTG	Rule 342
Low VOC topcoats that are part of a sealer/topcoat system in which the sealer are not subject to a VOC limit	0.8	0.8 (360)
Clear Topcoats	N/A	N/A
Pigmented Topcoats	N/A	N/A
Sealers that are part of a sealer/topcoat system	1.9	1.9 (645)
Clear Sealers	N/A	N/A
Pigmented Primers, Sealers, & Undercoats	N/A	N/A
Topcoats that are part of a sealer/topcoat system	1.8	1.8 (635)
Strippable Booth Coating	N/A	0.8 (360)
Affected sources using acid-cured alkyd amino vinyl sealers or acid-cured alkyd amino conversion varnish topcoats:		
Acid-cured alkyd amino vinyl sealers	2.3	2.3 (680)
Acid-cured alkyd amino conversion varnish topcoats	2.0	2.0 (655)

* Less water and less non-precursor/exempt solvents

The stakeholders recommended that the VOC limits in Rule 342 for woodworking finishing materials should remain unchanged from the 1996 CTG.[1] In addition, stakeholders offered information on the current state of the wood furniture manufacturing industry in the United States in general, and the effect of different factors on the health of their industry, including the effects of foreign competition and the effects of regulation, in support of their recommendation.

The following sections summarize and offer an analysis of the issues raised by the stakeholders in the materials they provided to the department.

The following table lists the industry stakeholders and their affiliation, who provided comments:

[1] Support Documentation for the Maricopa County RACT Technical Feasibility Analysis. Prepared by Oak Canyon Manufacturing, Inc. June 23, 2016.

Commenter and Title	Affiliation
Ty Lorts, President	AF Lorts Manufacturing company, Inc.
David Darling, Senior Director, Environmental Affairs	American Coatings Association
Tim Dombrowski, Owner/President	Copperstate Cabinet Company, Inc.
Rick Schmidgall, President	Legends Furniture, Inc.
Butch Beinborn, Environmental Manager	Oak Canyon Manufacturing, Inc.
Leroy Zachek, President, and Windy Zachek, CEO	OakCraft Elegant Cabinetry, Inc.
Laurel Jamison, President/CEI	Rudd Company, Inc.
Brad Baldridge	The Sherwin-Williams Company
Barry Cupp, Director of Product Compliance Environmental, Health, Safety & Regulatory Affairs	The Sherwin-Williams Company
Dana L. Scarlatta, Senior Chemist	RPM Wood Finishes Group
Jason Rovig, General Manager	Trendwood, Inc.

Climate Differences Between Maricopa County And South Coast

The stakeholders commented that standards that have been adopted in the SCAQMD have had an adverse effect on the volume furniture industry in SCAQMD and are not applicable in Maricopa County, because Maricopa County is substantially hotter and drier than South Coast particularly in the summer time, and these climate differences exacerbate performance problems with low VOC coatings, especially as they relate to drying and curing of the coatings.

The following tables summarize the yearly mean and the summer (June and July 2016) mean NOAA meteorological data for Los Angeles, CA, and Phoenix, AZ (http://www.ncdc.noaa.gov/IPS/lcd/lcd.html).

Yearly Mean Data Element	Los Angeles, CA	Phoenix, AZ
Mean Daily Maximum Temperature (°F)	70.1	85.9
Normal Relative Humidity (%)	72	36
Normal Annual Precipitation (Inches)	12.82	8.03

Summer (June and July 2016) Mean Data Element	Los Angeles, CA	Phoenix, AZ
Mean Daily Maximum Temperature (°F)	75.3	107.9
Normal Relative Humidity (%)	58	13

Maricopa County summers are, on average, about 33°F warmer than South Coast during the warmest part of the day and has only about one-fourth the humidity of South Coast.

The Hot Dry Climate Of Maricopa County Complicates Low VOC Coating Formulation And Use

The stakeholders described that surface coatings contain a blend of solvents that are characterized as fast, medium, and slow evaporating solvents. The solvents are selected to control the flow of the coating during application and drying, to dissolve the resin in the coating being applied, and to promote adhesion between the different stages of the coating system (e.g., sealer, stain, and topcoat). (*See* letter from Dana Scarlata, Senior Chemist, RPM Wood Finishes Group, to Butch Beinborn, Oak Canyon Manufacturing, Inc. June 21, 2016.)

The stakeholders noted that the largest fraction of the solvent is the medium solvents, and these are often targeted for reduction in low VOC coatings, increasing the fractions of fast and slow solvents. This is particularly true if acetone is used as a non-VOC solvent in sealers and lacquers in place of MAK (methyl n-amyl ketone, CAS No. 110-43-0) and EEP (ethyl 3-ethoxypropionate, CAS No. 763-69-9). The increase in the fraction of fast solvents leads to application problems (e.g., dry spray and orange peel) that must be countered through an increase in the amount of slow solvents. However, the increase in the amount of slow solvents creates problems with the final curing of the finish such that it is not fully cured by the time the product must be packaged for shipping. The result, even after days of drying, is the products are susceptible

to "printing," which is the deformation of the cured finish from contact with the packaging when the product is wrapped and stacked for storage and shipping.

Oak Canyon Manufacturing has experienced this problem using coatings that are compliant with the current VOC limits (*see* letter from Ryan Heard, Quality Assurance Manager, Aspenhome Furniture Company, to Robert McMillan, President, Oak Canyon Manufacturing, Inc. August 20, 2015; and letter from Brad Baldbridge, The Sherwin-Williams Company, to Butch Beinborn, Environmental Manager, Oak Canyon Manufacturing, Inc., July 14, 2016).

Another problem with low-VOC coatings raised by stakeholders is "blushing", in which fast evaporating solvents cause the coated surface to cool, promoting the condensation of moisture and causing a white appearance in what should be a clear finish. (*See* letter from Dana Scarlata, Senior Chemist, RPM Wood Finishes Group, to Butch Beinborn, Oak Canyon Manufacturing, Inc. June 21, 2016.)

Other problems with low-VOC finishes in hot dry climates raised by stakeholders include "bubbling" of the finish as solvents are trapped in the rapidly drying finish and cannot escape. (*See* letter and photos from Tim Dombrowski, Copper State Cabinet Company, to Hether Krause, MCAQD, June 22, 2015).

Repair or replacement of products with defective finishes can represent a significant cost to facilities in terms of direct costs and in damage to their reputation and loss of future business, as documented by the stakeholders. One stakeholder reported that they invested significant resources (about $100,000) in equipment and materials to investigate water-based products, but the results were "disastrous" when used in the hot dry climate of the County. (*See* letter from Richard Schmidgall, Legends Furniture, to Phillip McNeely, MCAQD, June 20, 2016.) Brad Baldbridge, a Sherwin Williams technical representative who was assigned to Oak Canyon for 9 years, experienced these same types of problems during his time at Oak Canyon. He reported that in some cases, the temperature inside the factory can exceed 100 °F. He explained that periods of high temperature and high humidity combined with low VOC coatings caused problems with bubbling, orange peel, blushing, lack of film build, and printing. He also reported that these problems were compounded by the small footprint of the facility and the short dry time between coating steps, and the need to box and ship products as they come off the manufacturing line. He also noted that manufacturers of fully-assembled case good furniture like Oak Canyon cannot use the same flat-line automated conveyor coating machines and UV-cured coatings that can be used by manufacturers of kitchen cabinets and ready to assemble (RTA) furniture to comply with lower VOC emission limits.

It is likely that the problems stakeholders have observed so far will increase if coatings with even lower VOC contents are used in Maricopa County. The defects described by the stakeholders are consistent with defects described in standard texts on coatings technology.[2] The mechanisms that cause the defects observed by the stakeholders, such as rapid increases in surface tension in spray droplets and rapid increases in the viscosity of applied surface films, could be exacerbated through the use of lower-VOC/higher-solids coatings, or through the use of waterborne coatings. The use of water as a solvent in coatings is complicated by the fact that water evaporates quickly from thin films, relative to many organic solvents, and this characteristic is exacerbated in hot dry climates.

The stakeholders also stated that case good manufacturers cannot use UV-cured coatings used by kitchen cabinet manufacturers because the pieces that are coated have to be able to lay flat on a conveyor belt as they go through the coating process and the UV-curing oven. (*See for example*, R.C. Peters, Selecting the best finishing system; getting started with the right products and materials. FDM [Furniture Design and Manufacturing], December 2001. http://www.raymondnet.com/AGRCo-Articles/Articles/FDM%201201B.pdf)

Impacts On The Wood Furniture Industry From Past Regulations

[2] See, for example, Organic Coatings: Science and Technology, 2d Ed. Zeno W. Hicks, Jr., Frank N. Jones, and S. Peter Pappas. 1999. Chapter 24, Film Defects.

Stakeholders assert that past regulations, especially in the SCAQMD, have contributed to the dramatic decline in the domestic wood furniture industry and a shift to production in lower-cost countries with fewer regulations, particularly in China and Southeast Asia.

The stakeholders, particularly Oak Canyon Manufacturing, provides various California furniture company testimonial information (See Support Documentation for the Maricopa County RACT Technical Feasibility Analysis. Prepared by Oak Canyon Manufacturing, Inc. June 23, 2016. Table labeled "Furniture Companies which left California or went Out of Business" following page # 6) that regulations have caused a decline in domestic manufacturing and the loss of factories and jobs in the SCAQMD. They note that the domestic share of the wood household furniture market (separate from the kitchen cabinet market) has declined from 74 percent in 1997 to 18 percent in 2014.

The kitchen cabinet market, although subject to the same VOC limits as the wood household furniture market, has not been affected as drastically as the household furniture market by the effect of imports. The stakeholders stated that this is because cabinets are more often "custom" and "made to order" for individual retail customers, rather than the "made to stock" or "made to inventory" approach used by wood furniture manufacturers to meet orders from wholesalers, distributors, and retailers.

Wood Furniture Manufacturing Is A Small Percent Of The VOC Inventory

The stakeholders stated that wood furniture manufacturing is a tiny fraction (less than 0.3 percent) of the total VOC inventory for Maricopa County, and thus further regulation of VOC content limits on wood furniture coatings would have no measurable effect on ozone levels and the attainment status of the County.

Wood manufacturing is not indicated as a source of NO_x or CO emissions in either the point or area source emission inventories of ozone precursors. The stakeholders also note that the County has made considerable progress toward attainment of the ozone standard in the past decade under the current regulations, with a steady reduction in the number of exceedance days under both the previous and current ozone NAAQS.

The inventory of area sources lists wood furniture coatings as emitting 416.56 tpy of VOC (see Table 1.6-8 of the 2011 Ozone Precursor Emissions Inventory). The point sources of VOC are listed in Table 2.4-1 of the 2011 Inventory, and include Oak Canyon Manufacturing Inc. (62.86 tpy of VOC) and Trendwood, Inc. (128.59 tpy). The point and area sources together account for 608.01 tpy of VOC, which is still less than 0.4 percent of all VOC sources, and about 0.8 percent of just the anthropogenic (non-biogenic) VOC sources.

RACT Should Take Into Account Facility Specific Factors

The stakeholders, especially Oak Canyon Manufacturing, stated that the RACT determination should take into account facility-specific factors. The stakeholders note, as mentioned earlier, the differences in climate between Maricopa County, and other locations, which need to be taken into account in RACT determinations. (See Support Documentation for the Maricopa County RACT Technical Feasibility Analysis. Prepared by Oak Canyon Manufacturing, Inc. June 23, 2016. Relevant pages defining RACT as "the lowest emission limitation that a Particular Source is capable of meeting" in a document named: Federal Register Vol. 80 No. 44 following Page # 8)

The stakeholders also noted that differences among facilities should be taken into account in the RACT determination, such as differences in operating practices that may affect the feasibility of certain measures to reduce emissions. Oak Canyon Manufacturing, for example, cites the fact that they are a "just in time" manufacturing facility with a small facility footprint. Therefore, they do not have the time nor the space to allow for the extended drying and curing times that may be required for certain low-VOC coatings.

The stakeholders also stated that more stringent limits that are being applied in SCAQMD are considerably stricter than RACT and have therefore significantly reduced the number of volume wood furniture manufacturing facilities in SCAQMD. That is, the stakeholders stated that remaining facilities in SCAQMD are not representative of wood furniture manufacturing companies in the rest of the country because all of the large production manufacturing facilities have left the SCAQMD. The stakeholders also note that the

EPA has not revised the wood furniture manufacturing CTG in response to more stringent VOC limits in SCAQMD, and has previously declared that Rule 342 has no RACT deficiencies related to the VOC limits.

The stakeholders stated that, given the problems that facilities in Maricopa County have already experienced in complying with the VOC limits currently based on the CTG, the department should also consider limits that are *less* stringent than the CTG as RACT. The stakeholders stated that this would be consistent with the EPA's statements that the CTG is guidance and that RACT should be determined on a case-by-case basis. However, the stakeholders did not propose any specific limits that should be considered as alternatives to those in effect or presented in the CTG.

Given the documentation provided by the stakeholders and coatings manufacturers (American Coatings Association, RPM Wood Finishes Group, Rudd Company, Inc., Sherwin-Williams Co.), the EPA Staff comments dated November 19, 2015, and the revisions made to Rule 342, which include additional work practice standards for training and leak detection, the department has determined that the rule implements RACT.

Gasoline Bulk Plants, Fixed Roof Petroleum Tanks, External Floating Roof Petroleum Tanks, And Gasoline Loading Terminals

Rule 350 (Storage and Transfer of Organic Liquids (Non-Gasoline) at an Organic Liquid Distribution Facility) was revised on November 2, 2016. The purpose of Rule 350 is to limit emissions of VOCs from organic liquids (non-gasoline) under actual storage and transfer conditions at an organic liquid distribution facility.

There are two relevant CTG documents for Rule 350. The first CTG document is "Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed Roof Tanks" (EPA-450/2-77-036). The second CTG document is "Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks" (EPA-450/2-78-047).

Rule 351 (Storage and Loading of Gasoline at Bulk Gasoline Plants and Bulk Gasoline Terminals) was revised on November 2, 2016. The purpose of Rule 351 is to limit emissions of VOCs emitted during the storage and loading of gasoline at bulk gasoline plants and bulk gasoline terminals under actual storage and loading conditions.

There are two relevant CTG documents for Rule 351. The first CTG document is "Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals" (EPA-450/2-77-026). The second CTG document is "Control of Volatile Organic Emissions from Bulk Gasoline Plants" (EPA-450/2-77-035).

Rule revisions for Rule 350 and Rule 351 include the distinct separation of gasoline from the organic liquids (non-gasoline) storage requirements. The rule revisions combine the gasoline storage requirements from Rule 350 and the gasoline loading requirements from Rule 351 into Rule 351. The department renamed both Rules 350 and 351 to reflect this structural revision.

The revisions also include addition of definitions and terms specific to the gasoline industry, deletion of definitions and terms specific to the organic liquid (non-gasoline) industry, specification of regulatory requirements for transferring organic liquid, addition of a monthly equipment leak inspection requirement, and addition of optical gas imaging as an alternative work practice to monitor and identify leaking equipment.

In order to meet current RACT, Rule 350 was revised to lower the rule applicability from organic liquids with a true vapor pressure of 1.5 psia to organic liquids with a true vapor pressure of 0.5 psia. The rule revisions also include additional definitions and terms specific to the organic liquid industry, delete definitions and terms specific to the gasoline industry, specify regulatory requirements for transferring organic liquid, add a monthly equipment leak inspection requirement, and add optical gas imaging as an alternative work practice to monitor and identify leaking equipment.

In addition, in Rule 351 the department moved Section 403 (Performance Testing) to new Section 501.4 (Determining Vapor Tight Status-Gasoline Cargo Tank Loading Pressure) and changed the requirement for

recording pressure every one (1) minute while a gasoline cargo tank is being loaded during performance testing to every five (5) minutes. The five (5) minute requirement is consistent with 40 CFR Subpart XX, Section 60.503(d)(2). The department discussed the comment with stakeholders, Kinder Morgan/SFPP, and the EPA and reviewed the federal requirements. Kinder Morgan/SFPP stated that the back pressure is continuously monitored by the source test contractor while a gasoline truck is being loaded during performance testing and that the instantaneous reading at the five (5)-minute mark and the maximum instantaneous reading during the last five (5) minutes are recorded. The federal requirements (40 CFR Subpart XX Section 60.503(d)(2)) state that during the performance test, the pressure shall be recorded every five (5) minutes while a gasoline truck is being loaded and the highest instantaneous pressure that occurs during each loading shall be recorded. After considering the comments, reviewing the federal requirements, and reviewing the text in Rule 351, the department changed the requirement for recording pressure every one (1) minute while a gasoline cargo tank is being loaded during performance testing to every five (5) minutes to be consistent with the federal requirement in 40 CFR Subpart XX, Section 60.503(d)(2). With this change, the department has determined that Rule 351 is no less stringent than the SIP-approved rule.

Rules 350 and 351 are not new rules but include revisions that improve the clarity and enforceability of the existing regulatory requirements for the organic liquid (non-gasoline) and gasoline industry. Review of the CTG requirements indicate that the revisions meet (or exceed) the federal CTG requirements and can be considered RACT for control of VOCs from storage and loading of gasoline at bulk gasoline and bulk gasoline terminals.

Gasoline Tank Trucks And Vapor Collection System Leaks
Rule 352 (Gasoline Cargo Tank Testing and Use) was revised on November 2, 2016. The purpose of Rule 352 is to limit the emission of VOCs from gasoline delivery vessels and applies to any gasoline delivery vessel used to receive or deliver gasoline within Maricopa County. Rule 352 also applies to all persons who own, operate, maintain, repair or test the delivery vessel.

The relevant CTG for Rule 352 is “Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems” (EPA-450-2-78-051).

The rule revisions update the rule to use current industry language; update test methods; clarify the loading requirements for bulk terminals, bulk plants and gasoline dispensing facilities; increase the amount of notification time in advance of cargo tank testing; and add optical gas imaging as an alternative work practice to monitor and identify leaking equipment.

The department previously found that Rule 352 met the RACT requirements. Since that time, RACT requirements for gasoline cargo tank testing and use have not changed. Rule 352 continues to meet the RACT requirements as applied to the gasoline tank trucks for vapor/leak tightness testing, monitoring, local agency certification and decal requirements.

Gasoline Service Stations – Stage I
Rule 353 (Storage and Loading of Gasoline at Gasoline Dispensing Facilities) was revised on November 2, 2016. The purpose of Rule 353 is to limit VOC emissions from gasoline during storage and loading of gasoline at gasoline dispensing facilities.

The relevant CTG for Rule 353 is “Design Criteria for Stage I Vapor Control Systems – Gasoline Service Stations” (EPA-450/R-75-102).

The rule revisions make Rule 353 consistent with current gasoline industry terms and definitions; clarify the storage and loading requirements of an underground storage tank and an above ground storage tank; update test methods to be consistent with state and federal test methods; and clarify the inspection requirement for gasoline dispensing facilities that receive gasoline less than once per week.

The department previously found that Rule 353 met the RACT requirements. Since that time, RACT requirements for Stage I gasoline dispensing at service stations have not changed. The current revisions

included limited changes for consistency, clarifications, and updating of test methods. Rule 353 continues to meet the RACT requirements for control of VOCs associated with Stage I loading of gasoline at gasoline dispensing facilities.

For stationary gasoline dispensing tanks for farm operations, the department retained the exemption. Based upon information provided by the Arizona Farm Bureau, annual gasoline throughput has been estimated to be approximately 180,000 gallons per year (i.e., 150 250-gallon tanks with 100 gallons per month throughput). A loading loss emission factor of 0.909 lbs VOC/1000 gallons was calculated using the equation provided in Section 5.2.2.1.1 of AP-42. In addition, a breathing and emptying emission factor of 1.0 lbs VOC/1000 gallons was obtained from Table 5.2-7 of AP-42. Combining these two emission factors with the annual gasoline throughput of the agricultural tanks results in annual VOC emissions of 344 lbs/year (or 0.172 tons/year). These data are included in a spreadsheet dated July 3, 2016 named "AST fuel estimates.xlsx". The spreadsheet also includes emissions for displacement and spillage; these are Stage II emission sources which are not covered under Rule 353. Also, the 2014 National Emissions Inventory (NEI) emissions used for comparison only included Stage I emission sources. Therefore, the displacement and spillage emissions were excluded from this analysis. For comparison purposes, the Maricopa County gasoline station VOC emissions (i.e., total Stage I and tank breathing and emptying) are 1,781.6 tons in the 2014 National Emissions Inventory (NEI). Thus, the VOC emissions from the agricultural gasoline tanks are less than 0.01 percent of the VOC emissions from gasoline stations. Compared to the gasoline station (and overall inventory) VOC emissions, VOC emissions from the agricultural gasoline tanks are negligible. The VOC emissions from the agricultural gasoline tanks are 0.0005% of the annual VOC emissions for all area sources in Maricopa County per the draft 2014 Periodic Emissions Inventory For Ozone Precursors.

Negative Declarations

The department has determined that there are no emitting facilities in the county for the following CTG source categories. Thus, there is a negative declaration for these CTG source categories.

Source Category	CTG Document Title	Document Number and Date
Automobiles and Light-Duty Trucks[a]	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks	EPA-450/2-77-008 (May 1977)
	Control Techniques Guidelines for Automobile and Light-Duty Truck Assembly Coatings	EPA-453/R-08-006 (September 2008)
Cutback Asphalt	Control of Volatile Organic Compounds from Use of Cutback Asphalt	EPA-450/2-77-037 (December 1977)
Flat Wood Paneling	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VII: Factory Surface Coating of Flat Wood Paneling	EPA-450/2-78-032 (June 1978)
	Control Techniques Guidelines for Flat Wood Paneling Coatings	EPA-453/R-06-004 (September 2006)
Flexible Packaging Printing	Control Techniques Guidelines for Flexible Package Printing	EPA-453/R-06-003 (September 2006)
Magnet Wire Insulation	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume IV: Surface Coating of Insulation of Magnetic Wire	EPA-450/2-77-033 (December 1977)
Natural Gas/Gasoline Processing Plants	Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants Control Techniques Guidelines for the Oil and Natural Gas Industry	EPA-450/3-83-007 (December 1983) EPA 453/B-16-001 (October 2016)

Source Category	CTG Document Title	Document Number and Date
Fiberglass Boat Manufacturing	Control Techniques Guidelines for Fiberglass Boat Manufacturing Materials	EPA-453/R-08-004 (September 2008)
Petroleum Refineries	Control of Refinery Vacuum Producing Systems, Wastewater Separators and Process Unit Turnarounds	EPA-450/2-77-025 (October 1977)
	Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment	EPA-450/2-78-036 (June 1978)
Polymer Manufacturing[b]	Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	EPA-450/3-83-008 (November 1983)
	Control of Volatile Organic Compound Leaks from Synthetic Organic Chemical and Polymer Manufacturing Equipment	EPA-450/3-83-006 (March 1984)
Rubber Tire Manufacturing	Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires	EPA-450/2-78-030 (December 1978)
Shipbuilding	Alternative Control Techniques Document: Surface Coating Operations at Shipbuilding and Ship Repair Facilities	EPA-453/R-94-032 (April 1994)
	Control Techniques Guidelines for Shipbuilding and Ship Repair Operations (Surface Coating)	61 FR-44050 (August 27, 1996)
Synthetic Organic Chemical Manufacturing	Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry	EPA-450/3-84-015 (December 1984)
	Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations Processes in the Synthetic Organic Chemical Manufacturing Industry	EPA-450/4-91-031 (August 1993)

[a]The CTG documents for Automobile and Light-Duty Trucks only cover new automobiles/trucks and parts on assembly lines; auto refinishing (i.e., body shops and collision repair) are not covered by a CTG. Rule 345 (Vehicle and Mobile Equipment Coating) applies to refinishing only.

[b]The CTG documents for Polymer Manufacturing only cover the manufacture of the polymer resins; product fabrication and formation are not covered by a CTG. Rule 358 (Polystyrene Foam Operations) applies only to facilities that expand, age, or mold expandable polystyrene.

The department has also determined that there are no emitting facilities that exceed the CTG applicability threshold in the county for the following CTG source categories. Thus, there is a negative declaration for these CTG source categories.

Source Category	Applicability Threshold	CTG Document Title	Document Number and Date
Aerospace	25 tons/year	National Emission Standards for Hazardous Air Pollutants for Sources Categories: Aerospace Manufacturing and Rework	59 FR-29216 (June 6, 1994)
	25 tons/year	Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations	EPA-453/R-97-004 (December 1997)
Industrial Adhesives	15 lb/day or 3 tons/rolling 12 month	Control Techniques Guidelines for Miscellaneous Industrial Adhesives	EPA-453/R-08-005 (September 2008)

Source Category	Applicability Threshold	CTG Document Title	Document Number and Date
Large Appliances[a]	None	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume V: Surface Coating of Large Appliances	EPA-450/2-77-034 (December 1977)
	15 lbs/day OR 3 tons/rolling 12 months	Control Techniques Guidelines for Large Appliance Coatings	EPA-453/R-07-004 (September 2007)
Large Petroleum Dry Cleaners	123,000 liters (32,500 gallons) petroleum solvent/ year	Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners	EPA-450/3-82-009 (September 1982)
Metal Coils[a]	15 lbs/day	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks	EPA-450/2-77-008 (May 1977)
Metal Furniture[a]	None	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume III: Surface Coating of Metal Furniture	EPA-450/2-77-032 (December 1977)
	15 lbs/day OR 3 tons/rolling 12 months	Control Techniques Guidelines for Metal Furniture Coatings	EPA-453/R-07-005 (September 2007)
Paper[a]	None	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks	EPA-450/2-77-008 (May 1977)
	15 lbs/day OR 3 tons/rolling 12 months actual; 25 tons/year potential to emit per coating line	Control Techniques Guidelines for Paper, Film, and Foil Coatings	EPA-453/R-07-003 (September 2007)
Synthesized Pharmaceutical Products	15 lbs/day for each vent from reactors, distillation operations, crystallizers, centrifuges, and vacuum dryers	Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products	EPA-450/2-78-029 (December 1978)

[a]Although there are no stationary sources or emitting facilities that exceed the CTG applicability threshold for these CTG categories, the department revised Rule 336 (Surface Coating Operations), which is the applicable rule for these categories.

In addition, the CTG for perchloroethylene dry cleaning systems is also not relevant due to the delisting of perchloroethylene as a VOC effective March 8, 1996 (61 FR 4588; February 7, 1996).

Appendix B: RACT Analysis Of Non-CTG Source Categories

Electric Utility Boilers

Rule 322 (Power Plant Operations) was revised on November 2, 2016. The purpose of Rule 322 is to limit the discharge of nitrogen oxides (NO_x), sulfur oxides (SO_x), particulate matter (PM) and carbon monoxide (CO) emissions into the atmosphere from stationary fossil-fuel-fired equipment at electric utility stationary gas turbines, electric utility steam generating units or cogeneration steam generating units.

The NO_x limitation when burning gaseous fossil was changed from "155 ppm" to "42 ppmdv". The EPA advised the department that this limitation is considered RACT for NO_x; this limitation is similar to limits in Imperial County's (CA) RACT SIP for the 1997 ozone standard for turbines (Rule 400.1 adopted 2010).

The NO_x limitation when burning liquid fossil fuel was changed from "230 ppm" to "65 ppmdv". The EPA advised the department that this limitation is considered RACT for NO_x; this limitation is similar to limits in Imperial County's (CA) RACT SIP for the 1997 ozone standard for turbines (Rule 400.1 adopted 2010).

In addition, the revisions to Rule 322 remove the exemption of equipment for which construction commenced after May 10, 1996. Rule 322 applies to all equipment listed in Section 102, regardless of when it was constructed. Moreover, Rule 322 includes new Section 102.4, a provision that states that facilities subject to Rule 322 may be subject to New Source Performance Standards (NSPS) and/or National Emission Standards for Hazardous Air Pollutants (NESHAP).

Understanding that this rule applies to many different types of units, operated differently, the department revised the rule to allow affected sources to submit a case-by-case RACT analysis for NO_x.

At the department's request, a review was conducted by Eastern Research Group, Inc. (ERG) of the RTP Environmental Associates, Inc. document entitled "Reasonably Available Control Technology Evaluation For Natural Gas Fired Power Plants for Proposed Revisions to Rule 322" (the "RTP Report"), which was submitted to the Maricopa County Air Quality Department (department) by Arizona Public Service (APS) and Salt River Project (SRP) in March of 2016.

The RTP Report was a preliminary assessment and RACT analysis related to five power plants. It was intended to inform the department on the potential options available for regulated equipment to meet the new RACT standards and on the RACT process including cost effectiveness of various control options.

The RTP Report used the best information available to characterize actual NO_x emissions for the equipment subject to Rule 322. Most of these units were first put in service duirng the 1970s, and for some of them no site specific performance test data or manufacturers guarantee is available. The table below lists the emission/emission factor source cited by the RTP Report for the baseline actual emissions estimates for each unit.

Owner/Operator	Facility	Subject Units	Emission Data Source	Permit NO_x Limit
APS	West Phoenix Power Plant	2 CC Turbines 85 MW each	August 2015 NO_x Stack Test	155 ppmv
		2 SC Turbines 55 MW each	AP-42 Chapter 3.1 Stationary Gas Turbines[a]	155 ppmv
APS	Ocotillo Power Plant	2 SC Turbines 55 MW each	AP-42 Chapter 3.1 Stationary Gas Turbines[a]	
		2 Gas Fired Boilers 110 MW each	2014 CEMS Data Reported To CAMD	
SRP	Santan Generating Station	4 CC Turbines 90 MW each	Annual Average CEMS Data	155 ppmv

Owner/Operator	Facility	Subject Units	Emission Data Source	Permit NO_x Limit
SRP	Agua Fria Generating Station	3 SC Turbines 90 MW each	AP-42 Chapter 3.1 Stationary Gas Turbines[a]	[illegible]
		2 Gas Fired Boilers 114 MW each	2014 CEMS Data Reported To CAMD	[illegible]
		1 Gas Fired Boiler 163 MW	Annual Average CEMS Data	[illegible]
SRP	Kyrene Generating Station	3 SC Turbines 53.1, 60, 60 MW	AP-42 Chapter 3.1 Stationary Gas Turbines[a]	[illegible][b]
		2 Gas Fired Boilers 34.5 And 73.5 MW	No CEMS Data Used The Same Emission Rate As Agua Fria	[illegible]

Footnotes:
(a) AP-42, Chapter 3.1, Stationary Gas Turbines, Table 3.1-1 (Uncontrolled NO_x For Natural Gas Fired Turbine)
(b) The air permit includes a NO_x emission factor for each of these three (3) turbines of 336 lb/MMscf. The permit also limits plant-wide annual NO_x emissions to 158 tons.

ERG's review included the consideration of the available technologies, technical feasibility, and control effectiveness presented in the RACT analysis. The review has been conducted in accordance with state and federal rules and the conventional "Top-Down" process. The steps required for conducting a top-down analysis are: (1) identify all potentially available control options, (2) eliminate technically infeasible control options, (3) rank remaining control technologies by control effectiveness, (4) evaluate the most effective controls and document the results as necessary, and (5) select RACT.

The RTP Report is a preliminary assessment setting forth potential options available for select regulated equipment to meet the new RACT standards. Submittal of the RTP Report does not require the affected source to utilize the conclusions or case-by-case RACT determination set forth in the RTP Report. ERG substantiated the conclusions in the RTP Report.

Cost Effective Technologies Discussion

In a 1994 memorandum to Regional Directors, the EPA provides guidance on determining NO_x RACT, noting specifically that cost effectiveness of NO_x technologies should cost less than $1,300 per ton of NO_x removed. Escalated to 2015, using the Consumer Price Index (CPI) data from the U.S. Bureau of Labor Statistics, the cost effectiveness threshold will be $2,067 per ton of NO_x removed. For this analysis a rounded-up threshold of $2,100 per ton of NO_x removed was used. Costs above the $2,100 per ton were considered in the RTP Report to be cost prohibitive. ERG reviewed the methodology that resulted in this threshold and agreed that $2,100 per ton is an appropriate threshold.

The RTP Report calculated all control costs using the methodology described in Section 6, Chapter 1 of the "EPA Air Pollution Control Cost Manual, Sixth Edition" (EPA 452-02-001). Direct capital costs were based on the:

1. EPA's Alternative Control Techniques (ATC) Document - NOx Emissions from Stationary Gas Turbines (EPA-453/R-93-007);
2. Cost Analysis of NOx Control Alternatives for Stationary Gas Turbines which was prepared for the U.S. Department of Energy;
3. 2011 Sargent & Lundy LLC – Santan Emissions Assessment Report;
4. EPA's ATC document NOx Emissions from Utility Boilers (EPA-453/R-94-023);
5. EPA's ATC document NOx Emissions from Industrial/Commercial/Institutional Boilers (ICI) (EPA-453/R-94-022); and
6. EPA's OAQPS Control Cost Manual (EPA-452/B-02-001).

Total capital investment costs for each affected unit were annualized based on an interest rate of 7 percent and an equipment life of 20 years.

RACT Findings

The table below presents the RACT findings, which are estimates only and are not to be used to establish regulatory thresholds or permitting limits. For purposes of RACT, no additional controls would be required for the affected units if they operate less than the hours of operation indicated in the table from the RTP Report. All calculations were verified by ERG.

The cost effectiveness for all of the affected units at all of the facilities, when operated below the hours per year indicated in the table below, exceed the EPA guidance for RACT cost effectiveness of $2,100/ton. It should be noted that APS and SRP have indicated that recordkeeping associated with the limited use restrictions would not increase costs for the units subject to Rule 322, because their current Title V permits already include similar requirements.

Owner/Operator	Facility	Affected Units	Operation Hrs/Yr	Good Combustion Practices In The Permit	Estimated Emissions Tons/Yr If Affected Source Accepts Hrs/Yr Restrictions
APS	West Phoenix Power Plant	2 CC Turbines 85 MW each	3,500	Yes	401[b]
		2 SC Turbines 55 MW each	2,000	Yes	293[b]
APS	Ocotillo Power Plant	2 SC Turbines 55 MW each	2,000	Yes	293[b]
		2 Gas Fired Boilers 110 MW each	8,000	Yes	702[b]
SRP	Santan Generating Station	4 CC Turbines 90 MW each	8,000	Yes	262[b]
SRP	Agua Fria Generating Station[a]	3 SC Turbines 90 MW each[c]	2,400	Yes	434[b]
		2 Gas Fired Boilers 114 MW each	8,000	Yes	1,253[b]
		1 Gas Fired Boiler 163 MW	6,000	Yes	1,995
SRP	Kyrene Generating Station	1 SC Turbine 53.1 MW	2,000	No	283
		2 SC Turbines 60 MW each	3,000	No	331[b]
		1 Gas Fired Boiler	8,000	No	379

Owner/Operator	Facility	Affected Units	Operation Hrs/Yr	Good Combustion Practices In The Permit	Estimated Emissions Tons/Yr If Affected Source Accepts Hrs/Yr Restrictions
		34.5 MW			
		1 Gas Fired Boiler 73.5 MW	8,000	No	808
Total		**6 C C Turbines**			**1,852**
		10 SC Turbines			**3,377**
		7 Gas Fired Boilers			**7,092**

Footnotes:
(a) During normal operations, these units combust natural gas only with some having the capacity to burn fuel oil as back-up. NO_x emissions from only natural gas combustion is evaluated for purposes of establishing RACT.
(b) Emission totals are for each RACT unit.
(c) Two of the turbines are 85 MW. The applicant conservatively assumed all three to be the same size.

Given the documentation provided by the stakeholders and the revisions made to Rule 322, which include changing the NOx limitations, changing the applicability to apply to all equipment listed in Section 102 regardless of when the equipment was constructed, clarifying the good combustion practices for turbines and the operation and maintenance plan requirements, the department has determined that the rule implements RACT.

Boilers Used In Industrial Facilities, Process Heaters, And Stationary Gas Turbines
Rule 323 (Fuel Burning Equipment From Industrial/Commercial/Institutional (ICI) Sources) was revised on November 2, 2016. The purpose of Rule 323 is to limit the discharge of nitrogen oxides (NO_x), sulfur oxides (SO_x), particulate matter (PM), and carbon monoxide (CO) emissions into the atmosphere from fuel burning combustion equipment at industrial, commercial, and institutional (ICI) sources.

The NO_x limitation when burning gaseous fossil fuel was changed from “155 ppm” to “42 ppmdv”. The EPA advised the department that this limitation is considered RACT for NO_x; this limitation is similar to limits in Imperial County’s (CA) RACT SIP for the 1997 ozone standard for turbines (Rule 400.1 adopted 2010).

The NO_x limitation when burning liquid fossil fuel was changed from “230 ppm” to “65 ppmdv”. The EPA advised the department that this limitation is considered RACT for NO_x; this limitation is similar to limits in Imperial County’s (CA) RACT SIP for the 1997 ozone standard for turbines (Rule 400.1 adopted 2010).

The revisions also include clarifications regarding exemptions and limitations, e.g., add the definition of “steady state” and revise the definition of “waste derived fuel gas”. In addition, the revisions also include changes associated with various administrative requirements and compliance determinations. Given the revisions made to Rule 323, the department has determined that the rule implements RACT.

Stationary Reciprocating Internal Combustion (IC) Engines
Rule 324 (Stationary Internal Combustion (IC) Engines) was revised on November 2, 2016. The purpose of Rule 324 is to limit the discharge of 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).

The requirements in Rule 324 harmonize with New Source Performance Standards (NSPS) IIII, and JJJJ, and Most Achievable Control Technology (MACT) ZZZZ. The definitions of "existing engine" and "new engine" were deleted from Rule 324; the terms are not used in the rule. Rule 324 refers to the dates before and after which NSPS were promulgated. Rule 324 applies to spark-ignition engines and compression-ignition engines with a rated brake horsepower of greater than 250 and to any stationary reciprocating internal combustion engine subject to the federal standards of performance set forth in 40 CFR 60, Subpart IIII for compression-ignition engines or 40 CFR 60, Subpart JJJJ for spark-ignition engines.

Rule 324 clarifies the two options that non-emergency engines have for complying with Rule 324. A source can comply with the current emission limitations or the federal standards of performance for non-emergency engines. The current emission limits in Rule 324 have been retained; such limits apply to:

- Engines manufactured prior to October 22, 2003 (the date when Rule 324 was adopted)
- Engines manufactured on or after October 22, 2003 but prior to July 11, 2005 (the date the New Source Performance Standards were adopted for compression-ignition engines)
- Engines manufactured on or after October 22, 2003 but prior to June 12, 2006 (the date the New Source Performance Standards were adopted for spark-ignition engines).

Rule revisions include a requirement that spark-ignition engines manufactured after June 12, 2006 and compression-ignition engines manufactured after July 11, 2005 comply with federal standards of performance. Rule revisions also include clarifications regarding applicability, limitations, exemptions, definitions, and changes associated with various administrative requirements and compliance determinations.

A review was conducted by Eastern Research Group, Inc. (ERG) to compare the emissions limits in Rule 324 to other similar rules in other similar jurisdictions, as well as national standards and data sources. ERG reviewed and compared State Implementation Plan (SIP) rules for IC engines in several areas of California to the NSPS Subparts IIII and JJJJ limits incorporated under revised Rule 324. Specifically, IC engine rules for these areas were reviewed: Placer County Air Pollution Control District, Sacramento Metropolitan Air Quality Management District, Ventura County Air Pollution Control District, and South Coast Air Quality Management District. In addition, ERG searched the RACT/BACT/LAER Clearinghouse (RBLC) to locate applicable control technologies. ERG's search of the RBLC specified processes in the Internal Combustion Engines categories, including Large Internal Combustion Engines greater than 500 horsepower (hp) (all fuel types) and Small Internal Combustion Engines less than 500 hp (all fuel types), with permits dating back to 2000. The search results included the following data fields: RBLC ID, facility name and state, permit date, process name, throughput, pollutant, control technology, and percent efficiency of control. Based on searches conducted for facilities in the IC engine category, ERG found 283 recent RACT, BACT, and LAER decisions for CO, NO_x, and VOC emissions that had sufficient information to be included in this analysis. While the initial RBLC query returned thousands of records, RBLC records were only used if the engine size could be determined and if the emission limits were in units of (g/HP-hr). The majority of the RBLC determinations represent PSD-BACT determinations and some represent LAER determinations.

The engine rules in NSPS Subparts IIII and JJJJ are complex and provide numerous subcategories of engines subject to different emission limits. However, the NSPS rules are generally consistent with both the California SIP rules and recent RBLC determinations, with the exception of the SIP rules for the Los Angeles nonattainment area. The Los Angeles area of California has been classified as being in serious, severe, and extreme nonattainment with the 2008 8-hour ozone standard. Therefore, because these areas have worse nonattainment classifications as compared to Maricopa County, it is expected that their IC engine limits would be more restrictive than for a moderate nonattainment area such as Maricopa County.

The RBLC results represent 283 records that had sufficient information to be useful for comparison. Of the 283 records evaluated, 10 were for smaller compression-ignition engines (less than 250 hp). The NO_x and CO limits for these smaller engines are lower than the corresponding NSPS Subpart IIII limits for larger engines (greater than 250 hp), while the VOC limits are higher. For the larger engines, the NSPS limits fell within the range of the RBLC limits for most pollutants and engine types, the only exception being VOC limits for spark-ignition engines manufactured between July 1, 2008 and January 1, 2011. A comparison of

the emission limits in revised Rule 324 and NSPS Subparts IIII and JJJJ with the range of limits found in RBLC and the California SIP rules shows that the emission limits in revised Rule 324 are within the range of values found in the RBLC and as required under the California SIP rules. Given the revisions made to Rule 324, the department has determined that the rule implements RACT.

Appendix C: CTG RACT Spreadsheet

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
Solvent Metal Cleaning	8 Codes: 25, 33-39	080101, 080102, 080103	(a) In urban nonattainment areas, open top vapor degreasers with an open area of less than 1 m2 from equipment standards (Ref. 12,p. 7-4) and conveyorized degreasers with less than 2.0 m2 of air/vapor Interface from requirement of a major control device (e.g., carbon adsorber)(Ref. 12, p.3-34).	No size cutoffs from operational standards	EPA-450/2-77-022	Control of Volatile Organic Emissions from Solvent Metal Cleaning (PDF 229 pp, 7.0MB)	1. Work Practices: closed containers, minimizing air circulation around cleaning operations, proper disposal of VOC materials, implementing practices that minimize emissions	331	04/21/2004	Rule 200 requires a permit if unheated, non-conveyorized solvent cleaning or coating equipment, without control enclosure, has: (a) An open surface area of >1 m^2 (10.8 ft^2), internal volume of >350 l (92.5 gal), and uses more than 3 gal/day of organic solvent. (b) Uses organic solvents with boiling point <302°F (150°C) with solvent loss >3 gal/day. (c) Uses materials with VOC content >2% by volume (20 cc/l). Rule 200 in general also requires a permit for any source emitting more than	266	122 Minor, 56 General, 13 Title V (all minor for VOC)	Rule 331 meets the requirements in CTG EPA-453/R-06-001. Rule 200 3 lbs of VOC/day permit requirements exceeds the CTG's cutoff of 15 lb/day of VOC emissions	Rule 331 meets RACT	2006 CTG, so Rule 331 meets RACT
			(b) In rural nonattainment areas, all cold cleaners can be exempted and	Volatility of solvent is used to require greater control in cold cleaner	EPA-453/R-06-001	Control Techniques Guidelines for Industrial Cleaning Solvents (PDF	2. VOC Content Limit: 50 g/l (0.42 lb/gal) of VOC content in cleaning material, unless								

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
			open top vapor or conveyorized degreasing operations at one plant location where emissions are 100 tons or less on a facility-wide basis on annual solvent purchase records can be exempted (Ref. 14, p. 1). (c)The latest CTG lists 15lb/day of VOC as the cutoff for applicability	s for the same control techniques (Ref. 12, p. 3-31). Operating and equipment requirement exemptions for cold cleaners with remote solvent reservoirs; no other exemptions for cold cleaners in urban non-attainment areas (Ref.13, p. 1)		290 pp. 7.6MB)	there is a control system with 85% efficiency 3. Alternative Composite Vapor Pressure Limit: 8 mmHg at 20° C as (1) replacement for 50 g/l VOC content limit or (2) an alternative limit that may be used in lieu of the 50 g/l VOC content limit.			3 lbs VOC/day.					

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
Perchloro-ethylene Dry Cleaning		080301	None	Adsorbers are not required where there is inadequate space to accommodate them or where there is no way to desorb them. Other hardships may be found to exclude plants from using adsorbers (Ref. 27, p. 1-4). Adsorbers are also not required at coin operated facilities (Ref. 20, p. 118).	EPA-450/2-78-050	Control of Volatile Oranic Emissions from Perchloroethylene Dry Cleaning Systems (PDF 76 pp, 2.5MB)		333	06/19/1996		4	8 Minor, 131 General	Note: Perchloroethylene has been exempted as a VOC, so this CTG is no longer relevant. However, there is a MACT standard for perchloroethylene dry cleaners.	N/A	N/A
Large Petroleum Dry Cleaners		080302	Does not apply to petroleum solvent dry cleaning facilities that consume		EPA-450/3-82-009	Control of Volatile Organic Compound Emissions from Large Petroleu		333	06/19/1996		4	3 Minor, 123 General, 1 Title V (all minor for VOC)	Rule 333 meets the requirement of the CTG	No sources exceed the CTG applicability threshold	CTG is from 1982, but the source with greatest throughput is only 2200

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
			less than 123,000 liters (32,500 gallons) of petroleum solvent annually (Ref. 31 p. 4-2).			m Dry Cleaners (PDF 174 pp, 5.0MB)									gal/yr, so Negative Declaration
Metal Furniture	2514, 2522, 2531, 2542, 2599, 3429, 3469, 3495, 3645, 3646, 3821, 3843	080410	15 lb/day or 3 tons/rolling 12 month - 2007 CTG		EPA-450/2-77-032 EPA 453/R-07-005	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume III: Surface Coating of Metal Furniture (PDF 66 pp, 1.9MB) Control Techniques Guidelines for Metal Furniture Coatings (PDF 100 pp, 293KB)	EPA-453/R-07-005 regulates air-dried metal furniture coatings to between 3.3 and 6.7 gal of solids.	336	04/07/1999	Rule 200 requires a permit if sources uses more than one gallon per day of coating material. Rule 200 in general also requires a permit for any source emitting more than 3 lbs VOC/day. Rule 336 regulates metal furniture coatings to 3.0 lbs/gal of VOC content.	164	2 Minor, 2 General	Rule 336 exceeds the requirements in CTG EPA-453/R-007-005. Rule 200 - 3 lbs of VOC/day permit requirements exceeds the CTG's cutoff of 15 lb/day of VOC emissions.	No sources exceed the CTG applicability threshold	Negative Declaration, though Rule 336 should be updated to latest CTG RACT. No Sources
Magnet Wire		080405	15 lb/day; no yearly threshold		EPA-450/2-77-033	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume IV: Surface Coating of	CTG recommends either 90% efficient ECS or coating of 1.7 lbs/gal of VOC content	336	04/07/1999	Rule 336 does not mention magnet wire. The other metal parts section gives limits of 3.5 lbs/gal of air dried and 3.0 lbs/gal for baked	164	0	Rule 336 does not meet the CTG for magnet wire; update Rule 336	No sources	Negative Declaration, though Rule 336 should be updated to latest CTG RACT. No Sources

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
						Insulation of Magnet Wire (PDF 44 pp, 1.1MB)				VOC content. ECS are required to meet 85% efficiency.					
Large Appliances	3631, 3632, 3633, 3639, 3582, 3585, 3589	080404	15 lb/day or 3 tons/rolling 12 month - 2007 CTG	Quick drying lacquers used to repair scratches and nicks that occur during assembly are exempt from meeting any emission limits (Ref. 18, p. 1-2).	EPA-450/2-77-034 EPA 453/R-07-004	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume V: Surface Coating of Large Appliances (PDF 70 pp, 2.1MB) Control Techniques Guidelines for Large Appliance Coatings (PDF 44 pp, 374KB)	EPA-453/R-07-004 regulates air-dried metal furniture coatings to between 2.3 and 3.5 lbs/gal of VOC.	336	04/07/1999	Rule 200 requires a permit if sources uses more than one gallon per day of coating material. Rule 200 in general also requires a permit for any source emitting more than 3 lbs VOC/day. Rule 336 regulates metal furniture coatings to 2.8 lbs/gal of VOC content.	164	1 minor	Rule 336 does not meet the CTG for large appliance coating; update Rule 336	No sources exceed the CTG applicability threshold	Negative Declaration, though Rule 336 should be updated to latest CTG RACT. No Sources
Paper		080403	15 lb/day or 3 tons/rolling 12 month - 2007 CTG actual emissions or 25 tpy potential to emit per coating line		EPA-450/2-77-008	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automob	1. Provide a 90% control of VOC emissions or 2. 0.20 kg VOC/kg (0.20 lb VOC/lb) solids for pressure sensitive tape and label printing and 0.067 kg VOC/kg (0.40 lb	336	04/07/1999	Rule 200 requires a permit if sources uses more than one gallon per day of coating material. Rule 200 in general also requires a permit for any source emitting more than	164	2 Minor, 1 General	Different system of VOC calculation.	No sources exceed the CTG applicability threshold	Negative Declaration, though Rule 336 should be updated to latest CTG RACT. No Sources

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
						iles, and Light-Duty Trucks (PDF 232 pp, 2.7MB)	VOC/lb) solids for paper, film, and foil.			3 lbs VOC/day.					
					EPA 453/R-07-003	Control Techniques Guidelines for Paper, Film, and Foil Coatings (PDF 102 pp, 488KB)				Rule 336 regulates paper coating, including adhesives, to 2.9 lbs/gal of VOC content.					
Can Coating		080407	15 lb/day; no yearly threshold		EPA-450/2-77-008	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks (PDF 232 pp, 2.7MB)	EPA-450/2-77-008 limits VOC content of can coating to between 2.5 and 5.5 lbs/gal (2.8 for basecoat)	336	04/07/1999	Rule 336 limits VOC content of can coating to between 2.5 and 5.5 lbs/gal (2.8 for basecoat)	164	1 Minor, 1 General, 1 Title V (Major for VOC)	Rule 336 matches the CTG	Major source exceeds the CTG applicability threshold	CTG is from 1977 so cannot be assumed to meet RACT. Also, there is a major VOC souce in this category. Update Rule 336.
Metal Coils		080408	15 lb/day; no yearly threshold		EPA-450/2-77-008	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface	EPA-450/2-77-008 limits VOC content of can coating to 2.6 lbs/gal for prime and topcoat or single coat operation.	336	04/07/1999	Rule 336 limits VOC content of coil coating to 2.6 lbs/gal (any coat).	164	2 Minor	Rule 336 matches the CTG	No sources exceed the CTG applicability threshold	Negative Declaration, though Rule 336 should be updated to latest CTG RACT. No Sources

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
						Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks (PDF 232 pp, 2.7MB)									
Fabrics		080402	15 lb/day; no yearly threshold		EPA-450/2-77-008	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks (PDF 232 pp, 2.7MB)	EPA-450/2-77-008 limits VOC content of fabric coating to 2.9 lbs/gal. Vinyl coating is limited to 3.8 lbs/gal.	336	04/07/1999	Rule 336 limits VOC content of fabric coating to 2.9 lbs/gal.	164	4 Minor	Rule 336 matches the CTG	2 minor sources exceed the CTG applicability threshold	CTG is from 1977 so cannot be assumed to meet RACT. Also, there is a major VOC souce in this category. Update Rule 336.
Miscellaneous Metal Parts	3572, 3573, 3574, 3661, 3579, 3861, among others	080415	15 lb/day or 2.7 tons/rolling 12 month - 2007 CTG	· This regulation is not intended to cover surface coating of the following metal parts and products: (1) automobile and	EPA-450/2-78-015	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VI: Surface Coating of Miscellaneous Metal Parts		336	04/07/1999		164	64 minor, 36 general	Rule 336 does not meet the CTG for miscellaneous metal parts; update Rule 336	There are 12 minor sources and 4 general sources that exceed the annual emissions CTG applicability threshold	Update Rule 336

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
				light-duty trucks, (2) metal cans, (3) flat metal sheets and strips in the form of rolls or coils, (4) magnet wire for use in electrical machinery, (5) metal furniture. (6) 1arge appliances, (7) exterior of planes, (8) automobile refinishing, (9) customized topcoating of automobiles and trucks, if production is less than 35 vehicles per day, and (10) exterior of	EPA 453/R-08-003	and Products (PDF 82 pp. 2.6MB) Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings (PDF 143 pp, 897KB)	EPA-453/R-08-003 limits VOC content of air-dried coatings to between 2.8 and 6.2 lbs/gal. Baked coatings are limited to between 2.3 and 6.2 lbs/gal.			Rule 336 limits VOC-content of air-dried coatings to 3.5 lbs/gal, baked coatings to 3.0 lbs/gal, and silicone release coatings to 3.5 lbs/gal.					

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
				marine vessels (Ref. 20, pp. 28 and 29).											
Industrial Adhesives		080401	15 lb/day or 3 tons/rolling 12 month		EPA 453/R-08-005	Control Techniques Guidelines for Miscellaneous Industrial Adhesives (PDF 47 pp, 350KB)	EPA 453/R-08-005 limits VOC content on a range of substrates to between 0.3 to 2.1 lbs/gal for general adhesive processes. Paper is limited to 1.0 and metal is limited to 0.3 lbs/gal.	336	04/07 1999	Rule 336 regulates paper coating, including adhesives, to 2.9 lbs/gal of VOC content. Coating metal parts with adhesives is limited to 3.0-3.5 lbs/gal.	164	26 minor, 1 General, 4 Title V (1 major for VOC)	Rule 336 does not meet the CTG for coating adhesives; update Rule 336	There are 4 minor sources and 4 major sources that exceed the annual emissions CTG applicability threshold. Adhesives and adhesive primers are regulated under Rule 330 (Volatile Organic Compounds) and natural and synthetic rubber adhesives are regulated under Rule	Negative Declaration

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
														334 (Rubber Sports Ball Manufacturing)	
Graphic Arts		080201, 080202, 080203	15 lb/day or 3 tons/rolling 12 month - 2006 CTG		EPA-450/2-78-033 EPA-453/R-06-002	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VIII: Graphic Arts-Rotogravure and Flexography (PDF 64 pp, 1.9MB) Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing (PDF 52 pp, 349KB)		337	08/17/2011		Not Analyzed	21 Minor, 36 General	Not Analyzed	4 minor and 10 general sources exceed the annual CTG applicability threshold	Rule 337 updated in 2011, so it meets RACT
Flexible Package Printing	2671, 2673, 2674, 3497	080204 (for package/product printing, not publications)	15 lb/day or 3 tons per 12 month rolling for work practice recommendations; If >25 tpy potential		EPA-453/R-06-003	Control Techniques Guidelines for Flexible Package Printing (PDF 33 pp, 216KB)		337	08/17/2011		Not Analyzed	0 Sources	Not Analyzed	No sources	Rule 337 updated in 2011, so it meets RACT

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
			to emit, then controls are recommended												
Cutback Asphalt		080601	None (see comment)	· If a State chooses a 100 ton per year cutoff, the State must consider all State, local, and private use in an area for which the control strategy demonstration is developed (Ref. 10, p. 6) · Use of cutback asphalt is approvable under the following circumstances: (1) where it can be demonstrated that	EPA-450/2-77-037	Control of Volatile Organic Emissions from Use of Cutback Asphalt (PDF 18 pp. 481KB)		340	09/21/1992		0	0 Sources	Rule is in the ozone plan but does not need to be revised	No sources	No Sources, Negative Declaration

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
				long-Life stockpiling is necessary, (2) where the asphalt is to be used solely as a penetrating prime coat, (3) months during the year where temperature do not linger above 50°F for periods of time adequate for emulsified asphalt application and setting, and (4) where it can be demonstrated that no VOC emissions will occur from the use of the cutback (Ref. 11, pp. 2,3)											

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
Wood Furniture Manufacturing		080409	25 tpy; no daily threshold		EPA-453/R-96-007	Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations (PDF 288 pp, 13.8MB)	EPA-453/R-96-007 limits VOX content to between 1.9 and 2.0 lb VOC/lb solids. Has option for lower VOC topcoat.	342	11/20/1996	Rule 342 limits VOC content to between 1.8 and 2.3 lbs VOC/lbs solids. There are options for lower VOC topcoat and unlimited sealer and some coatings have no limits.	68	50 Minor, 3 General, 2 Title V (4 of these major for VOC)	Rule 342 matches CTG	2 minor, 1 general, and 2 major sources exceed the CTG applicability threshold	CTG and Rule 342 are both from 1996; update Rule 342
Automobile and Light-Duty Trucks		080421	15 lb/day; no yearly threshold. The 2006 CTG covers new automobiles/trucks and parts on assembly lines; auto refinishing, i.e., body shops and collision repair, are not covered by the CTG. Rule 345 applies to refinishing only		EPA-450/2-77-008 EPA 453/R-08-006	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks (PDF 232 pp, 2.7MB) Control Techniques Guidelines for Automobile and Light-Duty Truck Assembly		345	04/21/1999		Not Analyzed	13 Minor, 122 General	Rule is not in the ozone plan but is being revised	6 minor and 56 general sources exceed the CTG applicability threshold	Update Rule 345

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
					EPA 453/R-08-002	Coatings (PDF 44 pp, 2.64MB) Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Primer-Surfacer and Topcoat Operations (PDF 129 pp, 450KB)									
Flatwood Paneling		080411	1978 CTG: 15 lb/day; no yearly threshold 2006 CTG: 15 lb/day; no yearly threshold	· Does not apply to the manufacture of exterior siding, tile board, or particle board used as a furniture component (Ref.20, p. 49).	EPA-450/2-78-032	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VII: Factory Surface Coating of Flat Wood Paneling (PDF 66 pp, 2.0MB)	EPA-453/R-06-004 limits VOC content to 2.1 lbs/gal or use a 90% efficient ECS.	346	11/20/1996	Rule 346 limits VOC content of coatings to between 5.10 and 5.66 lbs/gal. There are VOC tradeoff options and some coatings with no VOC limits. Must use transfer-efficient spray equipment if coating exceeds 4.29 lb VOC/gal or must use ECS.	24	10 minor, 1 Title V (all minor for VOC)	Rule 346 does not meet the requirements of the latest CTG. In addition, the language of the newest CTG does not include millwork, but uses the term flat wood paneling (old CTG does refer to millwork).	There are 4 minor sources and 1 major source that exceed the annual emissions limit for the CTG applicability threshold	Per note from Stan, the flatwood paneling CTG does not include millwork. Negative Declaration

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
					EPA-453/R-06-004	Control Techniques Guidelines for Flat Wood Paneling Coatings (PDF 27 pp, 212KB)				Sources emitting <10 tons/year of VOC are exempt from section 300, 400, and 501.					
Aerospace MACT		080414	25 tpy		59 FR-29216 6/06/1994	Aerospace MACT (PDF 37 pp, 5.6MB)	The NESHAP limit VOC content to 350-420 g/l for primers and topcoats.	348	04/07/1999	Rule 348 limits VOC content to 350-540 g/l for primers & topcoats and 60-1030 g/l for specialty coatings. An ECS of at least 81% efficiency can also be used. Application equipment must have a transfer efficiency of at least 65% (i.e. HVLP or electrostatic spray application methods). Solvent cleaning must have VOC vapor pressure < 45 mm HG. Rules apply to the cleaning of spray guns.	44	18 Minor, 2 General, 3 Title V (all minor for VOC)	Rule 348 matches the NESHAP MACT and the CTG	No sources exceed the CTG applicability threshold	No sources exceed applicability threshold. Negative Declaration

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
Aerospace CTG & MACT		080414	25 tpy		EPA-453/R-97-004	Aerospace (CTG & MACT) (PDF 62 pp, 288KB)	See Rule 348 Specifics tab. EPA-453/R-97-004 limits VOC content to 60-1030 g/l for specialty coatings. Primers and topcoats are regulated for major sources under NESHAP	348	04/07/1999	See Rule 348 Specifics tab. Rule 348 limits VOC content to 350-540 g/l for primers & topcoats and 60-1030 g/l for specialty coatings. An ECS of at least 81% efficiency can also be used. Application equipment must have a transfer efficiency of at least 65% (i.e. HVLP or electrostatic spray application methods). Solvent cleaning must have VOC vapor pressure < 45 mm HG. Rules apply to the cleaning of spray guns.	44	18 Minor, 2 General, 3 Title V (all minor for VOC)	Rule 348 matches the NESHAP MACT and the CTG	No sources exceed the CTG applicability threshold	No sources exceed applicability threshold. Negative Declaration
Synthesized Pharmaceutical Products		040699	<15 lbs/day; for each vent from reactors, distillation operatio	. Recommends cutoffs if case-by-case approach is	EPA-450/2-78-029	Control of Volatile Organic Emissions from Manufacture of Synthesi		349	04/07/1999		None	4 Minor	Rule is in the ozone plan but does not need to be revised	No sources exceed the CTG applicability	No sources exceed applicability threshold. Negative

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
			ns, crystallizers, centrifuges, and vacuum dryers (Ref. 23, p. I-5).	not practical (Ref. 23. p. 1-5). · Requirement for air dryers and production equipment exhaust systems differ at 330 lbs/day (Ref. 23, p. I-6). · Does not cover fermentation, extraction of organic chemicals from vegetable materials or animal tissues, and formulation and packaging of the products (Ref. 20, p. 61).		zed Pharmaceutical Products (PDF 134 pp, 3.8MB)								threshold	declaration
Gasoline Bulk Plants		090199	(a) Storage tanks with less than 2,000 gallons storage	· Bulk Plants are defined as <76,000 liters (20,00	EPA-450/2-77-035	Control of Volatile Organic Emissions from Bulk Gasoline	1. Submerged loading. 2. Vapor balance system with 90% efficiency.	350	04/06/1992	1. Submerged fill pipe and pressure/vacuum valve on tanks	26	16 minor VOC sources	Rule 350 exceeds the requirements of the CTG;	7 sources exceed CTG applic-ability	CTG is from 1977, Rule is from 1992; update Rule 350

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
			capacity (Ref. 2. p. 5-1) (b) Exemption for bulk plants with throughputs of less than 4,000 gals per day (Ref 3, p. 1)	0 gallons)/day throughput		Plants (PDF 49 pp. 1.3MB)	3. Vapor recovery with 90-93% efficiency, incineration of vapors at 98% efficiency. 4. Leak prevention from loading operations.			>250 gal. 2. Vapor recovery systems on tanks between 250-40,000 gal., or alternative control device. Tanks >40,000 gal must have alternative control device: external floating roof, internal floating roof, or vapor collection/processing system with 95% efficiency.			update Rule 350	threshold	
Fixed Roof Petroleum Tanks		?	(a) <150,000 liters (40,000 gallons) storage capacity of volatile petroleum liquids (greater than l0.5 kPa TVP) (Ref. 6, p. 6-1). (b) <1,600,000 liters (420,000 gallons) storage capacity of crude oil and condensate prior to lease	· Does not apply to storage vessels equipped with external floating roofs before 1/1/79 · Does not apply to horizontal, underground storage tanks storing JP-4	EPA-450/2-77-036	Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed-Roof Tanks (PDF 43 pp. 1.1MB)	1. Installation of an internal floating roof tank with 90% emission reductions.	350	04/06/1992	1. Submerged fill pipe and pressure/vacuum valve on tanks >250 gal. 2. Vapor recovery systems on tanks between 250-40,000 gal., or alternative control device. Tanks >40,000 gal must have alternative control device: external floating	26	Unknown	Rule 350 exceeds the requirements of the CTG; update Rule 350	Status unknown	CTG is from 1977, Rule is from 1992; update Rule 350

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
			custody transfer (Red. 6, p. 6-2)	Jet fuel (Ref. 7, p. 2).						roof, internal floating roof, or vapor collection/ processing system with 95% efficiency.					
External Floating Roof Petroleum Tanks		?	(a) <150,000 liters (40,000 gallons) of storage capacity (Ref. 25, p. 5-1). (b) <l,600,000 liters (420,000 gallons) storage capacity used to store produced crude oil and condensate prior to custody transfer (Ref. 25, p. 5-3).	· Does not apply to fixed roof tanks with or without internal floating roofs, or to small production tanks (Ref. 25, p. 1-2). · Does not apply to tanks with a metallic-type shoe seal in a welded tank which has a secondary seal from the top of the shoe seal to the tank wall or external floating roof tanks	EPA-450/2-78-047	Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks (PDF 66 pp, 2.0MB)	1. External floating roof tanks are recommended to have a primary foam, liquid-filled, or metallic shoe seal with a rim-mounted secondary seal.	350	04/06/1992	1. Submerged fill pipe and pressure/ vacuum valve on tanks >250 gal. 2. Vapor recovery systems on tanks between 250-40,000 gal., or alternative control device. Tanks >40,000 gal must have alternative control device: external floating roof, internal floating roof, or vapor collection/ processing system with 95% efficiency.	26	Unknown	Rule 350 exceeds the requirements of the CTG; update Rule 350	Status unknown	CTG is from 1977, Rule is from 1992; update Rule 350

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
				storing waxy, heavy pour crudes (Ref. 25, p. 5-3). · Does not apply to petroleum liquid storage vessels: (1) that contain petroleum liquid with a true vapor pressure of less than 10.5 kPa (l.5 psia), and (2) containing petroleum liquid with a true vapor pressure less than 27.6 kPa (4.0 psia) that are of welded construction and presently posses							2. External floating roof tanks must have continuous primary seal with a secondary seal. In a tank constructed after 7/13/1988, this seal must be rim-mounted.					

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
				s a metallic type shoe seal, a liquid-mounted foam seal, a liquid-mounted filled type seal, or other approved closure device of demonstrated equivalence (Ref. 20, p. 105). · Does not apply to horizontal underground storage tanks storing JP-4 jet fuel (Ref. 25, p. 2.).											
Gasoline Loading Terminals		090199	None	. Terminals are defined as >76,000 liters (20,000 gallons)/day throughput	EPA-450/2-77-026	Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals (PDF 62 pp, 1.6MB)	1. During loading, emission to atmosphere shouldn't exceed 80 mg per liter of gasoline when equiped with vapor collection/	351	02/15/1995	1. Submerged fill pipe and pressure/vacuum valve on tanks >250 gal. 2. Vehicle has pressure-test decal. 3. Terminal	27	3 minor, 1 Title V (all minor for VOC)	Rule 350 exceeds the requirements of the CTG; update Rule 350	□□	CTG is from 1977, Rule is from 1992; update Rule 351

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
							recovery equipment. 2. types of ECS include: Refrigeration Compression, Refrigeration Absorption, Thermal Oxidizer. 3. Leak prevention from tank trucks requiring proper maintenance and testing.			uses vapor collection/ processing system which reduces VOC emissions to 10 g per 1000 liters. 4. loading prevents pressure >33.6 mm Hg and vacuum >11.2 mm Hg.					
Gasoline Tank Trucks and Vapor Collection System Leaks		?	Not specified (15 lbs/day VOC?)	· The affected facilities are (1) gasoline tank trucks that are equipped for vapor collection and (2) the vapor collection system at bulk terminals, bulk plants, and service stations that are equipped with vapor balanc	EPA-450/2-78-051	Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems (PDF 32 pp, 887KB)	1. Gasoline tank trucks hall not change in pressure of more than 3" H2O in 5 minutes when pressurized to 18" H2O or evacuated to 6" H2O, with no visible liquid leaks. 2.During loading or unloading operations there shall be no reaing greater than or equal to 100% of the LEL at 2.5 cm around a	352	05/05/1999	1. gasoline must be stored or transported in a delivery vessel designed and maintained to be vapor tight and leak free. 2. Vapor return hoses must be attached before connecting any onloading hose. 3. Spills and excess drainage must be prevented when disconnecting fill hose. 4. Vapor	6	Un-known	Rule 350 exceeds the requirements of the CTG; update Rule 350	Status unknown	CTG is from 1978, Rule is from 1999; update Rule 352

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
				e and/or vapor processing systems (Ref. 28, p. 2).			potential leak source. 3. Vapor collection/ processing equipment must be designed to prevent gauge pressure in tank truck from exceeding 18" H2O and 6" H2O vacuum. 4. tank trucks must be certified leak tight annually and have sticker on the tank.			hose is required for dispensing gasoline at a retail gas station and care must be taken to prevent vapor escape on deliveries. 5. Delivery vessels must pass annual leak test to get their certification decal. Tanks may not lose > 1" H2O over 5 minutes when pressurized to 18" H2O in two consecutive runs. They can't lose more than 5" of pressure in 5 minutes after the vapor valves are closed and the tank is pressurized to 18". Than can't gain >1" of pressure after being evacuated to a vacuum of					

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
										6". If during one of the subtests there is a pressure change of more than .5" than the tank fails for pressure instability.					
Service Stations - Stage I		090213	(a) Stationary gasoline storage containers of less than 2,085 liters (550 gallons) capacity used exclusively for the fueling of implements of husbandry, provided the containers are equipped with submerged fill pipes (Ref. 4, p. 29) (b) <7,580 liters (2,000 gallons) capacity storage tanks in place before 1/1/79		EPA-450/R-75-102	Design Criteria for Stage I Vapor Control Systems – Gasoline Service Stations (PDF 15 pp, 766KB)	1. a submerged fill pipe is required, pipe must extend to within 6" of tank bottom. 2. if a guage well is used it must also have a drop tube which extends to within 6" of tank bottom. 3. Vapor hose returns must be 3" ID when used with a 4" drop tube, or operator must use slower fill rates to achieve required vapor recovery. 4. 3" or larger connections must be used	353	06/16/1999	1.Tanks and delivery operations shall be vapor tight. Tanks may have pressure/vacuum relief valve that prevent vapor escape at 1/5 of the LEL. 2. Storage and delivery operations may have no more than 3 drops per minute of leakage. No more than 2 tsp of gasoline shall be lost in the course of a hose disconnect. 3. the entire spill containment system shall be	165	62 Minor, 825 General, 2 Title V (4 sources major for VOC)	Rule 350 exceeds the requirements of the CTG; update Rule 350	24 Minor permits exceed applic-ability threshold	CTG is from 1978, Rule is from 1999; update Rule 353

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
			(Ref. 4,p. 29) (c) <948 liters (250 gallons)capacity storage tanks in place after 12/31/78 (Ref. 4, p.29) (d) Exemptions for service station tanks with throughputs of no more than 10,000 gals/month or 120,000 gals/year (Ref. 5, p. 2)				with 4" drop tubes or data showing the required recovery efficiency must be shown. 5. Vapor tight caps are required for the liquid fill connection on all systems. 6. Delivery trucks must be frequently visually inspected and have leak tests twice per year.			kept vapor tight and clean. 4. Each fill pipe shall have a submerged discharge opening no more than 6" above tank bottom. Fill pipe caps shall have a gasket and be vapor tight. 5. Newer tanks shall not have more than one fill pipe unless approved in the permit; they are restricted from concurrent delivery unless specifically approved in the permit. 6. Fill pipes shall not have a screen or obstruction. 7. Gasoline vapors displaced by a delivery shall be handled by a Stage I					

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
										vapor-recovery system.					
Polymer Manufacturing		040301, 040302, 040303	Approximately 1,000 tons of light, liquid, and gaseous VOC processed (see comment).	. Provides guidelines to States to calculate uncontrolled emission rates below which RACT may be unreasonable and States could consider the exemption of plants with uncontrolled emissions at or below these emission levels (Ref. 29, p. 4-1).	EPA-450/3-83-008	Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins (PDF 308 pp, 14.0MB)		358	07/25/2012		Not Analyzed	3 minor		1 source emitted 7300 lbs of VOC in2008, others are very minor sources of VOC.	Rule 358 was updated in 2012, meets RACT
SOCMI and Polymer Mfg. Equipment Leaks		040199	Leaks of concentrations less than 10,000 ppm (Ref. 30. p. 3-2).	· Small process units may be exempted from implementing routine leak detecti	EPA-450/3-83-006	Control of Volatile Organic Compound Leaks from Synthetic Organic Chemica		358	07/25/2012		Not Analyzed	2 Minor		Very minor emissions.	Rule 358 was updated in 2012, meets RACT

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
				on and repair programs on the basis of cost effectiveness for these small units (Ref. 30, p. 4-1). Process units processing only heavy liquid VOC or processing only non-VOC and equipment operating under vacuum may also be exempted (Ref. 30, p. 4-1).		! Polymer and Resin Manufacturing Equipment (PDF 148 pp, 6.2MB)									
Miscellaneous Refinery Sources (Vacuum Producing System		?	(a) None for vacuum producing systems and process unit turnarounds.	· CTG recommends case-by-case address sing of instances which	EPA-450/2-77-025	Control of Refinery Vacuum Producing Systems . Wastewater Separat		None		Not Analyzed	0 Sources		No Sources		No Sources, Negative Declaration

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
s, Wastewater Separators, and Process Unit Turnarounds)			(b) <200 gal/day for wastewater separators (Ref. 4, p. A-68)	control may not be Justified (Ref. 8, p. 6-1).		ors, and Process Unit Turnarounds (PDF 50 pp, 1.3MB)									
Leaks from Petroleum Refineries		?	Leaks of concentrations less than or equal to 10,000 ppm (Ref. 19, p. 6-1).	· No cutoff for petroleum refinery size applies to all refineries. · Not intended to affect facilities that recycle waste oil (Ref. 20, p. 13).	EPA-450/2-78-036	Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment (PDF 78 pp, 6.0MB)		None		Not Analyzed	0 Sources		No Sources		No Sources, Negative Declaration
Rubber Tire Mfg.		070401	Not specified (15 lbs/day VOC?)	· Does not apply to the production of specialty tires for antique or other vehicles when produced on an irregular basis or with short production runs only if these	EPA-450/2-78-030	Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires (PDF 72 pp, 1.6MB)		None		None	0 Sources		No Sources		

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
				tires are produced on equipment separate from normal production lines for passenger type tires (Ref. 20, p. 74).											
Air Oxidation Processes - SOCMI		?	Facilities having a total resources effectiveness (TRE) index value greater than one (1) would not be required to meet RACT (Ref. 32, p. 4-2).		EPA-450/3-84-015	Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry (PDF 259 pp, 9.4MB)		None		None	0 Sources		No Sources		No Sources, Negative Declaration
Equipment Leaks from Natural Gas/Gasoline Processing Plants		?	(a) Leaks with VOC concentrations less than 10,000 ppm	· Does not apply to equipment operating under vacuum and to equipment in heavy liquid	EPA-450/3-83-007 EPA 453/B-16-	Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants (PDF		None		None	0 Sources	For the purposes of this document, natural gas processing plants are defined as faciliti	No Sources		

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
				service (Ref. 33, p. 4-2).	001	194 pp, 6.3MB) Control Techniques Guidelines for the Oil and Natural Gas Industry						es engaged in the separation of natural gas liquids from field gas and/or fractionation of the liquids into natural gas products, such as ethane, propane, butane, and natural gasoline. Excluded from the definition are compressor stations, dehydration units, sweetening units, field treatment, underground storage facilities			
			(b) States may consider exempting non-complex gas plants that have design throughputs of less than 10 million scfd (Ref. 33, p. 3.22).	· Does not apply to wet gas service reciprocating compressors that do not have a VOC control device (Ref. 33. p. 4-2).											
			(c) RACT should apply only to equipment containing or contacting a process stream with a VOC concentration of l.0 percent by weight or more (Ref. 33. p. 4-2).												

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Codes	Note	Status	Recommendation
												es, liquefied natural gas units, and field gas gathering systems unless these facilities are located at a gas plant. Types of gas plants are: absorption, refrigerated absorption, refrigeration, compression, adsorption, cryogenic - Joule-Thomson, and cryogenic-expander.			
Reactor Processes and Distillation Operations in SOCMI			Not specified (15 lbs/day VOC?)		EPA-450/4-91-031	Control of Volatile Organic Compound Emissions from Reactor Processes and Distillatio		None		None	0 Sources		No Sources		No Sources, Negative Declaration

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
						n Operations in Synthetic Organic Chemical Manufacturing Industry (PDF 277 pp, 8.7MB)									
Surface Coating at Shipbuilding facilities					EPA-453/R-94-032	Alternative Control Technology Document – Surface Coating Operations at Shipbuilding and Ship Repair Facilities (PDF 217 pp, 9.8MB)		None		None	0 Sources		No Sources		No Sources, Negative Declaration
Operations at Shipbuilding facilities					61 FR-44050 8/27/96	Control Techniques Guidelines for Shipbuilding and Ship Repair Operations (Surface Coating) (PDF 30 pp, 4.0MB)		None		None	0 Sources		No Sources		No Sources, Negative Declaration
Fiberglass Boat Manufacturing			15 lb/day or 2.7 tons/rolling 12 month - 2008 CTG		EPA 453/R-08-004	Control Techniques Guidelines for Fiberglass Boat Manufacturing Materials (PDF		None		None	0 Sources		No Sources		No Sources, Negative Declaration

Source Category	SIC Codes	TIER Code	Applicability Cutoffs	Bluebook Comments	CTG#	CTG Name	CTG Recommended Control Options	County Rule	Latest Rule Revision Date	Do County Rules Meet CTG Requirements?	#Permits in Maricopa County	#of Permits With Matching TIER Code	Note	Status	Recommendation
						41 pp, 336KB)									

Key	
	Meets RACT; no action required
	Negative declaration
	Requires revision

Maricopa County
Air Quality Department

Revisions To The State Implementation Plan Revision For The Maricopa County Air Quality Department Ozone Rules Contained In The Arizona SIP

Originally Dated December 5, 2016
Originally Submitted To The EPA On December 19, 2016
June 16, 2017

APPENDIX 1A:
NEGATIVE DECLARATIONS

Maricopa County
AIR QUALITY
DEPARTMENT

Philip A. McNeely, R.G. Director
Phone: 602.506.6701
Email: PhilMcNeely@mail.maricopa.gov

Maricopa.gov/AQ
CleanAirMakesMore.com

June 16, 2017

Ms. Alexis Strauss
Acting Regional Administrator
U.S. Environmental Protection Agency, Region IX
Mail Code: ORA-1
75 Hawthorne Street
San Francisco, CA 94105

RE: Negative Declaration Certifying No Emitting Facilities In Maricopa County For Control Techniques Guidelines (CTG) Source Categories

Dear Ms. Strauss,

In accordance with Clean Air Act, Sections 110(a)(2) and 110(l), the Maricopa County Air Quality Department (MCAQD) is submitting this negative declaration letter to the EPA certifying that there are no emitting facilities in Maricopa County for the following Control Techniques Guidelines (CTG) source categories:

Source Category	CTG Document Title	Document Number and Date
Automobiles and Light-Duty Trucks[1]	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks	EPA-450/2-77-008 (May 1977)
	Control Techniques Guidelines for Automobile and Light-Duty Truck Assembly Coatings	EPA-453/R-08-006 (September 2008)
Cutback Asphalt	Control of Volatile Organic Compounds from Use of Cutback Asphalt	EPA-450/2-77-037 (December 1977)
Flat Wood Paneling	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VII: Factory Surface Coating of Flat Wood Paneling	EPA-450/2-78-032 (June 1978)
	Control Techniques Guidelines for Flat Wood Paneling Coatings	EPA-453/R-06-004 (September 2006)
Flexible Packaging Printing	Control Techniques Guidelines for Flexible Package Printing	EPA-453/R-06-003 (September 2006)

Source Category	CTG Document Title	Document Number and Date
Magnet Wire Insulation	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume IV: Surface Coating of Insulation of Magnetic Wire	EPA-450/2-77-033 (December 1977)
Natural Gas/Gasoline Processing Plants	Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants Control Techniques Guidelines for the Oil and Natural Gas Industry	EPA-450/3-83-007 (December 1983) EPA 453/B-16-001 (October 2016)
Fiberglass Boat Manufacturing	Control Techniques Guidelines for Fiberglass Boat Manufacturing Materials	EPA-453/R-08-004 (September 2008)
Petroleum Refineries	Control of Refinery Vacuum Producing Systems, Wastewater Separators and Process Unit Turnarounds	EPA-450/2-77-025 (October 1977)
	Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment	EPA-450/2-78-036 (June 1978)
Polymer Manufacturing[b]	Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	EPA-450/3-83-008 (November 1983)
	Control of Volatile Organic Compound Leaks from Synthetic Organic Chemical and Polymer Manufacturing Equipment	EPA-450/3-83-006 (March 1984)
Rubber Tire Manufacturing	Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires	EPA-450/2-78-030 (December 1978)
Shipbuilding	Alternative Control Techniques Document: Surface Coating Operations at Shipbuilding and Ship Repair Facilities	EPA-453/R-94-032 (April 1994)
	Control Techniques Guidelines for Shipbuilding and Ship Repair Operations (Surface Coating)	61 FR-44050 (August 27, 1996)
Synthetic Organic Chemical Manufacturing	Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry	EPA-450/3-84-015 (December 1984)
	Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations Processes in the	EPA-450/4-91-031 (August 1993)

Source Category	CTG Document Title	Document Number and Date
	Synthetic Organic Chemical Manufacturing Industry	

[a]The CTG documents for Automobile and Light-Duty Trucks only cover new automobiles/trucks and parts on assembly lines; auto refinishing (i.e., body shops and collision repair) are not covered by a CTG. Rule 345 (Vehicle and Mobile Equipment Coating) applies to auto refinishing only.
[b]The CTG documents for Polymer Manufacturing only cover the manufacture of the polymer resins; product fabrication and formation are not covered by a CTG. Rule 358 (Polystyrene Foam Operations) applies only to facilities that expand, age, or mold expandable polystyrene.

If you have any questions, please contact Hether Krause, Manager of the Planning & Analysis Division, at (602) 506-6731 or hetherkrause@mail.maricopa.gov.

Sincerely,

Philip A. McNeely, R.G.
Maricopa County Air Quality Department, Director

Cc (email): Colleen McKaughan – mckaughan.colleen@epa.gov, EPA Region IX
Gerardo Rios – Rios.gerardo@epa.gov, EPA Region IX
Misael Cabrera – cabrera.misael@azdeq.gov, Arizona Department of Environmental Quality

Maricopa County AIR QUALITY DEPARTMENT
Philip A. McNeely, R.G. Director
Phone: 602.506.6701
Email: PhilMcNeely@mail.maricopa.gov
Maricopa.gov/AQ
CleanAirMakesMore.com

June 16, 2017

Ms. Alexis Strauss
Acting Regional Administrator
U.S. Environmental Protection Agency, Region IX
Mail Code: ORA-1
75 Hawthorne Street
San Francisco, CA 94105

RE: Negative Declaration Certifying No Facilities In Maricopa County Exceeding The Control Techniques Guidelines (CTG) Applicability Threshold

Dear Ms. Strauss,

In accordance with Clean Air Act, Sections 110(a)(2) and 110(l), the Maricopa County Air Quality Department (MCAQD) is submitting this negative declaration letter to the EPA certifying that there are no facilities in Maricopa County exceeding the Control Techniques Guidelines (CTG) applicability threshold for the following CTG source categories:

Source Category	Applicability Threshold	CTG Document Title	Document Number and Date
Aerospace	25 tons/year	National Emission Standards for Hazardous Air Pollutants for Sources Categories: Aerospace Manufacturing and Rework	59 FR-29216 (June 6, 1994)
	25 tons/year	Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations	EPA-453/R-97-004 (December 1997)
Industrial Adhesives	15 lb/day or 3 tons/rolling 12 month	Control Techniques Guidelines for Miscellaneous Industrial Adhesives	EPA-453/R-08-005 (September 2008)
Large Appliances*	None	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume V: Surface Coating of Large Appliances	EPA-450/2-77-034 (December 1977)

Source Category	Applicability Threshold	CTG Document Title	Document Number and Date
	15 lbs/day OR 3 tons/rolling 12 months	Control Techniques Guidelines for Large Appliance Coatings	EPA-453/R-07-004 (September 2007)
Large Petroleum Dry Cleaners	123,000 liters (32,500 gallons) petroleum solvent/ year	Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners	EPA-450/3-82-009 (September 1982)
Metal Coils[a]	15 lbs/day	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks	EPA-450/2-77-008 (May 1977)
Metal Furniture[a]	None	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume III: Surface Coating of Metal Furniture	EPA-450/2-77-032 (December 1977)
	15 lbs/day OR 3 tons/rolling 12 months	Control Techniques Guidelines for Metal Furniture Coatings	EPA-453/R-07-005 (September 2007)
Paper[a]	None	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks	EPA-450/2-77-008 (May 1977)
	15 lbs/day OR 3 tons/rolling 12 months actual; 25 tons/year potential to emit per coating line	Control Techniques Guidelines for Paper, Film, and Foil Coatings	EPA-453/R-07-003 (September 2007)
Synthesized Pharmaceutical Products	15 lbs/day for each vent from reactors, distillation operations,	Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products	EPA-450/2-78-029 (December 1978)

Source Category	Applicability Threshold	CTG Document Title	Document Number and Date
	crystallizers, centrifuges, and vacuum dryers		

*Although there are no stationary sources or emitting facilities that exceed the CTG applicability threshold for these CTG categories, the department revised Rule 336 (Surface Coating Operations), which is the applicable rule for these categories.

If you have any questions, please contact Hether Krause, Manager of the Planning & Analysis Division, at (602) 506-6731 or hetherkrause@mail.maricopa.gov.

Sincerely,

Philip A. McNeely, R.G.
Maricopa County Air Quality Department, Director

Cc (email): Colleen McKaughan – mckaughan.collen@epa.gov, EPA Region IX
Gerardo Rios – Rios.gerardo@epa.gov, EPA Region IX
Misael Cabrera – cabrera.misael@azdeq.gov, Arizona Department of Environmental Quality

Maricopa County
Air Quality Department

State Implementation Plan Revision For The Maricopa County Air Quality Department Ozone Rules Contained In The Arizona SIP December 5, 2016

APPENDIX 2: NOTICES OF FINAL RULEMAKING

NOTICE OF FINAL RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 322: POWER PLANT OPERATIONS
PREAMBLE

1.	**Rule affected**	**Rulemaking action**
	Rule 322: Power Plant Operations	Amended

2. **Statutory authority for the rulemaking:**
Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. **The effective date of the rule:**
Date of adoption: November 2, 2016

4. **List of public notices addressing this rulemaking:**
Notice of Briefing to Maricopa County Manager: May 2015
Notice of Stakeholder Workshops: June 29, 2015, September 3, 2015, and February 24, 2016
Notice of Maricopa County Board of Health Meeting: April 25, 2016
Notice of Proposed Rulemaking: 22 A.A.R. 1122, May 13, 2016

5. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name:	Johanna M. Kuspert or Hether Krause
	Maricopa County Air Quality Department
	Planning and Analysis Division
Address:	1001 N Central Avenue, Suite 125
	Phoenix, Arizona 85004
Telephone:	(602) 506-6010
Fax:	(602) 506-6179
E-mail:	aqplanning@mail.maricopa.gov

6. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary:

Rule 322 (Power Plant Operations) limits the discharge of nitrogen oxides (NO_X), sulfur oxides, particulate matter and carbon monoxide emissions into the atmosphere from stationary fossil-fuel-fired equipment at power plants and cogeneration plants. Revisions to Rule 322 addressed the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The amendments in Rule 322 included Reasonably Available Control Technology (RACT) for NO_X.

In addition, the amendments corrected typographical or other clerical errors; made minor grammatical changes to improve readability or clarity; modified the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or made various other minor changes of a purely editorial nature. As these changes did not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 14 of this notice.

Issues Raised and Discussed During this Rulemaking Process:

Stakeholders expressed a general understanding for the need for rule revisions based on the department's nonattainment status; however, Stakeholders were concerned about the emission limitations and what is considered "RACT" and what is considered "beyond RACT". Stakeholders requested comparisons to comparable agencies to see how they have managed to achieve RACT. In addition, questions were raised regarding the following:

- The stringency of Rule 322 compared to the stringency in the Arizona Department of Environmental Quality's (ADEQ's) rules
- Cost effectiveness and its relationship to RACT and the impact on sources
- Most Achievable Control Technology (MACT) standards and the application to the boiler standards
- The compliance schedule and the timing of when sources must show compliance with the proposed emission limitations
- The phrase "owner and/or operator" and the implications of responsibility and liability
- Exemptions for equipment operating hours and during startup and shutdown

- The requirements for continuous emission monitoring systems and allowances for alternative methods

Description of Proposed Amendments:

Regarding Applicability:

- Section 102 (Applicability): Rule 322 no longer applies only to equipment for which construction commenced prior to May 10, 1996. Rule 322 applies to all equipment, except for equipment that was built or modified after May 10, 1996 that is already subject to more stringent federally enforceable standards. This revision made the rule comply with RACT, while also recognizing that sources that are complying with more stringent federally and/or locally enforceable standards are complying with RACT and are therefore in compliance with this rule. Rule 322 included new Section 102.4 (per the U.S. Environmental Protection Agency's (EPA's) comment) a provision that states that facilities subject to Rule 322 may be subject to New Source Performance Standards (NSPS) and/or National Emission Standards for Hazardous Air Pollutants (NESHAP).
- Section 104 (Partial Exemptions): Rule 322 included a partial exemption for equipment that operates less than or equal to 10 percent annual capacity factor per calendar year. This revision made the rule compliant with RACT, while also recognizing that if equipment operates below the specified rate then such equipment would not be expected to discharge into the atmosphere nitrogen oxides in excess of the limits specified in the rule and would therefore be in compliance with this rule. Also, Rule 322 included the definition of "annual capacity factor" in Section 200; definition is similar to definition used in 40 CFR Part 63, Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters)
- Section 104.1(c) (Partial Exemptions): Rule 322 was revised to clarify the partial exemption for military training facilities. The EPA commented that the term "military training facility" is unclear in this rule, especially as distinguished from other facilities such as "garrisons". The EPA suggested that this exemption should focus on the specific types of activities at these facilities that reasonably require exemptions, rather than the facilities themselves. The EPA suggested using Imperial County Air Pollution Control District, Rule 800, Section E(6) (General Requirements for Control of Fine Particulate Matter (PM10)) as an example. The text included in Section 104.1(c) is from Imperial County Air Pollution Control District, Rule 800, Section E(6) (General Requirements for Control of Fine Particulate Matter (PM10)).
- Sections 104.2 and 104.3 (Partial Exemptions): Rule 322 was revised to include source specific limitations on emergency fuel use that is or will be incorporated in a source permit. The EPA commented that engines and fuel use allow alternative emission limits from normal operating conditions; this is generally allowable but must also include appropriate limits on the length of the emergency condition and alternative emergency emission limits. EPA asked that the department revise this section.

Regarding Definitions:

- Section 235 (Definition of "Steady State"): Rule 322 included a definition of "steady state"; the text of the definition was proposed by one of the Stakeholders/sources subject to Rule 322 – Arizona Public Service (APS). The EPA commented that Rule 322 uses the term "steady state operation" without further description.

Regarding Limitations for Particulate Matter:

- Sections 301.1 and 301.2: The limitations for particulate matter-fuel type and testing were deleted. Stakeholders commented in January 2016 that Sections 301.1 and 301.2 might not be needed because equipment cannot use anything other than natural gas for non-emergency purposes.

Regarding Limitations for Nitrogen Oxides (NO_X):

- Section 305.1: The NO_X limitation when burning gaseous fossil fuel was changed from "155 ppmv" to "42 ppmdv". The EPA advised that this limitation is considered RACT for NO_X; this limitation is similar to limits in Imperial County's (CA) RACT SIP for the 1997 ozone standard for turbines (Rule 400.1 adopted 2010).
- Section 305.2: The NO_X limitation when burning liquid fossil fuel was changed from "230 ppmv" to "65 ppmdv". The EPA advised that this limitation is considered RACT for NO_X; this limitation is similar to limits in Imperial County's (CA) RACT SIP for the 1997 ozone standard for turbines (Rule 400.1 adopted 2010).

Regarding Alternative Monitoring Methods:

- Section 200 (Definitions): The definitions of "low mass emissions (LME)" and "predictive emissions monitoring system (PEMS)" were added to Rule 322. The text for the definition of "LME" is from 40 CFR Part 75 (Acid Rain) and the text for the definition of "PEMS" is from the EPA.
- Section 301 (Good Combustion Practices for Turbines): Rule 322 included a provision that if CEMS or another approved monitoring method is used, good combustion practices for turbines are considered to have been met.
- Section 301.1 (Good Combustion Practices for Turbines): Rule 322 included text regarding the frequency of monitoring temperature differential across the combustion burners. The EPA commented that the frequency of differential temperature measurement should be defined and that continuous monitoring of this differential should be required.
- Section 307.1 (Requirements for Emission Control System (ECS) Monitoring Equipment): Rule 322 included a provision that allows for installing an approved combustion control system (as an alternative to installing an emission control system (ECS)), in order to comply with the standards of the rule. Not all "approved combustion control systems" are "emission control systems"; however, approved combustion control systems should be designed and operated in accordance with good engineering practices to reduce emissions (which matches the definition of "emission control system").
- Section 307.3(d) (Operation and Maintenance (O&M) Plan Required for ECS): Rule 322 included text that the department inserts into Title V permit renewals, which requires facilities to comply with O&M Plan revisions upon submittal not department approval.
- Section 307.4 (Continuous Emission Monitoring Systems): Rule 322 included other methods (other than CEMS) for measuring nitrogen oxides.

Regarding Administrative Requirements:

- Sections 401 (in Existence and in Compliance) and 402 (in Existence and Non-Compliant): Rule 322 included compliance schedules for equipment that is in existence and in compliance and in existence and non-compliant.
- Section 403 (Emergency Standby Units): Rule 322 included a compliance schedule for emergency standby units.

Regarding Compliance Determinations:

- Section 504 (Compliance Determination-Test Methods Incorporated By Reference): Rule 322 included a provision that allows for the use of alternative test methods to determine compliance with the rule and to clarify the provision regarding when more than one test method is permitted for a compliance determination.
- Section 504.12 (Compliance Determination-Test Methods Incorporated By Reference): Rule 322 deleted the text method "American Society of Testing Materials, ASTM Method D1266-98, ("Standard Test Method for Sulfur in Petroleum Products - Lamp Method"), 1998". The EPA commented that the test method may not be appropriate; its range is 0.01-0.4% which will not be able to verify compliance with the definition of ultra low sulfur diesel fuel at <0.0015%.

7. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
   - **(a)** Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
   - **(b)** Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)
When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.
The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. The County failed to meet 2008 8-hour ozone standard by the marginal area attainment date of July 20, 2015. The EPA issued a final rule, effective June 3, 2016, reclassifying the Maricopa County area to "moderate" (published at 86 FR 26697, May 4, 2016). Further, a portion of the County was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the County to continue to maintain the measures and requirements that allowed the County to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM_{10} 24-hour standard. This is the only serious PM_{10} nonattainment area in Arizona. Revisions to Rule 322 addressed the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The amendments in Rule 322 included Reasonably Available Control Technology (RACT) for NO_X.
The department complies with A.R.S. § 49-112(B) in that the amendments to Rule 322 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49; address the peculiar local conditions in Maricopa County; are authorized under A.R.S. Title 49, Chapter 3, Article 3; and are not in lieu of a state program.

8. **Documents or studies referenced and/or reviewed for this rulemaking:**
Not applicable

9. **Showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**
Not applicable

10. **Summary of the economic, small business, and consumer impact:**
The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

An identification of the rulemaking.
This rulemaking revised Rule 322 (Power Plant Operations).

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.
The persons directly affected by and bear the costs of this rulemaking are facilities in Maricopa County that operate the following types of equipment built or modified before May 10, 1996, that burn fossil fuel:
- Electric utility steam generating unit or cogeneration steam unit used to generate electric power that has a heat input of equal to or greater than 100 MMBtu/hour (20 MW);
- Electric utility stationary gas turbine with a heat input at peak load equal to or greater than 10 MMBtu/hour (2.9 MW) based upon the lower heating value of the fuel;
- Cooling towers associated with these types of equipment.

The department has issued permits for 5 facilities that are subject to this rule as revised.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**
It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.
The benefits of the rule revision are anticipated to be a result of the following:
- The revision of the NO_X limitation when burning gaseous fossil fuel from "155 ppmv" to "42 ppmdv" to conform to federal performance standards;
- The revision of the NO_X limitation when burning liquid fossil fuel from "230 ppmv" to "65 ppmdv" to conform to federal performance standards;

- Exemption a source from the NO_X limitations and continuous emissions monitoring system requirements if the source submits a Reasonable Available Control Technology (RACT) evaluation to the Control Officer if such RACT evaluation if incorporated into the source's permit;
- Minor changes of a purely editorial nature, e.g., corrected typographical or other clerical errors; made minor grammatical changes to improve readability;
- Modification of the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules.

The entities with sources subject to revised Rule 322 have submitted a RACT evaluation for their subject units, and have stated that they will not incur costs for compliance with the rule revisions. In their RACT evaluation, these entities determined that the most cost-efficient method to meet the RACT NO_X limitations is to limit the hours of operation for particular power plant units. The entities already have similar limitations in their Title V permits, and as such, there will be no additional burden on them to comply with the new RACT-based hourly limits.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity provided by the Rule 322 revisions will provide a benefit to the regulated community; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revisions did not impose increased monetary or regulatory costs on individuals so regulated.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions did not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated.

(a) **An identification of the small businesses subject to the rulemaking.**

There are no small businesses subject to this rulemaking.

(b) **The administrative and other costs required for compliance with the rulemaking.**

This rulemaking updated and clarified existing rule provisions and definitions to be consistent with federal performance standards, to reduce confusion and improve understanding and readability. The department considered the implications of the amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**

There are no small businesses subject to this rulemaking.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**

This rulemaking did not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated. As such, there are no costs to pass through to consumers which means there are no impacts on consumers.

A statement of the probable effect on state revenues.

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

11. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name:	Johanna M. Kuspert or Hether Krause
	Maricopa County Air Quality Department
	Planning and Analysis Division
Address:	1001 N Central Avenue, Suite 125
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12. **Description of the changes between the proposed rule, including supplemental notices and final rule:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R 1122), the department made the following additional amendments:

- Section 102 (Applicability): Did not include proposed new text "except for equipment that was built or modified after May 10, 1996 that is already subject to more stringent federally and/or locally enforceable standards". The EPA commented in June 2016 that the exception conflicts with the Clean Air Act requirement that "major sources" in ozone nonattainment areas classified at moderate or higher must be regulated under a SIP-approved RACT rule. With this amendment, Rule 322 no longer applies only to equipment for which construction commenced prior to May 10, 1996, but rather applies to all equipment that is listed in Sections 102.1 through 102.3.
- Section 104.1(c) (Partial Exemptions): Deleted the partial exemption for stationary gas turbines used for military training activities. The EPA commented in June 2016 to remove this exemption or provide definitions for the terms "military training facilities" and "military gas turbines" and demonstrate why these gas turbines should not be subject to the specified emission standards.
- Sections 104.2 and 104.3 (Partial Exemptions): Did not include proposed new text "and that is or will be incorporated in a permit issued by the Control Officer for that source" and did not include the text "which fires an emergency fuel but". Also, re-phrased the sections to read in part "…as allowed by a permit", per the Salt River Project Agricultural Improvement and Power District (SRP) comments.
- Section 104.4 (Partial Exemptions): Did not include the proposed new text "and that is or will be incorporated in a permit issued by the Control Officer for that source" and included Section 400 to the list of sections from which the equipment is exempt. The Arizona Public Service Company (APS) and SRP commented in June 2016 that if the low capacity exemption is linked to an actual permit, then it would be the equivalent of a case-by-case determination defeating the very purpose of this de minimis exemption. Also, APS and SRP commented that Section 400 should be included to the list of sections from which the equipment is exempt. Also, changed "less than or equal to" to "at or below" and changed "10 percent annual capacity factor per calendar year" to "10 percent calendar year annual capacity factor".
- Section 201 (Definition of "Annual Capacity Factor"): Added text to the definition to allow the definition to apply to steam units as well as gas turbines, per APS and SRP comments.
- Section 218 (Definition of "Low Sulfur Oil"): Deleted the definition of "Low Sulfur Oil". Added the definition of "Ultra Low Sulfur Diesel" to be consistent with federal standards.
- Section 220 (Definition of "Low Mass Emission (LME)": Did not include the definition of "LME" and removed the term from Sections 308.4 and 501.5. The EPA commented in

June 2016 that LME is not a suitable substitute for Continuous Emissions Monitoring Systems (CEMS) for the purposes of SIP compliance determination with an emissions limit.

- Section 229 (Definition of "Predictive Emission Monitoring System (PEMS)"): Did not include the proposed definition of "PEMS" and removed the term from Sections 308.4 and 501.5. The EPA commented in June 2016 that the usage of PEMS for compliance purposes be restricted to units with a heat input rate of 250 MMBtu/hr or less, which aligns with other Federal guidance.
- Section 232 (Definition of "Steady State"): Included "with equipment in normal operating conditions" after the phrase "at which a unit".
- Section 234 (Definition of "Thirty (30) Day Rolling Average"): Deleted the terms "equipment" and "every hour" and added text at the end of the definition to make the definition consistent with common practice, per APS and SRP comments.
- Section 236 (Definition of "Total Dissolved Solids (TDS)"): Deleted the second sentence and revised the first sentence to include test methods for determining TDS. The EPA commented in June 2016 that the second sentence should be removed and the first sentence should be modified to read "…glass fiber filter, as determined by Test Method XXX".
- Section 237 (Definition of "Ultra Low Sulfur Diesel"): Added the definition of "Ultra Low Sulfur Diesel". Deleted the definition of "Low Sulfur Oil" to be consistent with federal standards.
- Section 239 (Definition of "Waste Derived Fuel Gas"): Added the definition of "Waste Derived Fuel Gas" to be consistent with the other department "engine" rules – Rule 323 (Fuel Burning Equipment From Industrial/Commercial/Institutional (ICI) Sources) and Rule 324 (Stationary Internal Combustion (IC) Engines).
- Sections 301.1 and 301.2 (Limitations-Particulate Matter): Did not delete Sections 301.1 and 301.2 (the limitations for particulate matter-fuel type and testing). The EPA commented in June 2016 that Sections 301.1 and 301.2 should either be retained or the County should provide an adequate Clean Air Act Section 110(l) demonstration, which supports removing these requirements.
- Section 301.1 (Limitations-Particulate Matter): Included the wording "during steady state operations" after the phrase "more than 0.007 lbs. of particulate matter per MMBtu".
- Section 302 (Good Combustion Practices for Turbines): Did not include proposed new text "good combustion practices for turbines are considered to have been met" at the end of the last sentence. Instead, included at the end of the last sentence "then the equipment would be exempt from the requirements of Section 302 of this rule". The EPA commented in June 2016 that it appears that the department intends to say that if equipment is utilizing a CEMS, which already monitors various operating parameters, then the equipment would be exempt from the requirements of Section 302; revise accordingly.
- Section 304.2 (Limitations-Opacity): Did not change "of" to "or" in the phrase "for up to one hour during the startup of switching fuels…" Instead, changed "switching fuels" to "fuel switching startup process" (the term is defined in Rule 322). APS and SRP commented in June 2016 that it would appear that "of" was the correct choice and should not have been changed. To make it clearer, change "switching fuel" to "fuel switching startup process".
- Section 305 (Limitations-Sulfur in Fuel): Changed "low sulfur oil" to "ultra low sulfur diesel" and added a limitation for sulfur in waste derived fuel gas to be consistent with the other department "engine" rules – Rule 323 (Fuel Burning Equipment From Industrial/Commercial/Institutional (ICI) Sources) and Rule 324 (Stationary Internal Combustion (IC) Engines).
- Sections 306.1 and 306.2 (Limitations-Nitrogen Oxides (NO_X)): Added Section 400 to the list of sections from which a source would be exempt. APS commented in June 2016 that the department should also exempt the case-by-case RACT analysis from the requirements of Section 400 (Administrative Requirements), since it will conflict with the specific permit limit set forth by the case-by-case analysis.
- Sections 306.3 (Limitations-Nitrogen Oxides (NO_X)): Added the wording "during steady state operations" to the end of the last sentence to be consistent with similar standard in Section 307 (Limitations-Carbon Monoxide).
- Section 307 (Limitations-Carbon Monoxide): Did not include proposed new text "and combined cycle gas turbines" at the end of the second-to-the-last sentence. Instead, added

the phrase to the last sentence. APS commented in June 2016 that the department incorrectly placed combined cycle gas turbines in the 3% oxygen correction factor section. The correct location of combined cycle gas turbines is within the 15% oxygen correction factor section; this change lines up Sections 306.3 and 307 to have consistent factors.

- Section 308.1 (Requirements for ECS Monitoring Equipment): Did not include the proposed new text "or another approved combustion control system" at the end-of the sentence in Section 307.1. The EPA commented in June 2016 that the definition of "approved combustion control equipment" is unclear. The EPA commented that the EPA must review and approve any such alternative control systems if the criteria are not specific enough. The EPA asked that the County define the criteria for approval. Instead, the department included new text "a combustion control system which reduces emissions to below the applicable standards in Section 300 of this rule".
- Section 308.4(b) (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration): Did not include the proposed new text "or other monitoring system approved by the Control Officer" in Section 308.4(b). The EPA commented in June 2016 that the inclusion of "other monitoring system approved by the Control Officer" is an inappropriate allowance of Director's discretion; remove this statement or require EPA approval.
- Section 401 (Administrative Requirements-in Existence and in Compliance): Clarified that this section is not intended for units exempt in Section 104.4 by an annual capacity factor equal to or less than 10% or for units which are accepting a case-by-case RACT determination approved by the Control Officer. Include a compliance path for those sources which operate a unit below a 10% capacity factor or under a case-by-case RACT limitation and in the future elect to increase operations and may need to then come into compliance with the limits in Section 306, per APS and SRP comments.
- Section 402.1 (Administrative Requirements-in Existence and Non-Compliant): Clarified that this section is not intended for units exempt in Section 104.4 by an annual capacity factor equal to or less than 10% or for units which are accepting a case-by-case RACT determination approved by the Control Officer. Also, did not include the proposed last sentence regarding "interim compliance". APS commented in June 2016 that "interim compliance" does not appear to relate to the rulemaking; there are no "interim compliance" options in the rule.
- Section 402.3 (Administrative Requirements-in Existence and Non-Compliance-Removal From Service): Revised this section to be more functional for retiring units by making the effectiveness of the section not linked to the adoption of the rule but rather linked to the decision by the owner to retire the unit, per APS and SRP comments.
- Section 402.3(c) (Administrative Requirements-in Existence and Non-Compliance-Removal from Service): Removed the one month discrepancy in the sentences in the section. Revised the timeframes so they match.
- Section 403 (Administrative Requirements-Emergency Standby Units): Changed "electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power" to "emergency standby unit". APS and SRP commented in June 2016 that this section should address emergency standby units.
- Section 501.6 (Recordkeeping and Reporting-Good Combustion Practices): Did not include proposed new text "good combustion practices for turbines are considered to have been met" at the end of the last sentence. Instead, included at the end of the last sentence "then the equipment would be exempt from the requirements of Section 302 of this rule". The EPA commented in June 2016 that it appears that the department intends to say that if equipment is utilizing a CEMS, which already monitors various operating parameters, then the equipment would be exempt from the requirements of Section 302; revise accordingly.
- Section 501.7 (Recordkeeping and Reporting-Equipment Referenced in Sections 104.4, 306.1, and 306.2): Changed "covering a 12-month rolling period" to "of the annual capacity factor and NO_X emissions". APS and SRP commented in June 2016 that a 12-month rolling period conflicts with the limits in Sections 306.1 and 306.2, which are concentrations measured during a test conducted annually and also with the measurement of the annual capacity factor.
- Section 503.1 (Compliance Determination-Low Sulfur Oil Verification): Changed "low sulfur oil" to "ultra low sulfur diesel" and clarified that sulfur content verification

documents must provide accurate values and be based on enforceable test methods to determine sulfur content.

- Section 503.1(Compliance Determination-Low Sulfur Oil Verification): Revised the new text "sulfur content of the fuel oil to demonstrate the 0.0015% limits" to "sulfur content of the fuel to demonstrate the 0.0015% limit" and revised the new text in Section 503.1(f) from "testing of the fuel oil for sulfur content" to "test results of the fuel for sulfur content"
- Section 503.3 (Compliance Determination-Waste Derived Fuel Gas-Sulfur Verification): Added a provision for verifying sulfur content in waste derived fuel gas to be consistent with the other department "engine" rules – Rule 323 (Fuel Burning Equipment From Industrial/Commercial/Institutional (ICI) Sources) and Rule 324 (Stationary Internal Combustion (IC) Engines).
- Section 504 (Compliance Determination-Test Methods Incorporated By Reference): Deleted the provision allowing test methods to be used upon sole approval by the Control Officer and added text that allows test methods as approved by the Administrator to be used, per the EPA's comments.
- Section 504.15 (Compliance Determination-Test Methods Incorporated By Reference): Added ASTM D5907-13, Standard Methods for the Examination of Water and Wastewater for Filterable Matter (Total Dissolved Solids) and Nonfilterable Matter (Total Suspended Solids) in Water; test method is referenced in the definition of "Total Dissolved Solids (TDS)".
- Section 504.16 (Compliance Determination-Test Methods Incorporated By Reference): Added test method for determining the sulfur content in waste derived fuel gas to be consistent with the other department "engine" rules – Rule 323 (Fuel Burning Equipment From Industrial/Commercial/Institutional (ICI) Sources) and Rule 324 (Stationary Internal Combustion (IC) Engines); test method is referenced in Section 503.3.

13. **Summary of the comments made regarding the rule and the department response to them:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R. 1122), the department received comments from the Arizona Public Service Company (APS), Salt River Project Agricultural Improvement and Power District (SRP), and the U.S. Environmental Protection Agency (EPA). The comments and the department's responses are provided below.

Comment #1: Section 102 (Applicability)

The draft rule states that subject equipment built or modified after May 10, 1996 must comply with the limits in this rule, unless the equipment is already subject to more stringent federally enforceable standards, such as NSPS and NESHAPs standards. This exception conflicts with the Clean Air Act requirement that "major sources" in ozone nonattainment areas classified at moderate or higher must be regulated under a SIP-approved RACT rule. If the County determines that different levels of RACT are appropriate for different types, sizes, or ages of equipment, the EPA recommends outlining separate emission limits for these different classes of equipment.

Response #1: Section 102 (Applicability)

The department did not include proposed new text "except for equipment that was built or modified after May 10, 1996 that is already subject to more stringent federally and/or locally enforceable standards". With this amendment, Rule 322 no longer applies only to equipment for which construction commenced prior to May 10, 1996, but rather applies to all equipment that is listed in Sections 102.1 through 102.3.

Comment #2: Section 104.1(c) (Partial Exemptions)

This provision provides that gas turbines used for military training facilities and military gas turbines used anywhere other than a garrison are exempt from the listed sections. The EPA asks that the County remove this exemption or provide definitions for the terms "military training facilities" and "military gas turbines" and demonstrate in the rule's Staff report why these gas turbines should not be subject to the specified emission standards.

Response #2: Section 104.1(c) (Partial Exemptions)

The department deleted the partial exemption for stationary gas turbines used for military training activities.

Comment #3: Sections 104.2 and 104.3 (Partial Exemptions)

The County proposed adding the statement "and that is or will be incorporated in a permit issued by the Control Officer". To add clarity to the intent of the language, SRP proposes

changes this phrase to "as long as this is allowed by a permit issued by the Control Officer for that source".

Response #3: Sections 104.2 and 104.3 (Partial Exemptions)

The department did not include proposed new text "and that is or will be incorporated in a permit issued by the Control Officer for that source" and to not include the text "which fires an emergency fuel but". Rather than including new text "as long as this is allowed by a permit issued by the Control Officer for that source", the department re-phrased the sections to read in part "…as allowed by a permit…"

Comment #4: Section 104.4 (Partial Exemptions)

For units that operate at a low capacity factor (10% or less), the County has proposed a de minimis partial exemption. This partial exemption makes sense and works for several APS units that operate at low levels. However, between the final stakeholder workshop and the Proposed Rulemaking, the County added a counterintuitive requirement that an exempt unit would somehow need to operate under a specific permit limit. Upon reflection, we hope that the County can see the troubles caused by this position. The purpose of Section 104.4 is to provide a partial exemption from the requirements of Section 305, 306, 307.4 and 400 for units that operate at a low capacity factor. If the 10% is linked to an actual permit, then it would be the equivalent of a case-by-case determination under 305.1 defeating the very purpose of this de minimis exemption. Any unit operating under a Section 104.4 partial exemption is still required to keep records. If the unit exceeds the 10% threshold, this exemption no longer applies. At that time the unit would then no longer be excluded from Section 305 and would need to meet RACT through installation of control equipment or seek a case-by-case determination under Section 305.1 which would result in a permit limit. Accordingly, limiting this de minimis exemption by requiring a permit limits defeats the purpose of the partial exemption. To resolve this issue, APS recommends that the County remove the phrase "and that is or will be incorporated in a permit issued by the Control Officer for that source" from the sentence and add "and 400" to the sentence.

Response #4: Section 104.4 (Partial Exemptions)

The department did not include proposed new text "and that is or will be incorporated in a permit issued by the Control Officer for that source" and included Section 400 to the list of sections from which the equipment is exempt. Also, the department changed "less than or equal to" to "at or below" and changed "10 percent annual capacity factor per calendar year" to "10 percent calendar year annual capacity factor".

Comment #5: Section 104.4 (Partial Exemptions)

The proposed rule language would require a specific permit limitation. The revisions to Rule 322 already incorporate a pathway for compliance if a unit which has taken the partial exemption exceeds a 10% annual capacity factor. This would trigger an emissions limitation in Section 305 and a compliance demonstration in Section 401, and therefore there is no need for a specific limit to be incorporated into the permit. Additionally, units using this annual capacity factor partial exemption in Section 104.4, as well as units that submit a case-by-case reasonably available control technology (RACT) analysis in Sections 305.1 and 305.2 should be exempted from Section 400, as this section lists the requirements for notification of compliance and avenues to come into compliance, neither of which must be followed by units exempted by a low annual capacity factor or complying through a case-by-case RACT. Therefore, SRP proposes that the County revert to the previous draft language and add an exemption from Section 400.

Response #5: Section 104.4 (Partial Exemptions)

The department did not include proposed new text "and that is or will be incorporated in a permit issued by the Control Officer for that source" and included Section 400 to the list of sections from which the equipment is exempt. Also, the department changed "less than or equal to" to "at or below" and changed "10 percent annual capacity factor per calendar year" to "10 percent calendar year annual capacity factor".

Comment #6: Section 104.4 (Partial Exemptions)

The draft rule language presumes that equipment operating at less than or equal to 10% annual capacity factor is exempt from NO_X and CO limits and is exempt from emission control monitoring system requirements in Sections 305, 306, and 307.4. To ensure enforceability, the EPA asks that the County please provide a definition for the term "annual capacity factor" in Section 200.

Response #6: Section 104.4 (Partial Exemptions)

The department included a definition of "Annual Capacity Factor" in Section 200.

Comment #7: Section 201 (Definition of "Annual Capacity Factor")

The original definition was lacking a relationship to gas turbines. APS suggests the following change to allow it to apply to steam units as well as gas turbines. Add to the end of the last sentence "or the ratio between the actual electrical output of a machine or equipment during a calendar year and the potential electrical output of a machine or equipment had it been operated for 8,760 hours at full nameplate capacity".

Response #7: Section 201 (Definition of "Annual Capacity Factor")

The department added text to the definition of "Annual Capacity Factor" to allow the definition to apply to steam units as well as gas turbines.

Comment #8: Section 201 (Definition of "Annual Capacity Factor")

The definition of "Annual Capacity Factor" is specific to boilers and/or process heaters. In order to make the definition more generic so it can apply to combustion turbines too, SRP proposes adding to the end of the last sentence the phrase "or the ratio between the actual electrical output of a machine or equipment during a calendar year and the potential electrical output of a machine or equipment had it been operated for 8,760 hours during a year at full nameplate capacity."

Response #8: Section 201 (Definition of "Annual Capacity Factor")

The department added to the end of the last sentence of the definition of "Annual Capacity Factor" the phrase "or the ratio between the actual electrical output of a machine or equipment during a calendar year and the potential electrical output of a machine or equipment had it been operated for 8,760 hours during a year at full nameplate capacity."

Comment #9: Section 234 (Definition of "Thirty (30) Day Rolling Average")

The 30-day rolling average equation can be deceptively complex. To help make the definition as clear as possible, APS suggests the following changes: Delete "equipment" between "combustion" and "operating" and delete "every hour" at the end of the sentence. Add "at the conclusion of each day for the previous 30 operating" between "CEMS" and "days".

Response #9: Section 234 (Definition of "Thirty (30) Day Rolling Average")

The department deleted the terms "equipment" and "every hour" and added text at the end of the definition of "Thirty (30) Day Rolling Average" to make the definition consistent with common practice.

Comment #10: Section 234 (Definition of "Thirty (30) Day Rolling Average")

SRP proposes a different definition for "Thirty (30) Day Rolling Average" which is more consistent with common practice: "An arithmetic mean or average of all hourly emission rates for 30 successive combustion operating days and calculated by a CEMS at the conclusion of each day for the previous 30 operating days".

Response #10: Section 234 (Definition of "Thirty (30) Day Rolling Average")

The department deleted the terms "equipment" and "every hour" and added text at the end of the definition of "Thirty (30) Day Rolling Average" to make the definition consistent with common practice.

Comment #11: Section 236 (Definition of "Total Dissolved Solids (TDS")

The second sentence in the definition of "Total Dissolved Solids (TDS)" appears to describe the methodology that should be used to determine TDS. The EPA asks that the County remove the second sentence and re-write the first sentence to read "…glass fiber filter, as determined by Test Method XXX."

Response #11: Section 236 (Definition of "Total Dissolved Solids (TDS)")

The department removed the second sentence and re-wrote the first sentence to include test methods for determining TDS.

Comment #12: Section 301 (Limitations-Particulate Matter)

The EPA comments that the current language in Section 301 (Limitations-Particulate Matter) proposed for deletion only applies to two units constructed prior to 1996. Either retain these limits for those units at a minimum or provide an adequate Clean Air Act Section 110(l) demonstration which supports removing these requirements for those units.

Response #12: Section 301 (Limitations-Particulate Matter)

The department did not delete Sections 301.1 and 301.2 (the limitations for particulate matter-fuel type and testing).

Comment #13: Section 302 (Good Combustion Practices for Turbines)

The draft rule language appears to state that "good combustion practices" are met for turbines if CEMS are used (last sentence). It appears that the County intends to say that if equipment is utilizing a CEMS, which already monitors various operating parameters, then the equipment would be exempt from the requirements of Section 302. The EPA asks that the County revise accordingly if this is correct or otherwise clarify the intent of this last sentence. This provision is also found in Section 501.6.

Response #13: Section 302 (Good Combustion Practices for Turbines)
The department did not include proposed new text "good combustion practices for turbines are considered to have been met" at the end of the last sentence. Instead, the department included at the end of the last sentence "then the equipment would be exempt from the requirements of Section 302 of this rule".
Comment #14: Section 304.2 (Limitations-Opacity)
Section 304.2 appears to be related to the issue of fuel switching. The change proposed by the County seems to confuse the matter by inserting "or" into the sentence in place of "of". If would appear that "of" was the correct choice and should not have been changed. To make it clearer, APS would suggest changing "switching fuel" to "fuel switching", which lines up better with the final sentence in that section which also uses "fuel switching".
Response #14: Section 304.2 (Limitations-Opacity)
The department did not change "of" to "or" in the phrase "for up to one hour during the startup of switching fuels…". Instead, the department changed "switching fuels" to "fuel switching startup process" (the term is defined in Rule 322).
Comment #15: Section 304.2 (Limitations-Opacity)
The County seems to inadvertently have replaced the word "of" in the second sentence with the word "or". This should be changed back to "of" since the exemption allowed by this section pertains to the first hour during startup of fuel switching for those units that are allowed to fire emergency fuels. To avoid future confusions with this section of the rule, SRP proposes that the County consistently use the term "fuel switching startup process" throughout the rule, as defined in Section 217 (Definition of "Fuel Switching Startup Process").
Response #15: Section 304.2 (Limitations-Opacity)
The department did not change "of" to "or" in the phrase "for up to one hour during the startup of switching fuels…". Instead, the department changed "switching fuels" to "fuel switching startup process" (the term is defined in Rule 322).
Comment #16: Section 306 (Limitations-Nitrogen Oxides (NO_X))
As part of the RACT assessment, a unit may choose to use a case-by-case RACT analysis. The County has made provision for the case-by-case RACT analysis within Sections 306.1 and 306.2. Because the case-by-case RACT analysis is separate from the emission limit in Sections 306.1 and 306.2, the County correctly sought to exempt the case-by-case RACT analysis from these sections. However, it is important that the County also exempt the case-by-case RACT analysis from the requirements of Section 400 (parts 401 and 402), since it will conflict with the specific permit limit set forth by the case-by-case analysis. Accordingly, APS recommends that the County insert "Section 400" into the exemptions listed in Sections 306.1 and 306.2.
Response #16: Section 306 (Limitations-Nitrogen Oxides (NO_X))
The department added Section 400 to the list of sections from which a source would be exempt.
Comment #17: Section 307 (Limitations-Carbon Monoxide)
The County appears to have misplaced some clarifying language that was offered during the final workshop. In Section 307, the County incorrectly placed combined cycle gas turbines in the 3% oxygen correction factor section. The correct location of combined cycle gas turbines is within the 15% oxygen correction factor section, not the 3% section. This change also lines up Section 306.3 to have consistent factors.
Response #17: Section 307 (Limitations-Carbon Monoxide)
The department did not include proposed new text "and combined cycle gas turbines" to the end of the second-to-the-last sentence. Instead, the department added the phrase to the last sentence.
Comment #18: Section 307 (Limitations-Carbon Monoxide)
SRP believes the County incorrectly inserted "…and combined cycle gas turbines" in the wrong sentence of Section 307. That language should be inserted in the last sentence of that section: "The CO concentration shall be measured dry and corrected to 15% oxygen for stationary turbines and combined cycle gas turbines, during steady state operations".
Response #18: Section 307 (Limitations-Carbon Monoxide)
The department did not include proposed new text "and combined cycle gas turbines" to the end of the second-to-the-last sentence. Instead, the department added the phrase to the last sentence.
Comment #19: Section 308.1 (Requirements for ECS Monitoring Equipment)

The definition of "approved combustion control equipment" is unclear. The EPA asks that the County define the criteria for approval. The EPA must review and approve any such alternative control systems if the criteria are not specific enough.

Response #19: Section 308.1 (Requirements for ECS Monitoring Equipment)

The department did not include proposed new text "or another approved combustion control system" at the end-of the sentence in Section 308.1. Instead, the department included new text "a combustion control system which reduces emissions to below the applicable standards in Section 300 of this rule".

Comment #20: Section 308.4 (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The EPA recognizes that a Predictive Emissions Monitoring System (PEMS), if certified in accordance with the applicable provisions of Performance Specification 16, may be appropriate for certain emissions units. The EPA recommends, in their comments in June 2016, that their usage for compliance purposes be restricted to units with a heat input rate of 250 MMBtu/hr or less, which aligns with other Federal guidance.

Response #20: Section 308.4 (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The department did not include the proposed definition of "PEMS" and to remove the term from Sections 308.4 and 501.5.

Comment #21: Section 308.4(b) (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The inclusion of "other monitoring system approved by the Control Officer" is an inappropriate allowance of Director's discretion. The EPA asks the County to remove this statement or require EPA approval.

Response #21: Section 308.4(b) (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The department did not include the proposed new text "or other monitoring system approved by the Control Officer" in Section 308.4(b).

Comment #22: Section 308.4(b) (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The provision that allows the Control Officer to approve any other monitoring system to be equivalent to a CEMS is too broad. The EPA asks the County to strike this language or also require that the EPA must approve any such alternative monitoring system.

Response #22: Section 308.4(b) (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The department did not include the proposed new text "or other monitoring system approved by the Control Officer" in Section 308.4(b).

Comment #23: Section 308.4(b) (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The EPA comments that Low Mass Emissions (LME) as cited in Sections 219 and 308.4 is not a suitable substitute for Continuous Emissions Monitoring Systems (CEMS) for the purposes of SIP compliance determination with an emissions unit

Response #23: Section 308.4(b) (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The department did not include the proposed definition of "LME" and to remove the term from Sections 308.4 and 501.5.

Comment #24: Section 401 (Administrative Requirements-in Existence and in Compliance)

Section 400 is the operative section that helps define how the RACT standard will be implemented by the affected units. There are several disconnects and inconsistencies that should be addressed to make this section work as intended. First, it is important to make sure that partially exempt units are not pulled into Section 400. For example, Section 104.4 is a partial exemption as long as the unit maintains a capacity factor of 10% or less, and should not be required to comply with Section 400. In fact, it would be inconsistent, if not impossible, to do both. Second, it is important that any unit which chooses to undertake a case-by-case RACT analysis under Section 305.1 not be required to also comply with Section 400. That analysis is outside the scope of Section 400. Accordingly, a case-by-case RACT analysis under Section 305.1 should be exempt from Section 400. Third, the proposed rule language in Section 401 states that the owner of a unit "in compliance with" Section 305 shall submit a Notification of Compliance. It would appear that a better way to say this is to say "and subject to", since it will trigger the obligation, rather than assuming one is already met. Fourth-relates to the timeframe for submitting a notice. The proposed rule set the timeframe at

6 months from rule adoption. However, this creates a disconnect for a unit that may be exempt under Section 104.4 for a year because it ran at a capacity factor of less than 10%. If that unit in year two exceeded the partial exemption capacity factor and needed to comply with Section 305, there is no way it could submit a notice 6 months from rule adoption. Accordingly, APS thinks it would read better if the section said "6 months from becoming subject to Section 305 limits". Fifth-is to create a correlation between Step 1 (Section 401) and Step 2 (Section 402). If a unit cannot submit a Notification of Compliance, there needs to be an "if-then" response. APS proposes the language that says if you cannot comply with Section 401, then go to Section 402. Currently, the two sections are not linked and this creates a disconnect.

Response #24: Section 401 (Administrative Requirements-in Existence and in Compliance)
The department clarified that this section is not intended for units exempt in Section 104.4 by an annual capacity factor equal to or less than 10% or for units which are accepting a case-by-case RACT determination approved by the Control Officer and the department included a compliance path for those sources which operate a unit below a 10% capacity factor or under a case-by-case RACT limitation and in the future elect to increase operations and may need to then come into compliance with the limits in Section 306.

Comment #25: Section 401 (Administrative Requirements-in Existence and in Compliance)
Section 401 is intended for those units which are (or will be) in compliance with the NO_X limits in Section 305 by the date this rule is adopted. This section is not intended for units exempted in Section 104.4 by an annual capacity factor equal to or less than 10% or for units which are accepting a case-by-case RACT determination approved by the Control Officer and this should be clarified. Additionally, this section is missing a compliance path for those sources which operate a unit below a 10% capacity factor or under a case-by-case RACT limitation and in the future elect to increase operations and may need to then come into compliance with the limits in Section 305. Therefore, SRP is proposing to add to the beginning of the first sentence in Section 401 the phrase "except as set forth in Sections 104.4 and 305.1 of this rule".

Response #25: Section 401 (Administrative Requirements-in Existence and in Compliance)
The department clarified that this section is not intended for units exempt in Section 104.4 by an annual capacity factor equal to or less than 10% or for units which are accepting a case-by-case RACT determination approved by the Control Officer and the department included a compliance path for those sources which operate a unit below a 10% capacity factor or under a case-by-case RACT limitation and in the future elect to increase operations and may need to then come into compliance with the limits in Section 306.

Comment #26: Section 402.1 (Administrative Requirements-in Existence and Non-Compliant)
APS would recommend adding the exceptions of Sections 104.4 and 305.1 to Section 402. Additionally, APS would recommend deleting the last sentence of Section 402, as it does not appear to relate to the rulemaking. APS is unaware of any "interim compliance" options within the rule.

Response #26: Section 402.1 (Administrative Requirements-in Existence and Non-Compliant)
The department clarified that this section is not intended for units exempt in Section 104.4 by an annual capacity factor equal to or less than 10% or for units which are accepting a case-by-case RACT determination approved by the Control Officer. Also, the department did not include the proposed last sentence regarding "interim compliance".

Comment #27: Section 402.3 (Administrative Requirements-in Existence and Non-Compliance-Removal from Service)
This section provides an avenue for units that would be retired from service in lieu of emissions controls or a case-by-case RACT analysis and permit limit. To make this section more functional for the retiring units, it is important to make the effectiveness of the section not linked to the adoption of the rule, but rather linked to the decision by the owner to retire the unit. For example, Section 402.3 limits the window of opportunity to only 24 months. If a Section 104.4 partial exemption unit is exempt for 2 years and then exceeds its capacity factor, rather than installing emissions controls to meet Section 305, it may seek removal from service. As proposed, this would not be possible since this section would only be available for 24 months after the rule is adopted. Instead, APS suggests that Section 402.3 be based on when a unit otherwise becomes subject to Section 305 emission limits. The offered language makes this possible without changing obligations on existing units which do not have a partial exemption. The second issue is to add a similar scope to the Section 402.3(a) which, as written, limits the ability of a unit to submit a notice for removal from service to only 6

months after rule adoption. As noted above, by linking it to when a unit becomes subject to Section 305 emissions limits provides an option for units which may be otherwise exempt during the first 6 months after the rule is adopted. The third issue is to remove the requirement for "requesting an exemption" and instead require that the owner or operator merely submit a notice of proposed removal. This reduces the burden on the County to create and issue an exemption when there is no reason for the extra paperwork. Additionally, it reduces any delay caused by waiting on the County to issue the exemption. As amended, the unit would submit the notice and then proceed to the formal submittal of the decommissioning plant and permit revision, which is the document upon which the County can focus its efforts. Finally, Section 402.3(c) appears to have a mismatch between the use of 4 months of plan approval and in the final sentence a limitation on operations past 3 months. This inconsistency can be fixed by merely changing the 3 months to 4 months.

Response #27: Section 402.3 (Administrative Requirements-in Existence and Non-Compliant-Removal from Service)

The department made this section more functional for retiring units by making the effectiveness of the section not linked to the adoption of the rule but rather linked to the decision by the owner to retire the unit.

Comment #28: Section 402.3 (Administrative Requirements-in Existence and Non-Compliance-Removal from Service)

Section 402.3 defines the requirements for units that will be removed from service within 24 months of the rule being adopted. Such units will exempt from the limits of Section 305 as long as the owner or operator notifies the County of the intent to remove from service within 6 months of rule adoption. To avoid any delays in the timing of the notification, the decommissioning plan and permit revision (required in Section 402.3(b)), SRP proposes this section require a notification of removal of service, rather than requesting an exemption, which is already granted in the previous paragraph in that rule section. This section is also missing a compliance path for those sources which operate a unit below a 10% capacity factor or under a case-by-case RACT limitation and in the future elect to increase operations and may need to then come into compliance with the limits in Section 305. SRP suggests removing the phrase "requesting an exemption from the emission limits in Section 305 of this rule" and removing the phrase "receiving the exemption".

Response #28: Section 402.3 (Administrative Requirements-in Existence and Non-Compliant-Removal from Service)

The department made this section more functional for retiring units by making the effectiveness of the section not linked to the adoption of the rule but rather linked to the decision by the owner to retire the unit.

Comment #29: Section 402.3(c) (Administrative Requirements-in Existence and Non-Compliant-Removal from Service)

There is a one month discrepancy in the sentences in this section; it makes it seem as if the County is requiring affected sources that choose to take the full 4 months after plan/revision approval to discontinue operations to come into compliance with the limits of the rule (and possibly install controls) for one month before the final removal from service. SRP believes that to make this section clearer, the timeframes should be revised to match.

Response #29: Section 402.3(c) (Administrative Requirements-in Existence and Non-Compliant-Removal from Service)

The department removed the one month discrepancy in the sentences in the section. The department revised the timeframes so they match.

Comment #30: Section 403 (Administrative Requirements-Emergency Standby Units)

In this Section, the County appears to be limiting the affected units to "emergency standby units"; however, the sentence includes all affected units. APS comments that the solution for this paragraph would be to limit the affected units.

Response #30: Section 403 (Administrative Requirements-Emergency Standby Units)

The department changed "electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power" to "emergency standby unit".

Comment #31: Section 403(Administrative Requirements-Emergency Standby Units)

SRP comments that Section 403 incorrectly addresses electric utility stationary gas turbines, electric utility steam generating units and cogeneration steam generating units, when the section should be addressed to emergency standby units only.

Response #31: Section 403 (Administrative Requirements-Emergency Standby Units)

The department changed "electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power" to "emergency standby unit".

Comment #32: Section 501.6 (Recordkeeping)

The draft rule language appears to state that "good combustion practices" are met for turbines if CEMS are used (last sentence). It appears that the County intends to say that if equipment is utilizing a CEMS, which already monitors various operating parameters, then the equipment would be exempt from the requirements of Section 301. The EPA asks that the County revise accordingly if this is correct or otherwise clarify the intent of this last sentence. This provision is also found in Section 501.6.

Response #32: Section 501.6 (Recordkeeping)

The department did not include proposed new text "good combustion practices for turbines are considered to have been met" at the end of the last sentence. Instead, the department included at the end of the last sentence "then the equipment would be exempt from the requirements of Section 302 of this rule".

Comment #33: Section 501.7 (Recordkeeping)

Under the recordkeeping requirements, the County proposes that the records demonstrating compliance with Sections 104.4, 305.1, and 305.2 include 12 month rolling averages. The inclusion of "12 month rolling period" conflicts with the measurements set forth in Section 305.1 and 305.2. The general purpose of this section appears to be a requirement to keep records. By eliminating the contradictory language, APS can still maintain the necessary records and not introduce confusion to the compliance obligation.

Response #33: Section 501.7 (Recordkeeping)

The department changed "covering a 12-month rolling period" to "of the annual capacity factor and NO_X emissions".

Comment #34: Section 501.7 (Recordkeeping)

While SRP agrees that records must be kept to demonstrate compliance with the annual capacity factor and the limitations, a "12-month rolling period" conflicts with the limits in Sections 305.1 and 305.2, which are concentrations measured during a test conducted annually, and also with the measurement of the annual capacity factor. SRP proposes the following: "Records of the annual capacity factor and NO_X emissions demonstrating compliance with Sections 104.4, 305.1 and 305.2".

Response #34: Section 501.7 (Recordkeeping)

The department changed "covering a 12-month rolling period" to "of the annual capacity factor and NO_X emissions".

Comment #35: Section 504 (Compliance Determination-Test Methods Incorporated By Reference)

Alterative test methods may not be used upon sole approval by the Control Officer. The EPA asks the County to delete this provision or include language that also requires EPA approval for alternative methods.

Response #35: Section 504 (Compliance Determination-Test Methods Incorporated By Reference)

The department deleted the provision allowing test methods to be used upon sole approval by the Control Officer and added text that allows test methods as approved by the Administrator to be used.

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

Not applicable

15. **Incorporations by reference and their location in the rule:**

The department incorporated by reference sections of the Code of Federal Regulations in the following sections of the rule:

Section 308.4 (Continuous Emission Monitoring Systems)

Section 504 (Compliance Determination-Test Methods Incorporated By Reference)

16. **Was this rule previously an emergency rule?**

No

17. **Full text of the rule follows:**

MARICOPA COUNTY

AIR POLLUTION CONTROL REGULATIONS

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 322

POWER PLANT OPERATIONS

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~~Adopted 7/02/03~~
~~Revised 10/17/07~~

Adopted 07/02/2003; Revised 10/17/2007; **Revised 11/02/2016**

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 equipment at ~~existing power plants and existing cogeneration plants~~ electric utility stationary gas turbines, electric utility steam generating units or cogeneration steam generating units and to limit particulate matter emissions from cooling towers associated with this equipment.

102 APPLICABILITY: This rule applies to ~~any of~~ the following types of equipment that burn fossil fuel: ~~for which construction commenced prior to May 10, 1996~~

102.1 Each electric utility steam generating unit or cogeneration steam generating unit used to generate electric power that has a heat input of equal to or greater than 100 million (MM) Btu/hour (29 megawatts (MW)).

102.2 Each electric utility stationary gas turbine with a heat input at peak load equal to or greater than 10 MMBtu/hour (2.9 MW) based upon the lower heating value of the fuel.

102.3 Each cooling tower associated with the type of equipment listed in ~~subsections 102.1 and 102.2~~ 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 equipment.

104 PARTIAL EXEMPTIONS:

104.1 ~~Stationary gas turbines that meet any of the following criteria listed below are exempt from Sections 304 and 305 and subsections 301.1, 301.2, 306.4, and 501.4 of this rule:~~

~~a. Used for fire-fighting; or~~

~~b. Used for flood control; or~~

~~c. Used in the military at military training facilities or military gas turbines for use in other than a garrison; or~~

~~d. Engaged by manufacturers in research and development of equipment for either gas turbine emission control techniques or gas turbine efficiency improvements.~~

104.2 ~~All equipment listed in Section 102 fired with an emergency normally fired with natural gas is exempt from Sections 304 and 305 and subsections 301.1, 301.2, and 306.4, 501.4 of this rule.~~

104.3 ~~All equipment listed in Section 102 shall be exempt from Sections 304 and 305 and subsections 301.1, 301.2, and 306.4 306.6, of this rule for 36 cumulative hrs. of firing emergency fuel per year, per unit for testing, reliability, training, and maintenance purposes.~~

104.1 Stationary gas turbines that meet any of the criteria listed below are exempt from Sections 301.1, 301.2, 306, 307, 308.4 and 501.4 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 Any equipment listed in Section 102 of this rule that is normally fired with natural gas, as allowed by a permit issued by the Control Officer for that source, is exempt

from Sections 301.1, 301.2, 306, 307, 308.4, 400 and 501.4 of this rule while firing emergency fuel.

104.3 Any equipment listed in Section 102 of this rule that only fires emergency fuel for 36 cumulative hours per year or less, per unit for testing, reliability, training, and maintenance purposes as allowed by a permit issued by the Control Officer for that source, is exempt from Sections 301.1, 301.2, 306, 307, 308.4, and 400 of this rule.

104.4 Any equipment listed in Section 102 of this rule that operates at or below 10 percent calendar year annual capacity factor is exempt from Sections 306, 307, 308.4 and 400 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.~~ 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 boiler or process heater from the fuels burned during a calendar year and the potential heat input to the boiler or process heater had it been operated for 8,760 hours during a year at the maximum steady state design heat input capacity or the ratio between the actual electrical output of a machine or equipment during a calendar year and the potential electrical output of a machine or equipment had it been operated for 8,760 hours during a year at full nameplate capacity.

~~201~~ **202 COGENERATION STEAM GENERATING UNIT:** A steam or hot water generating unit that simultaneously produces both electrical (or mechanical) and 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.

~~202~~ **203 COMBINED CYCLE GAS TURBINE:** A type of stationary gas turbine wherein heat from the turbine exhaust is recovered by a steam generating unit to make steam for use in a steam-electric turbine.

~~203~~ **204 CONTINUOUS EMISSION MONITORING SYSTEM (CEMS):** The total equipment required to sample and analyze emissions or process parameters such as opacity, nitrogen oxide, and oxygen or carbon dioxide, and to provide a permanent data record.

~~204~~ **205 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.

~~205~~ **206 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 changes, and progress reports.

~~206~~ **207 DISTILLATE OIL:** A petroleum fraction of fuel oil produced by distillation that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-01, "Standard Specification for Fuel Oils."

~~207~~ **208 DRIFT:** Water droplets, bubbles, and particulate matter that escape from cooling tower stacks.

~~208~~ **209 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~~ **210 DRIFT RATE:** Percentage (%) of circulating water flow rate that passes through a drift eliminator on a cooling tower.

~~210~~ **211 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. Both simple and combined cycle gas turbines are types of electric utility stationary gas turbines.

~~211~~ **212 ELECTRIC UTILITY STEAM GENERATING UNIT:** Any steam electric generating unit that uses fossil fuel 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~~ **213 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.

214 **EMERGENCY STANDBY UNIT:** A stationary gas turbine that is limited by permit condition to be operated only as a mechanical or electrical power source for a facility when the primary power source for a facility has been rendered inoperable due to failure beyond the reasonable control of the operator, except due to power interruption pursuant to an interruptible power supply agreement. Electricity generated by such a unit cannot be sold.

~~213~~ 215 **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.

~~214~~ 216 **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~~ 217 **FUEL SWITCHING STARTUP PROCESS:** The act of changing from one type of fuel to a different type of fuel.

~~216~~ 218 **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~~ 219 **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~~ 220 **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~~ 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:

~~220.1~~ 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

~~220.2~~ 221.2 A natural disaster; or

~~220.3~~ 221.3 The natural gas is curtailed pursuant to governing state, federal or local agency rules or orders; or

~~220.4~~ 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.

~~221~~ 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.

~~222~~ 224 **PARTICULATE MATTER EMISSIONS:** Any and all particulate matter emitted to the ambient air as measured by applicable state and federal test methods.

~~223~~ 225 **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).

~~224~~ 226 **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.

~~225~~ 227 **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.

~~226~~ 228 **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.

~~227~~ 229 **RESIDUAL OIL:** The heavier oils that remain after the distillate oils and lighter hydrocarbons are distilled off in refinery operations. This includes crude oil or fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05 % by weight, and all fuel oil

numbers 4, 5, and 6, as defined by the American Society of Testing and Materials in ASTM D396-01, "Standard Specifications for Fuel Oils."

~~228~~ **230** **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, or that does not recover heat from the gas turbine exhaust gases to heat water or generate steam.

~~229~~ **231** **STATIONARY GAS TURBINE:** Any simple cycle gas turbine, regenerative gas turbine or any gas turbine portion of a combined cycle gas turbine that is not self-propelled or that is attached to a foundation.

232 **STEADY STATE:** A safe, stable megawatt load at which a unit with equipment in normal operating conditions is capable of being held for an extended period of time, without creating an unsafe or unstable operating condition.

~~230~~ **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.

~~231~~ **234** **THIRTY (30) DAY ROLLING AVERAGE:** An arithmetic mean or average of all hourly emission rates for 30 successive combustion ~~equipment~~ operating days and calculated by a CEMS ~~every hour~~ at the conclusion of each day for the previous 30 operating days.

~~232~~ **235** **THREE (3) HOUR ROLLING AVERAGE:** An arithmetic mean or average of the most recent three one (1) hour tests, or an arithmetic mean or average over a period of three hours which is newly calculated with each hourly measurement.

~~233~~ **236** **TOTAL DISSOLVED SOLIDS (TDS):** The amount of concentrated matter reported in milligrams/liter (mg/l) or parts per million (ppm) ~~left after filtration of a well-mixed sample through a standard glass fiber filter~~, as determined by an applicable method in the Standard Methods for the Examination of Water and Wastewater, a conductivity/TDS meter, or ASTM D5907. ~~The filtrate is evaporated to dryness in a weighed dish and dried to constant weight at 180□C and the increase in dish weight represents the total dissolved solids.~~

237 **ULTRA LOW SULFUR DIESEL:** Fuel oil containing less than or equal to 0.0015 % sulfur by weight.

~~234~~ **238** **UNCOMBINED WATER:** Condensed water containing no more than analytical trace amounts of other chemical elements or compounds.

239 **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 LIMITATIONS – PARTICULATE MATTER:

301.1 Fuel Type: An owner or operator of any combustion equipment listed in Section 102 shall burn only natural gas except when firing emergency fuel per ~~subsections~~ 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 during steady state operations, demonstrated and documented through performance testing of this alternate fuel using Test Method 5. This usage of different fuels other than natural gas shall be approved by the Control Officer prior to usage.

301.2 Particulate Matter Testing: A backhalf analysis shall be performed, using Reference Method 202 referenced in ~~subsection~~ Section 504.6 of this rule, each time a compliance test for particulate matter emissions to meet the standard in ~~subsection~~ Section 301.1 of this rule is performed using Test Method 5.

~~301.3~~ **302** **GOOD COMBUSTION PRACTICES FOR TURBINES:** ~~An~~ During steady state operations, an owner or operator of any stationary gas turbine listed in ~~subsection 102.2~~ Section 102.2 of this rule, regardless of fuel type, shall use operational practices recommended by the manufacturer and parametric monitoring to ensure good combustion control as listed below. One of the following procedures may be used. For the purposes of this rule, if a CEMS or another approved monitoring method is used, then the equipment would be exempt from the requirements of Section 302 of this rule.

~~a.~~ **302.1** 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 across the burners to demonstrate good combustion practices shall be measured from at least one minute data point during a complete steady state operating hour. If a valid maximum 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; or

~~b.~~ **302.2** If the manufacturer recommends that the maximum numerical temperature differential to ensure good combustion is a temperature that is greater than 100°F, then proof of this maximum alternate temperature shall be submitted to the Control Officer. The procedure to measure the maximum temperature differential listed ~~above~~ in ~~subsection 301.3a~~ Section 302.1 of this rule shall then be followed using this alternate recommended maximum temperature differential after approval by the Control Officer.

~~c.~~ **302.3** If the frequency of failure to meet the proper temperature differential of 100°F or to meet the alternate temperature differential recommended by the manufacturer reflects a pattern that the turbine is not being operated in a manner consistent with good combustion practices, then the Control Officer may require the owner or operator to submit a Corrective Action Plan (CAP).

~~301.4~~ **303** **COOLING TOWERS:** An owner or operator of a cooling tower associated with applicable units listed in Section 102 of this rule shall:

~~a.~~ **303.1** Equip the cooling tower with a drift eliminator. The drift eliminator shall not be manufactured out of wood.

~~b.~~ **303.2** The concentration of Total Dissolved Solids (TDS) multiplied by the percentage of drift rate shall not exceed the maximum numerical limit of 20.

~~c.~~ **303.3** Visually inspect the drift eliminator on a monthly basis only if the drift eliminator can be viewed safely and does not require an owner or operator to walk into the tower. If the drift eliminator cannot be safely inspected monthly then ~~subsection 301.4d~~ Section 303.4 of this rule shall apply:

~~d.~~ **303.4** Visually inspect the drift eliminator for integrity during a regularly scheduled outage when the cooling tower is not operating, if it cannot be inspected on a monthly basis. This visual inspection shall be no less than once per year.

~~302~~ **304** **LIMITATIONS – OPACITY:**

~~302.1~~ **304.1** ~~No person shall~~ 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, except as provided in ~~subsection 302.2~~ Section 304.2 of this rule.

~~302.2~~ **304.2** Opacity may exceed the applicable limits established in ~~subsection 302.1~~ Section 304.1 of this rule for up to one hour during the ~~startup of switching fuels~~ fuel switching startup process; however, opacity shall not exceed 40% for any six (6) minute averaging period in this one hour period, 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. The one hour period shall begin ~~at the moment of startup of fuel switching~~ when the fuel switching startup process begins.

~~302.3~~ **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.

~~303~~ **305** **LIMITATIONS - SULFUR IN FUEL:** An owner or operator of any applicable equipment listed in Section 102 of this rule that burns fuel oil alone or in combination with any other fuel as either emergency fuel or non-emergency fuel ~~that meets the standards in subsection 301.1~~ shall use only ~~low sulfur oil~~ ultra low sulfur diesel. An owner or operator using 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~~ **306** **LIMITATIONS – NITROGEN OXIDES (NO_x):** ~~No~~ An owner or operator of any applicable equipment listed in ~~subsection 102.1~~ Section 102.1 and 102.2 of this rule ~~that commenced construction or a major modification after May 30, 1972~~ shall not cause to be discharged into the atmosphere nitrogen oxides in excess of the following limits:

~~304.1~~ **306.1** ~~155 ppmv~~ 42 ppmdv, calculated as nitrogen dioxide when burning gaseous fossil fuel. During steady state operations, this test result using EPA Reference Method(s) 7 or other EPA-approved test method designated by the Control Officer shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour. If ~~a Continuous Emission Monitoring System (~~CEMS~~)~~ is used for the compliance demonstration, the ~~test result~~ compliance

demonstration shall be based upon a 30-day rolling average. Any source for which the owner or operator submits to the department a case-by-case reasonably available control technology analysis that is or will be incorporated in a permit issued by the Control Officer for that source, is exempt from Sections 306, 308.4, and 400 of this rule.

~~304.2~~ **306.2** ~~230 ppmv~~ 65 ppmdv calculated as nitrogen dioxide when burning liquid fossil fuel. During steady state operations, this test result using EPA Reference Method(s) 7 or other EPA-approved test method designated by the Control Officer, shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour. If a CEMS is used for the compliance demonstration, the ~~test result~~ compliance demonstration shall be based upon a 30-day rolling average. Any source for which the owner or operator submits to the department a case-by-case reasonably available control technology analysis that is or will be incorporated in a permit issued by the Control Officer for that source, is exempt from Sections 306, 308.4, and 400 of this rule.

~~304.3~~ **306.3** The nitrogen oxides concentration shall be measured dry and corrected to 3% oxygen for electric utility steam generating units and cogeneration steam generating units. The nitrogen oxides concentration shall be measured dry and corrected to 15% oxygen for stationary gas turbines and for combined cycle gas turbines, during steady state operations.

~~305~~ **307** **LIMITATIONS - CARBON MONOXIDE:** An owner or operator of any equipment listed in Section 102 of this rule shall not cause to be discharged into the atmosphere carbon monoxide (CO) measured in excess of 400 ppmv at any time. ~~This~~ During steady state operations, this test result, using EPA Reference Method 10 or other EPA-approved test method designated by the Control Officer and performed during steady state compliance source testing, shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour. The CO concentration shall be measured dry and corrected to 3% oxygen for electric utility steam generating units and cogeneration steam generating units. The CO concentration shall be measured dry and corrected to 15% oxygen for stationary gas turbines and for combined cycle gas turbines, during steady state operations.

~~306~~ **308** **REQUIREMENTS FOR ~~AIR POLLUTION CONTROL EQUIPMENT AND~~ ECS MONITORING EQUIPMENT:**

~~306.1~~ **308.1** ~~Emission Control System Required:~~ For affected operations which may exceed any of the applicable standards set forth in Section 300 of this rule, an owner or operator may comply by installing and operating an emission control system (ECS) or a combustion control system which reduces emissions to below the applicable standards in Section 300 of this rule.

~~306.2~~ **308.2** ~~Providing and Maintaining ECS Monitoring Devices: No~~ An owner or operator required to use an approved ECS pursuant to this rule shall not do so without first 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 Operation and Maintenance (O&M) Plan.

~~306.3~~ **308.3** **Operation and Maintenance (O&M) Plan Required for ECS:**

a. General Requirements: An owner or operator shall provide and maintain an O&M Plan 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 permit.

b. Approval by Control Officer: An 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. Initial Plans: An owner or operator ~~that~~ who is required to have an O&M Plan pursuant to this rule shall comply with all O&M Plans that the owner or operator has submitted for approval, but which have not yet been approved, unless notified by the Control Officer in writing. Once the initial plan has been approved in writing by the Control Officer, an owner or operator shall then comply with the approved plan.

d. Revisions to Plan: ~~If revisions to the initial plan have been approved by the Control Officer in writing, an owner or operator shall comply with the revisions to the initial plan. If revisions to the plan have not yet been approved by the Control Officer, then an~~ An owner or operator ~~shall comply with the newest recent~~ may

revise an initial O&M plan by submitting written revisions to the Control Officer ~~on file at Maricopa County Air Quality Department~~. The owner or operator shall at all times comply with the latest version of the O&M Plan submitted to the Control Officer.

e. Control Officer Modifications to Plan: After discussion with the owner or operator, the Control Officer may modify the plan in writing prior to approval of the initial O&M plan. An owner or operator shall then comply with the plan that has been modified by the Control Officer.

~~306.4~~ **308.4** ~~Continuous Emission Monitoring Systems (CEMS)~~ **Emission Compliance Demonstration:**

a. An owner or operator of ~~a combustion unit~~ an electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power subject to Section ~~304~~ 306 of this rule with a heat input of greater than 250 MMBtu/hr, regardless of fuel type, shall install, calibrate, maintain, and operate a CEMS or conduct stack tests as approved by the Control Officer for measuring nitrogen oxides. ~~and recording the output of the system.~~ Where nitrogen oxide emissions are monitored by a CEMS, then a CEMS shall also be required for the measurement of the oxygen content of the flue gases. All CEMS shall comply with the provisions in ~~40 CFR Subpart Da, Part 60, 60.47 (a)~~ 40 CFR Part 60.

b. An owner or operator of any affected ~~unit~~ electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power listed above that requires a CEMS for nitrogen oxides that meets and is continuing to meet the requirements of 40 CFR Part 75 or Part 60 may use that CEMS to meet the requirements of ~~subsection 306.4 a~~ Section 308.4(a) of this rule.

~~307~~ **309** **EMERGENCY FUEL USE NOTIFICATION:** An owner or operator of ~~a unit~~ 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 ~~subsections 104.2 and 212~~ 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.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS ~~(NOT APPLICABLE)~~

401 **IN EXISTENCE AND IN COMPLIANCE:** Except as set forth in Section 104.4 of this rule and the case-by-case RACT analysis of Section 306.1 of this rule, 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 November 2, 2016 and subject to the emission limits in Section 306 of this rule shall submit a Notification of Compliance within 6 months of becoming subject to Section 306 of this rule. This Notification shall indicate how compliance with the NO_X limit has been determined and if performance testing is required to demonstrate compliance. If performance testing is required to demonstrate compliance, the Notification shall include a timeline for the test. Performance test results from a past test may be used for this determination, as long as the test was conducted within 5 years before November 2, 2016. If compliance under Section 401 of this rule cannot be demonstrated, an owner or operator of any electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generation unit used to generate electric power shall comply with Section 402 of this rule.

402 **IN EXISTENCE AND NON-COMPLIANT:**

Except as set forth in Section 104.4 of this rule and the case-by-case RACT analysis of Section 306.1 of this rule, when air pollution control equipment is required to achieve the emission limits in Section 306 of this rule, the owner or operator shall comply with the increments of progress in Section 402.2 of this rule and be in compliance with the emission limits by the date specified in Section 402.2 of this rule.

Increments of Progress: 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 subject to the emission limits in Section 306 of this rule shall comply with the following increments of progress. The Control Officer, upon the request of the owner or operator, may extend the increments of progress.

The following compliance schedule does not apply to units already compliant with this rule as of November 2, 2016:

a. Within 18 months of becoming subject to the emission limits in Section 306 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 of this rule and submit to the Control Officer a complete source test report indicating compliance.

Removal From Service: 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 November 2, 2016 that is expected to be removed from service within 24 months of becoming subject to Section 306 of this rule shall be exempt from the emission limits in Section 306 of this rule if it complies with the following:

a. Within 6 months of becoming subject to the limits in Section 306 of this rule, submit to the Control Officer a notification of proposed removal from service.

b. Within 14 months of submitting notification under Section 402.3(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, 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. Operation of any electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power beyond 4 months of decommissioning plan and permit revision approval, shall be conducted in compliance with the emission limits in Section 306 of this rule.

403 **EMERGENCY STANDBY UNITS:** The owner or operator of any emergency standby unit in existence prior to November 2, 2016 shall by January 2, 2017, submit to the Control Officer a notification requesting an exemption from the requirements of Section 300 of this rule.

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 or his designee upon request. Records shall consist of the following information:

Equipment Listed in Section 102 of this Rule: Type of fuel used, amount of fuel used, amount of sulfur in the fuel if using liquid fuel, and the days and hours of operation.

Cooling Towers: Monthly gravimetric testing reports for TDS 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.

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 ~~subsections 104.2 and 104.3~~ Sections 104.2 and 104.3 of this rule.

Fuel Switching: Monthly records of fuel switching including stop and start times, monthly records of hours of operation for testing, reliability and maintenance purposes per ~~subsection 104.3~~ Section 104.3 of this rule, and a yearly log total of these hours.

~~CEMS~~ **Continuous Emission Monitoring Systems:** All CEMS measurements, results of CEMS performance evaluations, CEMS calibration checks, and adjustments and maintenance performed on these systems.

Good Combustion Practices: Measurements of the temperature differential across the burners of turbines per ~~subsection 301. 3 a, b, or c~~ Section 302 of this rule, results of evaluation and of corrective action taken to reduce the temperature differential or a finding that the temperature differential returned to the range listed in ~~subsection 301.3~~

~~a or b~~ Sections 302.1 or 302.2 of this rule without any action by the owner or operator. For the purposes of this rule, if a CEMS or other approved monitoring method is used, then the equipment would be exempt from the requirements of Section 302 of this rule.

Equipment Referenced in Sections 104.4, 306.1, and 306.2: Maintain records of the annual capacity factor and NO_X emissions to demonstrate compliance with Sections 104.4, 306.1, or 306.2 of this rule, 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 DETERMINATION:

~~Low Sulfur Oil~~ **Ultra Low Sulfur Diesel Verification:** 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:

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

The items listed above must provide accurate sulfur content values or be based on enforceable test methods as approved by the Administrator to determine the sulfur content.

~~a. An owner or operator shall submit fuel oil or liquid fuel receipts from the fuel supplier indicating the sulfur content of the fuel or verification that the oil used to generate electric power meets the 0.05% sulfur limit if requested by the Control Officer; or~~

~~b. If fuel receipts are not available then an owner or operator shall submit a statement of certification or proof of the sulfur content of the oil or liquid fuel from the supplier to the Control Officer; or~~

~~c. An owner or operator may elect to test the fuel for sulfur content in lieu of certification from the fuel supplier or fuel receipts using one of the test methods listed in subsections 504.11, 504.12, 504.13 or 504.14.~~

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.

Waste Derived Fuel Gas – Sulfur Verification: The owner or operator shall submit documentation of the concentration of the sulfur level 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 307-94 Determination of Sulfur in a Gaseous Matrix.

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 ~~The EPA test methods as they exist in the Code of Federal Regulations (CFR) (July 1, 2004), as listed below,~~ 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 ~~595~~125, Phoenix, AZ 85004-1942. ~~The Standard Methods listed below (1995) are also incorporated by reference. When more than one test method as listed in subsections 504.11 through 504.14 is permitted for the same determination, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation.~~

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).

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 Velocityand 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 Concentrationsin Emissions From StationarySources(Instrumental Analyzer Procedure)"), 3B("Gas Analysis for the Determination of Emission Rate Correction Factor of 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 ReferenceMethod 5 ("DeterminationofParticulate Emissions from Stationary Sources") (40 CFR60, Appendix A).

504.6 EPA ReferenceMethod 202 ("Determinationof Condensable Particulate Emissions from Stationary Sources") (40 CFR51, Appendix M).

504.7 EPA Reference Methods7 ("Determination of NitrogenOxide Emissions from Stationary Sources"), 7A ("Determinationof Nitrogen Oxide Emissions from Stationary Sources"), 7B ("Determinationof NitrogenOxide Emissions from Stationary Sources -Ultraviole t Spectrometry"), 7C("Determination of Nitrogen Oxide Emissions from StationarySources- Alkaline-Permanganate Colorimetric Method"), 7D ("Determinationof NitrogenOxide Emissions from Stationary Sources – Alkaline-PermanganateChromatographicMethod"), and 7E ("Determinationof Nitrogen OxideEmissions from Stationary Sources – Instrumental Analyzer Method") (40 CFR60, Appendix A).

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

504.9 EPA ReferenceMethod 10 ("Determinationof Carbon Monoxide Emissionsfro m Stationary Sources") (40 CFR 60, Appendix A).

504.10 EPA ReferenceMethod 20 ("Determination of NitrogenOxides, Sulfur Dioxide and Diluent Emissions from StationaryGas Turbines") (40 CFR 60, Appendix A).

504.11 ~~American Societyof TestingMaterials, ASTMMetho d D2622-98~~16, ~~("~~Standard Test Method for Sulfur in Petroleum Products byWavelength Disperse X-Ray FluorescenceSpectrometr y"~~),1998.~~

~~504.12 American Societyof Testing Materials, ASTMMetho d D1266-98, ("Standard Test Method for Sulfur in Petroleum Products - Lamp Method"), 1998.~~

~~504.13~~ **504.12** ~~American Societyof TestingMaterials, ASTMMetho d D2880-00~~15, ~~("~~Standard Specification for Gas Turbine Fuel Oils~~"), 2000~~.

~~504.14~~ **504.13** ~~American Societyof Testing Materials, ASTMMetho d D4294-90 or 98~~16e1, ~~("~~Standard Test Method for Sulfur in Petroleum Products by Energy-Dispersive X-RayFluorescenceSpectrometr y"~~),1990or 1998~~.

~~504.15~~ **504.14** Standard Methods for the Examination of Water and Wastewater,("Dissolved Solids Dried at 180ºC, Method #2540C"), American Public Health Association, 19th edition, 1995.

504.15 ASTM D5907-13,Standar d Methodsfo r theExaminationof Water and Wastewater for FilterableMatte r (TotalDissolve d Solids)an d Nonfilterable Matter (Total Suspended Solids)inWater.

504.16 South Coast Air QualityManagemen t District Method 307-94 Determination of Sulfur in a Gaseous Matrix.

NOTICE OF FINAL RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 323: FUEL BURNING EQUIPMENT FROM INDUSTRIAL/COMMERCIAL/INSTITUTIONAL(ICI)SOURCES
PREAMBLE

1.	Rule affected action	Rulemaking
	Rule 323: Fuel Burning Equipment from Industrial/Commercial/Institutional(ICI)Sources	Amended

2. **Statutory authority for the rulemaking:**
Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. **The effective date of the rule:**
Date of adoption: November 2, 2016

4. **List of public notices addressing this rulemaking:**
Notice of Briefing to Maricopa County Manager: May 2015
Notice of Stakeholder Workshops: June 29, 2015, September 3, 2015, and February 18, 2016
Notice of Maricopa County Board of Health Meeting: April 25, 2016
Notice of Proposed Rulemaking: 22 A.A.R. 1134, May 13, 2016

5. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name:	Johanna M. Kuspert or Hether Krause
	Maricopa County Air Quality Department
	Planning and Analysis Division
Address:	1001 N Central Avenue, Suite 125
	Phoenix, Arizona 85004
Telephone:	(602) 506-6010
Fax:	(602) 506-6179
E-mail:	aqplanning@mail.maricopa.gov

6. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary:
Rule 323 (Fuel Burning Equipment from Industrial/Commercial/Institutional(ICI) Sources) limits the discharge of nitrogen oxides (NO_X), sulfur oxides, particulate matter and carbon monoxide emissions into the atmosphere from fuel burning combustion equipment at industrial, commercial, and institutional (ICI) sources. Revisions to Rule 323 addressed the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The amendments in Rule 323 included Reasonably Available Control Technology (RACT) for NO_X.
In addition, the amendments corrected typographical or other clerical errors; made minor grammatical changes to improve readability or clarity; modified the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or made various other minor changes of a purely editorial nature. As these changes did not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 14 of this notice.

Issues Raised and Discussed During this Rulemaking Process:
Stakeholders expressed a general understanding for the need for rule revisions based on the department's nonattainment status; however, Stakeholders were concerned about the emission limitations and what is considered "RACT" and what is considered "beyond RACT". In addition, questions were raised regarding the following:
- Partial exemptions, particularly regarding stationary gas turbines
- Provisions for good combustion practices
- Source testing methods and frequency

Description of Amendments:
Regarding Exemptions:
- Section 104.1(c) (Partial Exemptions): Rule 323 was revised to clarify the partial exemption for military training facilities. The EPA commented that the term "military training facility" is unclear in this rule, especially as distinguished from other facilities such as "garrisons". The EPA suggested that this exemption should focus on the specific types of activities at these facilities that reasonably require exemptions, rather than the facilities themselves. The EPA suggested using Imperial County Air Pollution Control District, Rule 800, Section E(6) (General Requirements for Control of Fine Particulate Matter (PM_{10})) as an example. The text in Section 104.1(c) is from Imperial County Air Pollution Control District, Rule 800, Section E(6) (General Requirements for Control of Fine Particulate Matter (PM_{10})).
- Sections 104.1(f) and 104.2 (Partial Exemptions): Rule 323 was revised to include source specific limitations on emergency fuel use that is or will be incorporated in a source permit. The EPA commented that engines and fuel use allow alternative emission limits from normal operating conditions; this is generally allowable but must also include

appropriate limits on the length of the emergency condition and alternative emergency emission limits. EPA asked that the department revise this section.

Regarding Limitations:

- Section 301.1 (Good Combustion Practices for Turbines): Rule 323 was revised to include text regarding the frequency of monitoring temperature differential across the combustion burners. The EPA commented that the frequency of differential temperature measurement should be defined and that continuous monitoring of this differential should be required.
- Section 303 (Limitations-Sulfur in Fuel): The limitations for sulfur in fuel were changed from "low sulfur fuel" to "ultra low sulfur diesel"; consistent with federal standards.
- Section 304.1(b)(1) (Limitations-Nitrogen Oxides): The NO_X limitation when burning gaseous fossil fuel was changed from "155 ppm" to "42 ppmdv". The U.S. Environmental Protection Agency (EPA) advised the department that this limitation is considered RACT for NO_X; this limitation is similar to limits in Imperial County's (CA) RACT SIP for the 1997 ozone standard for turbines (Rule 400.1 adopted 2010).
- Section 304.1(b)(2) (Limitations-Nitrogen Oxides): The NO_X limitation when burning liquid fossil fuel was changed from "230 ppm" to "65 ppmdv". The EPA advised the department that this limitation is considered RACT for NO_X; this limitation is similar to limits in Imperial County's (CA) RACT SIP for the 1997 ozone standard for turbines (Rule 400.1 adopted 2010).

Regarding Compliance with Nitrogen Oxides Limitations:

- Section 304.1 (Limitations-Nitrogen Oxides): Rule 323 clarified which provisions a source must comply with in order to be in compliance with the NO_X limitations. A source can either tune equipment annually in accordance with good combustion practices or follow the manufacturer's recommended procedure or a source can limit NO_X emission to no more than 42 ppmdv when burning gaseous fuel or to no more than 65 ppmdv when burning liquid fuel.

Regarding Administrative Requirements:

- Section 401 (Compliance Schedule): Rule 323 was revised to include compliance schedules for filing an Operation & Maintenance (O&M) Plan; for filing a schedule for making modifications to existing Emission Control Systems (ECS); and for filing a schedule for installing an ECS.

Regarding Compliance Determinations:

- Section 503.1 (Compliance Determination-Ultra Low Sulfur Diesel Verification): The compliance determination for low sulfur oil verification was changed to a compliance determination for ultra low sulfur diesel verification consistent with federal standards. Due to the EPA's comments, additional language was added to clarify that sulfur content verification documents must provide accurate values and utilize enforceable test methods to determine the sulfur content. Also, the test method for determining sulfur content of waste gas was added in Sections 503.1(b) and 504.15 (Compliance Determination-Test Methods Incorporated by Reference).
- Section 503.2 (Compliance Determination-Gaseous Emissions-Source Test): The size of boilers that must conduct performance (stack) tests was changed from "10 MMBtu" to "100 MMBtu". The Arizona Public Service Company (APS) submitted a comment on February 22, 2016. They stated that Section 503.2 should be rewritten to be applicable to unit 100 MMBtu or larger, because it does not make sense to have stack testing for such small units.
- Sections 503.2 (Compliance Determination-Gaseous Emissions-Source Test) and 503.3 (Compliance Determination-Gaseous Emissions-Continuous Emission Monitoring System (CEMS)): The text in Sections 503.2 and 503.3 is from Sacramento Metropolitan Air Quality Management District Rule 411 (NO_X from Boilers, Process Heaters and Steam Generators). The EPA advised the department that, when updating Rule 323 to include RACT, the department should consider other agencies' rules. Text for Sections 503.2(c) and (d) regarding test runs and test protocols were removed, per the EPA's comments that this language would allow Control Officer discretion on testing operations that may lead to poor operating data. Text for Sections 503.2(a) and 503.3 regarding compliance determinations during startup and shutdown were removed ("All emissions determinations shall be made during normal operating conditions, except no compliance determination shall be established during unit startup and shutdown"), due to the EPA's comments that this language does not align with the EPA's startup, shutdown, and malfunction policy.

- Sections 503.2(c) and (d) (Compliance Determination-Gaseous Emissions-Source Test): The text in Sections 503.2(c) and (d) was deleted. The text was from Sacramento Metropolitan Air Quality Management District Rule 411 (NO_X from Boilers, Process Heaters and Steam Generators) and regards procedures in the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued and states that a source test reports may be determined to be invalid. The EPA commented that this would allow Control Officer discretion on testing operations that may lead to poor operating data and recommended removing these provisions.
- Section 504 (Compliance Determination-Test Methods Incorporated by Reference): Rule 323 included a provision that allows for the use of alternative test methods to determine compliance with the rule and clarified the provision regarding when more than one test method is permitted for a compliance determination.
- Section 504.12 (Compliance Determination-Test Methods Incorporated by Reference): The test method "American Society of Testing Materials, ASTM Method D1266-98, ("Standard Test Method for Sulfur in Petroleum Products - Lamp Method"), 1998" was deleted. The EPA commented that the test method may not be appropriate; its range is 0.01-0.4% which will not be able to verify compliance with the definition of ultra low sulfur diesel fuel at <0.0015%.

7. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
   - **(a)** Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
   - **(b)** Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. The County failed to meet 2008 8-hour ozone standard by the marginal area attainment date of July 20, 2015. The EPA issued a final rule, effective June 3, 2016, reclassifying the Maricopa County area to "moderate" (published at 86 FR 26697, May 4, 2016). Further, a portion of the County was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the County to continue to maintain the measures and requirements that allowed the County to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM_{10} 24-hour standard. This is the only serious PM_{10} nonattainment area in Arizona. Revisions to Rule 323 addressed the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the

2008 eight-hour ozone national ambient air quality standard (NAAQS). The amendments in Rule 323 include Reasonably Available Control Technology (RACT) for NO_X.
The department complies with A.R.S. § 49-112(B) in that the amendments to Rule 323 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49; address the peculiar local conditions in Maricopa County; are authorized under A.R.S. Title 49, Chapter 3, Article 3; and are not in lieu of a state program.

8. **Documents or studies referenced and/or reviewed for this rulemaking:**
Not applicable

9. **Showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**
Not applicable

10. **Summary of the economic, small business, and consumer impact:**
The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

An identification of the rulemaking.
This rulemaking revised Rule 323 (Fuel Burning from Industrial, Commercial, and Institutional (ICI) Sources).

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.
The persons who will be directly affected by and bear the costs of this rulemaking will be facilities in Maricopa County that use ICI sources that burn either fossil fuels or alternative fuels where the sources include any of the following:

- Steam generating unit with a maximum design rated heat input capacity from fuels combusted in the unit of greater than 10 million BTU/hr;
- Stationary gas turbines with a heat input at peak load equal to or greater than 2.9 megawatts (MW);
- Cogeneration steam generating unit with a heat input of greater than 10 million Btu/hr;
- Indirect-fired process heater with a heat input greater than 10 million Btu/hr.

The department has issued permits to more than 130 facilities with sources applicable to Rule 323.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**
It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.
The assumptions of savings with the rule revisions will be reviewed after rule implementation to confirm their effectiveness. However, the benefits of the rule revision are anticipated to be a result of the following changes:

- Applying limitations for fuel sulfur content to ultra low sulfur diesel (from "low sulfur fuel") to be consistent with federal requirements;
- Changing NO_X limitations when burning gaseous fossil fuel from 155 ppm to 42 ppmdv, and when burning liquid gaseous fossil fuel from 230 ppm to 65 ppmdv to be consistent with federal requirements and what EPA considers to be RACT for NO_X.
- Clarifying compliance requirements that apply to a source in order to meet the NO_X limitations;
- Adding requirements for schedules pertaining to filing an Operation & Maintenance Plan (O&M) Plan, and when modifying or installing a new Emission Control System (ECS); and
- Clarifying compliance determination test methods that apply for determining fuel sulfur content, NO_X (and CO) emissions for boilers with a heat input capacity of 100 MMBtu per hour or greater, and methods for boilers equipped with continuous emission monitoring system (CEMS).

These revisions align Maricopa County requirements with existing federal performance standards. In addition, the sources subject to the revised Rule 323 already have permits in which these requirements are addressed. Therefore, this revised rule does not impose

new requirements on the subject facilities, and no costs would be incurred for compliance with the rule revisions.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity provided by the Rule 323 revisions will provide a benefit to the regulated community; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision will not impose increased monetary or regulatory costs on individuals so regulated.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions will not impose increased monetary or regulatory costs on any business, persons, or individuals so regulated.

(a) **An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County that use ICI sources that burn either fossil fuels or alternative fuels where the sources include any of the following: a steam generating unit with a maximum design rated heat input capacity from fuels combusted in the unit of greater than 10 million BTU/hr; a stationary gas turbine with a heat input at peak load equal to or greater than 2.9 megawatts (MW); a cogeneration steam generating unit with a heat input of greater than 10 million Btu/hr; and, an indirect-fired process heater with a heat input greater than 10 million Btu/hr.

(b) **The administrative and other costs required for compliance with the rulemaking.**

This rulemaking updated and clarified existing rule provisions and definitions to be consistent with federal performance standards, and reduce confusion and improve understanding and readability. The department considered the implications of the amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**

By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**

This rulemaking did not impose any new compliance burdens on regulated entities or introduce additional regulatory requirements and will not impose increased monetary or regulatory costs on any business, persons, or individuals so regulated. As such, there are no costs to pass through to consumers which means there are no impacts on consumers.

A statement of the probable effect on state revenues.

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without

costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

11. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name: Johanna M. Kuspert or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, AZ 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

12. **Description of the changes between the proposed rule, including supplemental notices and final rule:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R 1134), the department made the following additional amendments:

- Section 104.1(c) (Partial Exemptions): Did not include new text "used in the following military training activities conducted by the Department of Defense: (1) military tactical training or (2) maintenance, repair, and removal of targets and munitions associated with military tactical training; or". The U.S. Environmental Protection Agency (EPA) commented in June 2016 to remove this exemption or provide definitions for the terms "military training facilities" and "military gas turbines" and demonstrate why these gas turbines should not be subject to the specified emission standards. Deleted the partial exemption for stationary gas turbines used at military training facilities.
- Section 104.1(e) (Partial Exemptions): Did not include new text "and that are or will be incorporated in a permit" but included the text "…as allowed by a permit".
- Section 104.2 (Partial Exemptions): Did not include new text "and that are or will be incorporated in a permit" but included the text "…as allowed by a permit".
- Section 219 (Definition of "Steady State"): Added the definition of "Steady State".
- Section 224 (Definition of "Waste Derived Fuel Gas"): Revised the definition of "Waste Derived Fuel Gas" to match the definition in Rule 324 (Stationary Internal Combustion (IC) Engines). Deleted "sewage sludge" from the list of examples of waste derived fuel gas because sewage sludge is not a gas.
- Section 301.1 (Limitations-Particulate Matter-Limitations-Liquid Fuels): Included new text "during steady state operations" after "in excess of 0.10 lbs. per MMBtu".
- Section 301.3 (Limitations-Particulate Matter-Good Combustion Practices for Turbines): Included new text "during steady state operations" at the beginning of the first sentence.
- Section 304.1(a) (Limitations-Nitrogen Oxides): Included new text before the last sentence "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 manufacture's recommended procedure", per comments from APS.
- Sections 304.1(b)(1) and (2) (Limitations-Nitrogen Oxides): Included new text "or other EPA-approved test method designated by the Control Officer" after the phrase "EPA Reference Method(s) 7".
- Section 304.1(c) (Limitations-Nitrogen Oxides): Included new text "during steady state operations" at the end of the first sentence.
- Section 305 (Limitations-Carbon Monoxide): Included new text "during steady state operations and "or other EPA-approved test method designated by the Control Officer" in the second sentence. Added new text "during steady state operations" after "…corrected to 15% oxygen" in the second-to-the-last sentence.
- Section 306.1 (Requirements for Air Pollution Control Equipment and ECS Monitoring Equipment-Emission Control System): Included new text at the end-of the sentence "or a combustion control system which reduces emissions to below the applicable standards in Section 300 of this rule".

- Section 503.1 (Compliance Determination-Sulfur in Fuel Verification): Changed the headings of Sections 503.1, 503.1(a), and 503.1(b) to more clearly distinguish what the sections address.
- Section 503.1(a) (Compliance Determination-Sulfur in Fuel Verification-Ultra Low Sulfur Diesel): Revised the new text "sulfur content of the fuel oil to demonstrate the 0.0015% limits" to "sulfur content of the fuel to demonstrate the 0.0015% limit". Revised the new text in Section 503.1(a)(6) from "testing of the fuel oil for sulfur content" to "test results of the fuel for sulfur content"
- Section 503.1(a) (Compliance Determination-Sulfur In Fuel Verification-Ultra Low Sulfur Diesel): Revised the new text after the list of items in Sections 503.1(a)(1)-(6). Changed "and utilize" to "or be based on". Added "as approved by the Administrator" after "test methods".
- Section 503.1(a)(4) (Compliance Determination-Sulfur In Fuel Verification-Ultra Low Sulfur Diesel): Removed Safety Data Sheets (SDS)/Material Safety Data Sheets (MSDS) from the list of documentation of the sulfur content of the fuel oil, per the EPA comments.
- Sections 503.2(a) and (b) (Compliance Determination-Gaseous Emissions-Source Test): Did not include new text regarding specific test methods to be used to determine compliance with NO_X and CO and regarding discontinuing a scheduled source test. These requirements are addressed in performance testing protocol.
- Section 503.3 (Compliance Determination-Gaseous Emissions-Continuous Emission Monitoring System (CEMS)): Did not include new text "NO_X" in the introductory statement. CEMS can be used for other pollutants. Introductory statement was revised to read in part: Compliance with the emission requirements specified…
- Section 504 (Compliance Determination-Test Methods Incorporated By Reference): Deleted the provision allowing test methods to be used upon sole approval by the Control Officer. Added text that allows test methods as approved by the Administrator to be used, per the EPA's comments.

13. **Summary of the comments made regarding the rule and the department response to them:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R. 1134), the department received comments from the Arizona Public Service Company (APS) and the U.S. Environmental Protection Agency (EPA). The comments and the department's responses are provided below.

Comment #1: Sections 104.1(c) (Partial Exemptions)

The EPA asks that the County clarify the exceptions for units at military training facilities, as this is not defined.

Response #1: Section 104.1(c) (Partial Exemptions)

The department did not include new text "used in the following military training activities conducted by the Department of Defense: (1) military tactical training or (2) maintenance, repair, and removal of targets and munitions associated with military tactical training; or…" The department deleted the partial exemption for stationary gas turbines used at military training facilities.

Comment #2: Sections 104.1(e) and (f) (Partial Exemptions)

The EPA asks that the County include appropriate limits on the length of emergency condition and alternative emergency limits for units fired with emergency fuel that are otherwise normally fired with natural gas.

Response #2: Sections 104.1(e) and (f) (Partial Exemptions)

The department included source specific limitations on emergency fuel use as allowed by a permit issued by the Control Officer.

Comment #3: Section 301.3 (Limitations-Particulate Matter-Good Combustion Practices for Turbines)

The EPA asks the County to define the frequency of monitoring required to comply with the provisions of "good combustion practices" for turbines.

Response #3: Section 301.3 (Limitations-Particulate Matter-Good Combustion Practices for Turbines)

The department included text regarding the frequency of monitoring temperature differential across the combustion burners.

Comment #4: Section 304.1(a) (Limitations-Nitrogen Oxides)

During the County workshops discussing Rule 323, APS brought to the County's attention the dilemma caused by the inspection requirements related to boilers. APS has installed a Clayton

Boiler on its process equipment. This boiler is a state-of-the-art boiler and as such has a sealed burner chamber which does not allow for inspection of the combustion chamber, burner or flame pattern as required under Section 304.1(a). Rather than be penalized for having such an advanced and efficient burner that does not allow for inspection, APS suggested that the County provide an exception to allow APS to operate the burner in compliance with the manufacturer's recommended procedures. At the time of the workshops, the County was open to the suggestion and offered no indication that it would not approve such a solution. APS hopes this was an oversight on the County's part, but if the County should need additional information, please let APS know and APS will be happy to provide it.

Response #4: Section 304 (Limitations-Nitrogen Oxides)

The department included new text before the last sentence "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 manufacture's recommended procedure".

Comment #5: Section 306.1 (Requirements for Air Pollution Control Equipment and ECS Monitoring Equipment-Emission Control System)

A facility may comply with the emission limits in the rule by installing and operating an emission control system (ECS). While an ECS may be one possible way to meeting emission limits, it generally cannot substitute for meeting limits, unless specific control measures or a percent effectiveness are defined as a part of the required ECS that may be approved by the Control Officer. The definition of ECS at Section 206 also allows discretion to the Control Officer on the types of required control devices, practices, and monitoring needs for an effective ECS. The EPA asks the County to either define a set of specific required control technologies or practices that must be a part of any effective ECS or define a required emissions reduction (for example, 80% reduction of existing NO_X emissions).

Response #5: Section 306.1 (Requirements for Air Pollution Control Equipment and ECS Monitoring Equipment-Emission Control System)

The department included new text at the end-of the sentence in Section 306.1 "or a combustion control system which reduces emissions to below the applicable standards in Section 300 of this rule".

Comment #6: Section 503.1(a) (Compliance Determination-Ultra Low Sulfur Diesel Verification)

This section allows for various documents to verify compliance with the ultra-low sulfur diesel fuel limit. The EPA asks the County to ensure the documents listed give accurate values and use enforceable test methods. For example, EPA generally has not approved the use of Safety Data Sheets (SDS)/Material Safety Data Sheets (MSDS) to determine compliance in SIP rules unless the SDS/MSDS specifies that the compound of interest was determined by an approved EPA method.

Response #6: Section 503.1(a) (Compliance Determination-Ultra Low Sulfur Diesel Verification)

The department removed Safety Data Sheets (SDS)/Material Safety Data Sheets (MSDS) from the list of documentation of the sulfur content of the fuel oil in Section 503.1(a)(4).

Comment #7: Section 503.2(a) (Compliance Determination-Gaseous Emissions-Source Test)

This section states that no compliance determinations will be made during startup and shutdown. This does not align with EPA's startup, shutdown, and malfunction (SSM) policy, particularly in the case of CEMS-equipped units. The EPA asks the County to include alternative numerical limits for operations during these periods, require best operating practices, or require that units comply with the standard limits during SSM events.

Response #7: Section 503.2(a) (Compliance Determination-Gaseous Emissions-Source Test)

The department removed text regarding compliance determinations during startup and shutdown.

Comment #8: Section 503.3 (Compliance Determination-Gaseous Emissions-Continuous Emission Monitoring System (CEMS))

This section states that no compliance determinations will be made during startup and shutdown. This does not align with EPA's startup, shutdown, and malfunction (SSM) policy, particularly in the case of CEMS-equipped units. The EPA asks the County to include alternative numerical limits for operations during these periods, require best operating practices, or require that units comply with the standard limits during SSM events.

Response #8: Section 503.3 (Compliance Determination-Gaseous Emissions-Continuous Emission Monitoring System (CEMS))

The department removed text regarding compliance determinations during startup and shutdown.

Comment #9: Section 504 (Compliance Determination-Test Methods Incorporated By Reference)

Alternative test methods may not be used upon sole approval by the Control Officer. The EPA asks the County to remove this provision or include language that also requires EPA approval for alternative methods.

Response #9: Section 504 (Compliance Determination-Test Methods Incorporated By Reference)

The department deleted the provision allowing test methods to be used upon sole approval by the Control Officer and added text that allows test methods as approved by the Administrator to be used.

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

Not applicable

15. **Incorporations by reference and their location in the rule:**

The department incorporated by reference sections of the Code of Federal Regulations in Section 504 (Compliance Determination-Test Methods Incorporated by Reference)

16. **Was this rule previously an emergency rule?**

No

17. **Full text of the rule follows:**

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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~~Adopted 07/03/05~~
~~Revised 10/17/07~~

Adopted 07/02/2003; Revised 10/17/2007; **Revised 11/02/2016**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III-CONTROL OF AIR CONTAMINANTS
RULE 323
FUEL BURNING EQUIPMENT FROM INDUSTRIAL/COMMERCIAL/INSTITUTIONAL (ICI) SOURCES

~~INDEX~~

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 equipment at industrial and/or commercial and/or institutional (ICI) sources.

102 APPLICABILITY: This rule applies to ~~any of~~ the following types of ICI combustion equipment that burns either fossil fuels or alternative fuels:

102.1 Each steam generating unit that has a maximum design rated heat input capacity from fuels combusted in the generating unit of greater than 10 million (MM) Btu/hr (2.9 Megawatts (MW)).

102.2 Each stationary gas turbine with a heat input at peak load equal to or greater than 2.9 megawatts (MW).

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 equipment; 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 hot water for comfort or for radiant heat.

104 PARTIAL EXEMPTIONS:

104.1 Stationary gas turbines listed in ~~subsection 102.2~~ Section 102.2 of this rule that are used for any of the following reasons shall be exempt from ~~Sections 304, 305 and subsections 301.1, 301.2, 501.1 and 501.3~~ Sections 301.1, 301.2, 304, 305, 501.1, and 501.3 of this rule:

a. Used for firefighting; or

b. Used for flood control; or

~~c. Used at military training facilities other than a garrison facility; or~~

~~d.~~ **c.** Engaged by manufacturers in research and the development of equipment for either gas turbine emission control techniques or gas turbine efficiency improvements; or

~~e.~~ **d.** Fired with emergency fuel that is normally fired with natural gas, or

~~f.~~ **e.** ~~Testing, reliability, maintenance, training, and readiness purposes for a total of 36 hours per year per unit when firing any emergency fuel.~~ Fired with emergency fuel for 36 cumulative hours per year or less, per unit for testing, reliability, training, and maintenance purposes as allowed by a permit issued by the Control Officer for that source.

104.2 All steam generating units including cogeneration units and process heaters that are used for any of the following reasons as allowed by a permit issued by the Control Officer shall be exempt from Sections 301, 304, 305, ~~and subsections~~ 501.1 and 501.3 of this rule:

a. Fired with an emergency fuel that is normally fired with natural gas; or

b. Firing any emergency fuel for testing, reliability, and maintenance purposes ~~up to a maximum total of 36 hrs. per unit per year.~~ for 36 cumulative hours per year, per unit or less.

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.~~ 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 or methanol.

202 **COGENERATION STEAM GENERATING UNIT:** A steam or hot water generating unit that simultaneously produces both electrical (or mechanical) and thermal energy (such as heat or steam) from the same primary energy source.

203 **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.

204 **DISTILLATE OIL:** A petroleum fraction of fuel oil produced by distillation that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-01, "Standard Specification for Fuel Oils."

205 **EMERGENCY FUEL:** Fuel fired by a gas combustion unit, normally fueled by natural gas, only during circumstances of unforeseen disruption or interruption in the supply of natural gas to a unit that normally runs on natural gas. The inability to burn natural gas may be one of the following, but is not limited to, natural gas emergency, natural gas curtailment, or a breakdown of the delivery system.

206 **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.

207 **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.

208 **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.

~~209~~ ~~LOW SULFUR OIL: Fuel oil containing less than or equal to 0.05 % by weight of sulfur.~~

~~210~~ **209** **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.

~~211~~ **210** **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.

~~212~~ **211** **PARTICULATE MATTER EMISSIONS:** Any and all particulate matter emitted to the ambient air as measured by applicable state and federal test methods.

~~213~~ **212** **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).

~~214~~ **213** **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.

~~215~~ **214** **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 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.

~~216~~ **215** **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 combustor unit.

~~217~~ **216** **RESIDUAL OIL:** The heavier oils that remain after the distillate oils and lighter hydrocarbons are distilled off in refinery operations. This includes crude oil or fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05% by weight, and all fuel oil numbers 4, 5 and 6, as defined by the American Society of Testing and Materials in ASTM D396-01, "Standard Specifications for Fuel Oils".

~~218~~ **217** **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, or that does not recover heat from the gas turbine exhaust gases to heat water or generate steam.

~~219~~ **218** **STATIONARY GAS TURBINE:** Any simple cycle gas turbine or regenerative gas turbine that is not self-propelled or that is attached to a foundation.

219 **STEADY STATE:** A safe, stable megawatt load at which a unit with equipment in normal operating conditions is capable of being held for an extended period of time, without creating an unsafe or unstable operating condition.

~~220~~ **220** **STEAM GENERATING UNIT:** An external combustion unit or boiler fired by fossil fuel that is used to generate hot water or steam. The hot water or steam is then used as energy for driving another process or piece of equipment.

~~221~~ **221** **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.

222 **ULTRA LOW SULFUR DIESEL:** Fuel oil containing less than or equal to 0.0015 % sulfur by weight.

~~222~~ **223** **UNCOMBINED WATER:** Condensed water containing no more than analytical trace amounts of other chemical elements or compounds.

~~223~~ **224** **WASTE DERIVED FUEL GAS:** ~~Any~~ A gaseous fuel that is generated from the biodegradation of solid or liquid waste including, but not limited to, ~~sewage sludge,~~ digester gas and landfill gas.

~~224~~ **225** **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 as opposed to boilers, do not reach temperatures of 220°F and higher that boilers can reach, and are not manufactured to meet boiler codes.

SECTION 300 – STANDARDS

301 LIMITATIONS – PARTICULATE MATTER:

301.1 Limitation-Liquid Fuels: An owner or operator 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 lbs. per MMBtu, during steady state operations, from any combustion units listed in ~~subsections 102.1, 102.3 and 102.4~~ Sections 102.1, 102.3, and 102.4 of this rule with either a rated heat input capacity or heat input of greater than 100 MM Btu/hr.

301.2 Particulate Matter Testing: A backhalf analysis shall be performed, using Reference Method 202 referenced in ~~subsection 504.6~~ Section 504.6 of this rule, each time a compliance test for particulate matter emissions to meet the standards in ~~subsection 301.1~~ Section 301.1 of this rule is performed using Method 5. (The results of the Method 202 testing shall be used for emissions inventory purposes).

301.3 Good Combustion Practices for Turbines: During steady state operations, ~~An~~an owner or operator of a stationary gas turbine listed in ~~subsection 102.2~~ Section 102.2

of this rule, regardless of fuel type or size, shall use operational practices recommended by the manufacturer and parametric monitoring that ensure good combustion control. One of the following procedures may be used:

a. 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 across the burners to demonstrate good combustion practices shall be measured from at least one minute data point during a complete steady state operating hour. If a valid maximum 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; or

b. If the manufacturer recommends that the maximum numerical temperature differential to ensure good combustion is a temperature that is greater than 100°F, then proof of this maximum alternate temperature shall be submitted to the Control Officer. The procedure to measure the maximum temperature differential listed above in ~~subsection 301.3a~~ Section 301.3(a) of this rule shall then be followed using the alternate recommended maximum temperature differential after approval by the Control Officer.

c. If a repetitive pattern of failure to meet the proper temperature differential of 100°F or to meet the alternate temperature differential recommended by the manufacturer indicates that the turbine is not being operated in a manner consistent with good combustion practices, then the Control Officer may require the owner or operator to submit a Corrective Action Plan (CAP).

302 LIMITATIONS – OPACITY: ~~No~~ 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 applicable equipment listed in Section 102 of this rule that burns liquid fuel oil or a mixture or blend of fuel oil with any other fuels shall use only ~~low sulfur oil~~ ultra low sulfur diesel. An owner or operator using waste derived fuel gas shall use only waste derived fuel gas ~~with a sulfur content less than or equal to 800 ppm (0.08%).~~ that contains no more than 0.08% sulfur by weight, alone or in combination with other fuels.

304 LIMITATIONS – NITROGEN OXIDES:

304.1 An owner or operator of any combustion equipment listed in Section 102 of this rule, except gas turbines, with a heat input of greater than 10 MMBtu/hr to 100 MMBtu/hr~~, except gas turbines,~~ shall comply either with ~~(a) or (b) below~~ Sections 304.1(a) or 304.1(b) of this rule. Gas turbines are subject to both Sections 304.1(a) and 304.1(b) of this rule below:

a. Establish initial optimal baseline concentrations for NO_X and CO within 90 days of the first usage of the combustion equipment utilizing the initial design burner specifications or manufacturer's recommendations to ensure good combustion practices. Tune the unit annually in accordance with good combustion practices or ~~a~~ follow the manufacturer's recommended procedure, if applicable. ~~, that will include the following at a minimum:~~ 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 manufacturer's recommended procedure. If using good combustion practices, the owner or operator shall include the following at a minimum:

(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) Measure the NO_X and the CO concentration of the effluent stream after each adjustment was made with a handheld portable monitor to ensure optimal baseline concentrations are maintained. ~~or~~

b. Limit nitrogen oxide emissions to no more than the following amounts:

(1) ~~155 ppm~~ 42 ppmdv calculated as nitrogen dioxide, when burning gaseous fuel. During steady state operations, this test result using EPA Reference Method(s) 7 or other EPA-approved test method designated by the Control Officer shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample run time of one hour.

(2) ~~230 ppm~~ 65 ppmdv calculated as nitrogen dioxide, when burning liquid fuel. During steady state operations, this test result using EPA Reference Method(s) 7 or other EPA-approved test method designated by the Control Officer shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample run time of one hour.

c. For simple gas turbines, the nitrogen oxides shall be measured dry and corrected to 15% oxygen, during steady state operations. For all other combustion equipment, the nitrogen oxides shall be measured dry and corrected to 3% oxygen.

304.2 An owner or operator of any combustion equipment, listed in Section 102 of this rule, with a heat input greater than 100 MMBtu/hr, shall:

a. Tune the equipment every 6 months with good combustion practices or a manufacturer's procedure that at a minimum includes the procedures listed in ~~subsection 304.1a~~ Section 304.1(a) of this rule and;

b. Meet the NO_X emission limits as stated in ~~subsection 304.1b~~ Section 304.1(b) of this rule.

305 LIMITATIONS-CARBON MONOXIDE: ~~No~~ An owner or operator of any equipment listed in Section 102 of this rule 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 ppmv at any time. ~~This~~ During steady state operations, this test result, using EPA Reference Method 10 or other EPA-approved test method designated by the Control Officer, shall be based upon the arithmetic mean of the results of three test runs and shall be measured during steady state compliance source testing. Each test run shall have a minimum sample time of one hour. For simple gas turbines, the CO shall be measured dry and corrected to 15% oxygen, during steady state operations. For all other combustion equipment, the CO shall be measured dry and corrected to 3% oxygen.

306 REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND ECS MONITORING EQUIPMENT:

306.1 Emission Control System ~~Required~~**:** For affected operations which may exceed any of the applicable standards set forth in Sections 300 of this rule, an owner or operator may comply by installing and operating an emission control system (ECS) or a combustion control system which reduces emissions to below the applicable standards in Section 300 of this rule.

306.2 Providing and Maintaining ECS Monitoring Devices: ~~No~~ An owner or operator required to use an approved ECS pursuant to this rule shall not 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 Operation and Maintenance (O&M) Plan.

306.3 ~~Operation and Maintenance (~~**O&M) Plan Required for ECS:**

a. General Requirements: An owner or operator shall provide and maintain an O&M Plan for any ECS, any other emission processing equipment, and any ECS monitoring devices that are used pursuant to this rule or an air pollution permit.

b. Approval by Control Officer: An 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. Initial Plans: An owner or operator that is required to have an O&M Plan pursuant to this rule shall comply with all O&M Plans that the owner or operator has submitted for approval, but which have not yet been approved, unless notified by the Control Officer in writing. Once the initial plan has been approved in writing by the Control Officer, an owner or operator shall comply with this approved plan.

d. Revisions to Plan: If revisions to the initial plan have been approved by the Control Officer in writing, an owner or operator shall comply with the revisions

to the initial plan. If revisions to the plan have not yet been approved by the Control Officer in writing, then an owner or operator shall comply with the most recent O&M plan on file at Maricopa County Air Quality Department.

e. **Control Officer Modifications to Plan:** After discussion with the owner or operator, the Control Officer may modify the plan in writing prior to approval of the initial O&M plan. An owner or operator shall then comply with the plan that has been modified by the Control Officer.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS ~~(NOT APPLICABLE)~~

401 COMPLIANCE SCHEDULE

O&M Plan: Any owner or operator employing an approved ECS on the effective date of this rule shall by July 2, 2017 file an O&M Plan with the Control Officer in accordance with Section 306.3 of this rule.

Modifications to Existing ECS: Any owner or operator required to modify their ECS equipment or system by either reconstructing or adding on equipment for compliance with this rule shall by July 2, 2016 file a schedule for the modification with the Control Officer. The plan shall show how the ECS is to be used to achieve full compliance and shall specify dates for completing increments of progress. Any and all ECS used to achieve such compliance shall be in operation by November 2, 2018.

ECS Installation: An owner or operator required to install an ECS for compliance with this rule shall by July 2, 2017 file a schedule for the installation with the Control Officer. The ECS shall then be installed and in compliance by November 2, 2019.

SECTION 500 – MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING: An 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 or his designee upon request. Records shall consist of the following information:

Equipment Listed in Section 102 of this Rule: Type of fuel used, amount of fuel used, and amount of sulfur in the fuel if using liquid fuel, and the days and hours of operation.

Emergency Fuel Usage: Monthly records of: type of ~~e~~mergency fuel used, 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 ~~subsections 104.1 and 104.2~~ Sections 104.1 and 104.2. Yearly records of the twelve month log of hours of operation in the emergency mode.

Good Combustion Practice: Measurements of the temperature differential across the burners of turbines per ~~subsection 301.3~~ Section 301.3 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 ~~subsection 301.3 (a) or (b)~~ Sections 301.3(a) or 301.3(b) of this rule without any action by the owner or operator.

Tuning Procedure: Date that the procedure was performed on the particular 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 handheld monitor after each adjustment.

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 DETERMINATION:

~~Low Sulfur Oil Verification~~ **Sulfur In Fuel Verification:**

a. ~~An owner or operator shall submit fuel oil receipts from the fuel supplier indicating the sulfur content of the fuel oil or verification that the fuel oil used meets the 0.05% sulfur limit or the 0.08% limit for landfill or digester gas if requested by the Control Officer, or~~ **Ultra Low Sulfur Diesel:** 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) Test results of the fuel for sulfur content
The items listed above must provide accurate sulfur content values or be based on enforceable test methods as approved by the Administrator to determine the sulfur content.

b. ~~If fuel receipts are not available, an owner or operator shall submit a statement of certification or proof of the sulfur content of the fuel oil from the supplier to the Control Officer, or~~ **Waste Derived Fuel Gas:** The owner or operator shall submit documentation of the concentration of the sulfur level 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 307-94 Determination of Sulfur in a Gaseous Matrix.

~~c. An owner or operator may elect to test the fuel oil for sulfur content in lieu of certification from the fuel supplier or fuel receipts using one of the test methods incorporated by reference in subsections 504.11, 504.12, 504.14 or 504.15~~.

Gaseous Emissions-Source Test: Boilers with a heat input capacity of ~~10 MMBtu~~ 100 MMBtu per hour or greater, must conduct all applicable performance (stack) tests on a triennial basis. Triennial performance tests must be completed no more than 37 months after the previous performance test.

Gaseous Emissions-Continuous Emission Monitoring System (CEMS): Compliance with the emission requirements specified in Sections 301 through 304 of this rule may also be determined using CEMS. Where the 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 unit is operated.

b. Cycle Time: An owner or operator of any 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 3 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. Accuracy Testing: Accuracy testing of CEMS shall be conducted using a relative accuracy test audit pursuant to 40 CFR 60, Appendix F.

504 ~~TEST METHODS ADOPTED BY REFERENCE~~ **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 ~~The EPA test methods as they exist in the Code of Federal Regulations (CFR) (July 1, 2004), as listed below,~~ 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 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. ~~When more than one test method, as listed in subsections 504.11, 504.12, 504.14, or 504.15 of this rule, is permitted for the same determination, an exceedance of the limits established in this rule determined by any one of the applicable test methods constitutes a violation.~~

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 Concentrationsin Emissions from Stationary Sources(Instrumental Analyzer Procedure)"), 3B("Gas Analysis for the Determination of Emission Rate Correction Factor of 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 ReferenceMethod 5 ("DeterminationofParticulate Emissions from Stationary Sources") (40 CFR 60, Appendix A)

504.6 EPA ReferenceMethod 202 ("Determinationof Condensable Particulate Emissions from Stationary Sources") (40 CFR51, Appendix M).

504.7 EPA Reference Methods7 ("Determination of NitrogenOxide Emissions from Stationary Sources"), 7A ("Determinationof Nitrogen Oxide Emissions form Stationary Sources"), 7B ("Determinationof NitrogenOxide Emissions from Stationary Sources – Ultraviolet Spectrometry"), 7C("Determination of Nitrogen Oxide Emissions from StationarySources – Alkaline-Permanganate Colorimetric Method"), 7D ("Determinationof NitrogenOxide Emissions from Stationary Sources – Alkaline – PermanganateChromatographicMethod"), and 7E ("Determinationof Nitrogen OxideEmissions from Stationary Sources – Instrumental Analyzer Method"), (40 CFR60, Appendix A).

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

504.9 EPA ReferenceMethod 10, ("Determinationof Carbon Monoxide from Stationary Sources") (40 CFR60, Appendix A).

504.10 EPA ReferenceMethod 20, ("Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from StationaryGas Turbines") (40 CFR 60, Appendix A).

504.11 ~~American Societyof TestingMaterials,~~ ASTM Method ~~D2622-92 or~~ D2622-98, ~~("~~Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray FluorescenceSpectrometr y~~"),1992or1998.~~

~~504.12 American Societyof Testing Materials, ASTMMetho d D1266-98, ("Standard Test Method for Sulfur in Petroleum Products (Lamp Method)"), 1998.~~

~~504.13~~ **504.12** ~~American Societyof TestingMaterials,~~ ASTMMetho d ~~D2880-00~~ D2880-96, ~~("~~Standard Specification for GasTurbine FuelOils"~~), 2000~~

~~504.14~~ **504.13** ~~American Societyof Testing Materials,~~ ASTM Method ~~D4294-90 or 98~~ D4294-02 or D4294-03, ~~("~~Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-rayFluorescence Spectrometry~~"), 1990or1998~~.

~~504.15~~ **504.14** ~~American Societyof Testing Materials,~~ ASTMMetho d D5504-01 or D5504-08, ~~("~~Standard Test Method for Determination of Sulfur compounds in Natural Gas and GaseousFuels byGasChromatograph y and Chemiluminescence"~~), 2006~~.

504.15 South Coast Air QualityManagemen t District Method 307-94 Determination of Sulfur in a Gaseous Matrix

NOTICE OF FINAL RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 324: STATIONARY INTERNAL COMBUSTION (IC) ENGINES
PREAMBLE

1.	**Rule affected action**	**Rulemaking**
	Rule 324: Stationary Internal Combustion (IC) Engines	Amended

2. Statutory authority fortherulemakin g:
Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. The effective date of the rule:
Date of adoption: November 2, 2016

4. List of public noticesaddressin g thisrulemakin g:
Notice of Briefing to Maricopa County Manager: May 2015

Notice of Stakeholder Workshops: August 3, 2015, November 19, 2015, and January 27, 2016
Notice of Maricopa County Board of Health Meeting: April 25, 2016
Notice of Proposed Rulemaking: 22 A.A.R. 1145, May 13, 2016

5. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name: Johanna M. Kuspert or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, Arizona 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

6. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary:

Rule 324 (Stationary Internal Combustion (IC) Engines) limits the discharge of carbon monoxide, nitrogen oxides (NO_X), sulfur oxides, volatile organic compounds (VOCs), and particulate matter emissions from stationary internal combustion (IC) engines. Revisions to Rule 324 addressed the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). Rule 324 revisions included Reasonably Available Control Technology (RACT) for NO_X. In addition, the amendments corrected typographical or other clerical errors; made minor grammatical changes to improve readability or clarity; modified the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or made various other minor changes of a purely editorial nature. As these changes did not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 14 of this notice.

Issues Raised and Discussed During this Rulemaking Process:

Stakeholders expressed a general understanding for the need for rule revisions based on the department's nonattainment status; however, Stakeholders were concerned about the emission limitations and what is considered "RACT" and what is considered "beyond RACT". In addition, questions were raised regarding the following:

- The correlation of Rule 324 with New Source Performance Standards (NSPS)
- The emission limitations for existing engines and new engines
- The compliance schedule for equipment being removed from service

Description of Amendments:

Regarding the Title of the Rule:

The title of the rule was changed to "Stationary Reciprocating Internal Combustion Engines (RICE)". The term "stationary internal combustion (IC) engine" was changed to "stationary reciprocating internal combustion engine (RICE)" in the definitions and throughout the rule.

Regarding Applicability:

- Section 102 (Applicability): Rule 324 continues to apply to spark-ignition engines or compression-ignition engines including stationary RICE used in cogeneration, with a rated brake horsepower (rated bhp) of greater than 250 and to also apply to a combination of stationary RICE each with a rated bhp greater than 50 used at a source, whose maximum aggregate rated bhp is greater than 250. Rule 324 was revised to also apply to stationary RICE that are subject to federal standards of performance.
- Section 102.3 (Applicability): Rule 324 included new Section 102.3 (per a Stakeholder's comment) a provision that states that engines subject to Rule 324 may be subject to New Source Performance Standards (NSPS) and/or National Emission Standards for Hazardous Air Pollutants (NESHAP). This text is similar to text in Rule 322 (Power Plant Operations) and Rule 323 (Fuel Burning Equipment from Industrial/Commercial/Institutional (ICI) Sources).

Regarding Exemptions:

- Section 103.2 (Exemptions): Rule 324 clarified that nonroad internal combustion (IC) engines are not considered stationary RICE; included nonroad internal combustion (IC) engines in new Section 103.2; and added that a nonroad internal combustion (IC) engine must be operated and approved by the Control Officer as a nonroad internal combustion

(IC) engine in order for such engine to be exempt from all of the requirements of Rule 324.

- Sections 104, 105, and 106 (Partial Exemptions): Rule 324 added "as defined in this rule" after "emergency engine" to clarify that the provision that an emergency engine shall not exceed 500 hours of operation applies to the definition of "emergency engine" and applies to an emergency engine subject to Section 104; clarified which provisions in Rule 324 apply to low usage non-emergency engines; and added a partial exemption for engines subject to 40 CFR Part 63, Subpart ZZZZ.

Regarding Definitions:

- The requirements in Rule 324 now harmonize with New Source Performance Standards (NSPS) IIII, JJJJ, and Most Achievable Control Technology (MACT) ZZZZ. The definitions of "existing engine" and "new engine" were deleted from Rule 324; the terms are not used in the rule. Rule 324 references the dates before and after which NSPS were promulgated. Rule 324 applies to spark-ignition engines and compression-ignition engines with a rated brake horsepower of greater than 250 and to any stationary reciprocating internal combustion engine subject to the federal standards of performance set forth in 40 CFR 60, Subpart IIII for compression-ignition engines or 40 CFR 60, Subpart JJJJ for spark-ignition engine.
- The definition of "Identical Replacement Engine" was made consistent with the definition of "Equivalent Replacement Engine". The definition of "Internal Combustion (IC) Engine, Nonroad" was clarified so the text corresponds with the introductory text and corresponds with the definition of "Nonroad" in 40 CFR 1068.30. The U.S. Environmental Protection Agency (EPA) commented that the proposed text that a nonroad IC engine must be approved by the Control Officer (Section 212.1(d)) allows discretion to the Control Officer without guidance or restriction on how the Control Officer shall make the determination. The EPA commented that this text/discretion should be removed. Accordingly, the definition of "nonroad IC engine" now includes an introductory statement that the requirements of a nonroad IC engine must be met and approved by the Control Officer in order for the engine to be determined to be a nonroad IC engine; the intent is that even if the engine meets the definition of a "nonroad IC engine", it is not a nonroad IC engine until the Control Officer approves it.
- The term "Prime Engine" was changed to "Non-Emergency Engine" and the definition of "Non-Emergency Engine" was added, which is the same definition as the definition of "Prime Engine". The term "prime engine" was changed to "non-emergency engine" throughout the rule.
- The definition of "Internal Combustion (IC) Engine, Nonroad" was changed to "Nonroad Internal Combustion (IC) Engine", since "nonroad" is the most important term.
- The definition of "Internal Combustion (IC) Engine, Stationary" was changed to "Stationary Internal Combustion Engine (RICE)", since "stationary" is the most important term.

Regarding Good Combustion Practices:

- Section 302 (Good Combustion Practices/Tuning Procedure for Stationary RICE): Rule 323 now includes a provision that a handheld monitor may be used by the Control Officer to determine compliance.

Regarding Limitations for Non-Emergency Engines:

- Section 304 (Limitations for Non-Emergency Engines): Rule 324 clarified the three options that non-emergency engines have for complying with Rule 324. A source can comply with (1) the provisions for add-on control equipment for non-emergency engines, (2) the current emission limitations, or (3) the federal standards of performance for non-emergency engines. The current emission limits in Rule 324 are retained; such limits apply to:
  - Engines manufactured prior to October 22, 2003 (the date when Rule 324 was adopted)
  - Engines manufactured on or after October 22, 2003 but prior to July 11, 2005 (the date the New Source Performance Standards were adopted for compression-ignition engines)
  - Engines manufactured on or after October 22, 2003 but prior to June 12, 2006 (the date the New Source Performance Standards were adopted for spark-ignition engines)
- Rule 324 was revised to include a requirement that spark-ignition engines manufactured after June 12, 2006 and compression-ignition engines manufactured after July 11, 2005

comply with federal standards of performance. Per Stakeholders' comments, Section 304.2, Table 2 does not include a footnote regarding test methods for PM; Section 500 includes test methods for PM.

- Section 306 (Equivalent Replacement Engine or Identical Replacement Engine): Rule 324 clarified when an equivalent replacement engine or an identical replacement engine is to be treated as the original stationary RICE. Section 306.2 was removed; the text is captured in Section 307 (Modification to a Stationary RICE).
- Section 307 (Modification to a Stationary RICE): Rule 324 added Section 307 to address if a modification is made to a stationary RICE.
- Section 308 (Non-Resetting Totalizing Hour Meter): Rule 324 added Section 308 to require the installation, operation, and maintenance of non-resetting totalizing hour meter.

Regarding Administrative Requirements:

- Section 401 (Compliance Schedule-Stationary RICE Being Removed from Service) was revised to require that if a stationary RICE must be removed from service because such engine does not comply with the emission limits in Rule 324, then the stationary RICE that replaces such engine must comply with all applicable provisions of Rule 324, e.g., limitations for fuel, limitations for opacity, and with the federal standards of performance for non-emergency engines.
- Section 402 (Compliance Schedule-Non-Resetting Totalizing Hour Meter) was added; a non-resetting totalizing hour meter must be installed, operated, and maintained on a stationary RICE.

Regarding Compliance Determinations:

- Section 501 (Compliance Determination) was clarified regarding the compliance determination requirements for stationary RICE, an engine family, and engines with a displacement of greater than or equal to 30 liters per cylinder. Also, the compliance determination for low sulfur oil verification (Section 501.3) was changed to a compliance determination for ultra low sulfur diesel verification consistent with federal standards. Due to the EPA's comments, additional language was added to clarify that sulfur content verification documents must provide accurate values and utilize enforceable test methods to determine the sulfur content. Also, the test method for determining sulfur content of waste gas was added in Sections 501.4 and 504.16 (Compliance Determination-Test Methods Incorporated by Reference).
- Section 501.1(d) (Compliance Determination-Stationary RICE) was added. Rule 324 was revised to include a requirement that sources that choose add-on control equipment for non-emergency engines (Section 304.1) shall demonstrate compliance by installing, operating, and maintaining in calibration, devices that continuously monitor the operational characteristics of the engine and any NO_X emission reduction system.
- Section 503 (Compliance Determination-Test Methods Incorporated by Reference) was clarified to allow alternative test methods.
- Section 504.12 (Compliance Determination-Test Methods Incorporated by Reference): The test method "American Society of Testing Materials, ASTM Method D1266-98, ("Standard Test Method for Sulfur in Petroleum Products - Lamp Method"), 1998" was deleted. The EPA commented that the test method may not be appropriate; its range is 0.01-0.4% which will not be able to verify compliance with the definition of ultra low sulfur diesel fuel at <0.0015%.

7. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.

2. There is credible evidence that the rule, ordinance or other regulation is either;

(a) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.

(b) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.

3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. The County failed to meet 2008 8-hour ozone standard by the marginal area attainment date of July 20, 2015. The EPA issued a final rule, effective June 3, 2016, reclassifying the Maricopa County area to "moderate" (published at 86 FR 26697, May 4, 2016). Further, a portion of the County was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the County to continue to maintain the measures and requirements that allowed the County to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM_{10} 24-hour standard. This is the only serious PM_{10} nonattainment area in Arizona. Revisions to Rule 324 are being proposed to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The proposed amendments in Rule 324 include Reasonably Available Control Technology (RACT) for NO_X.

The department complies with A.R.S. § 49-112(B) in that the amendments to Rule 324 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49; address the peculiar local conditions in Maricopa County; are authorized under A.R.S. Title 49, Chapter 3, Article 3; and are not in lieu of a state program.

8. **Documents or studies referenced and/or reviewed for this rulemaking:**

Not applicable

9. **Showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**

Not applicable

10. **Summary of the economic, small business, and consumer impact:**

The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

An identification of the rulemaking.

This rulemaking revised Rule 324 (Stationary Internal Combustion (IC) Engines).

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.

The persons who are directly affected by and bear the costs of this rulemaking will be facilities in Maricopa County that use stationary spark- or compression-ignited RICE including stationary RICE used in cogeneration with a rating of greater than 250 brake horsepower (rated bhp), and facilities that use a combination of stationary RICE each with a rated bhp greater than 50 used at a source, whose maximum aggregate rated bhp is greater than 250. The department has issued permits to more than 590 facilities.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**

Because this rulemaking did not impose any new compliance burdens on regulated entities or introduce additional regulatory requirements, the department deemed that none of the revisions have potentially significant economic impacts. It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking will not impose

increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

The benefits of the rule revision are anticipated to be a result of the following changes:

- Changing the title of the rule to: Stationary Reciprocating Internal Combustion Engines (RICE);
- Adding a requirement that spark-ignition engines manufactured after June 12, 2006 and compression-ignition engines manufactured after July 11, 2005 comply with the federal standards of performance;
- Adding a compliance schedule for installing, maintaining, and operating a non-resetting totalizing hour meter;
- Reformatting Tables 1, 2, and 3 to clarify emission limits and retain current emission limits;
- Clarifying the compliance schedule for stationary RICE being removed from service;
- Clarifying that alternative test methods may be used if approved by the Control Officer.

The requirement that spark-ignition engines and compression-ignition engines must comply with existing federal standards of performance and the compliance schedule for a non-resetting totalizing hour-meter are revisions that now align Maricopa County requirements with existing federal standards. Based on observations by department inspectors, all facilities subject to this rule as revised should already be in compliance with this requirement; therefore, no incremental costs are associated with the Rule 324 revisions.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions do not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity provided by the Rule 324 revisions will provide a benefit to the regulated community; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision did not impose increased monetary or regulatory costs on individuals so regulated.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions did not impose increased monetary or regulatory costs on any business, persons, or individuals so regulated.

(a) **An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County that use stationary spark- or compression-ignited RICE including stationary RICE used in cogeneration with a rating of greater than 250 brake horsepower (rated bhp), and facilities that use a combination of stationary RICE each with a rated bhp greater than 50 used at a source, whose maximum aggregate rated bhp is greater than 250.

(b) **The administrative and other costs required for compliance with the rulemaking.**

This rulemaking updated and clarified existing rule provisions and definitions to be consistent with federal performance standards to reduce confusion and improve understanding and readability. The department considered the implications of the amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**

By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability. Although the revised rule does include a schedule for compliance with installation of non-resetting totalizing hour meters, based on department inspector observations, the subject sources should already be in compliance with this requirement; therefore, no cost impacts on businesses, including small businesses, are anticipated.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**

This rulemaking did not impose any new compliance burdens on regulated entities or introduce additional regulatory requirements and will not impose increased monetary or regulatory costs on any business, persons, or individuals so regulated. As such, there are no costs to pass through to consumers which means there are no impacts on consumers.

A statement of the probable effect on state revenues.

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

11. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name:	Johanna M. Kuspert or Hether Krause
	Maricopa County Air Quality Department
	Planning and Analysis Division
Address:	1001 N Central Avenue, Suite 125
	Phoenix, AZ 85004
Telephone:	(602) 506-6010
Fax:	(602) 506-6179
E-mail:	aqplanning@mail.maricopa.gov

12. **Description of the changes between the proposed rule, including supplemental notices and final rule:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R 1145), the department made the following additional amendments:

- Section 103.2 (Exemptions): Did not include proposed new text "a piece of equipment that is approved by the Control Officer as a nonroad IC engine" in Section 103.2(b), per comments from the Salt River Project Agricultural Improvement and Power District (SRP) and the U.S. Environmental Protection Agency (EPA).
- Sections 104, 105, 106 (Partial Exemptions): Revised the introductory statements to state in part "…shall comply only with the provisions of…", per comments from SRP.
- Sections 105.1 and 105.2 (Partial Exemptions for Low Usage Non-Emergency Engines): Changed proposed new text "hours in any 12 consecutive-calendar-month period" to "hours per calendar year" to be consistent with text in Section 104.5 (Partial Exemptions for Emergency Engines) and to be consistent with text in 40 CFR Part 60, Subpart IIII and 40 CFR Part 60, Subpart JJJJ.
- Section 207.3 (Definition of "Equivalent Replacement Engine"): Included new text "for the purpose of this rule" to the end-of the first sentence, per comments from the EPA.
- Section 212.1 (Definition of "Nonroad Internal Combustion (IC) Engine"): Did not include proposed new text "upon approval by the Control Officer" in Section 212.1, per comments from the Arizona Public Service Company (APS), SRP, and the EPA.
- Section 304.1 (Limitations for Non-Emergency Engines 250 Rated Bhp or Greater-Add-on Control Equipment for Non-Emergency Engines): Did not include proposed new text regarding add-on control equipment for non-emergency engines - "The uncontrolled

NO_X emissions from the non-emergency engines shall be reduced with add-on control equipment in compliance with Table 1 (engine category and weight percent reduction)".

- Section 501.1(d) (Compliance Determination-Stationary RICE): Did not include proposed new text "An owner or operator of a stationary RICE shall demonstrate compliance with Section 304.1 of this rule, by installing, operating, and maintaining in calibration, devices that continuously monitor the operational characteristics of the engine and any NO_X emission reduction system", because the department did not include proposed new text in Section 304.1 regarding add-on control equipment for non-emergency engines.
- Section 501.3 (Compliance Determination-Ultra Low Sulfur Diesel Verification): Revised the new text after the list of items in Sections 501.3 (a)-(f) to change "and utilize" to "or be based on" and added "as approved by the Administrator" after "test methods".
- Section 501.3 (Compliance Determination-Ultra Low Sulfur Diesel Verification): Revised the new text from "sulfur content of the fuel oil to demonstrate the 0.0015% limits" to "sulfur content of the fuel to demonstrate the 0.0015% limit". Revised the new text in Section 501.3(f) from "testing of the fuel oil for sulfur content" to "test results of the fuel for sulfur content"
- Section 501.3(d) (Compliance Determination-Ultra Low Sulfur Diesel Verification): Removed Safety Data Sheets (SDS)/Material Safety Data Sheets (MSDS) from the list of documentation of the sulfur content of the fuel oil, per the EPA's comments.
- Section 503 (Compliance Determination-Test Methods Incorporated By Reference): Deleted the provision allowing test methods to be used upon sole approval by the Control Officer and added text that allows test methods as approved by the Administrator to be used, per the EPA's comments.

13. **Summary of the comments made regarding the rule and the department response to them:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R. 1145), the department received comments from the Arizona Public Service Company (APS), Salt River Project Agricultural Improvement and Power District (SRP), and the U.S. Environmental Protection Agency (EPA). The comments and the department's responses are provided below.

Comment #1: Section 103.2 (Exemptions)

In the proposed revisions to Rule 324, MCAQD is proposing to remove portions of Section 103.2, which provided exceptions for nonroad IC engines and Section 104, which provides partial exemptions for emergency IC engines. Based on language contained in the preamble, the details in the formatting of the modified text, which includes overlapping underline and strikethrough, and the structure of the remaining portions of those sections, SRP believes that MCAQD has inadvertently deleted those partial sections. Accordingly, SRP suggests MCAQD reinstate the rule language for Section 103.2 and 104 as contained in the April 25, 2016 Board of Health Staff Report.

Response #1: Section 103.2 (Exemptions)

The department corrected the overlapping underline and strikethrough in Section 103 (Exemptions) and did not include proposed new text "a piece of equipment that is approved by the Control Officer as a nonroad IC engine" in Section 103.2(b).

Comment #2: Section 103.2(b) (Exemptions)

This section allows discretion to the Control Officer on the definition of "nonroad engine" without guidance or restriction on how the Control Officer shall make that determination. The EPA recommends that MCAQD remove this discretion.

Response #2: Section 103.2(b) (Exemptions)

The department did not include proposed new text "a piece of equipment that is approved by the Control Officer as a nonroad IC engine" in Section 103.2(b).

Comment #3: Sections 104, 105, and 106 (Partial Exemptions)

In the proposed revisions to Sections 104, 105, and 106, which provide partial exemptions for emergency engines, low use non-emergency engines, and non-emergency engines subject to 40 CFR Part 63, Subpart ZZZ, respectively, MCAQD does not indicate which sections of Rule 324 the affected engines are exempt from. SRP suggests that MCAQD revise Sections 104, 105, and 106 to indicate which sections the affected engines are exempt from.

Response #3: Sections 104, 105, and 106 (Parial Exemptions)

The department revised the introductory statements in Sections 104, 105, and 106 to state in part "…shall comply only with the provisions of…".

Comment #4: Section 212.1 (Definition of "Nonroad Internal Combustion (IC) Engine")
The proposed revisions to the definition of "Nonroad Internal Combustion (IC) Engine" now indicates that an engine must first receive approval from MCAQD prior to fully qualifying as a nonroad IC engine. Qualifying as a nonroad IC engine is critical since all nonroad IC engines are fully exempt from the requirements of Rule 324. The requirement to receive prior approval from MCAQD for all nonroad IC engines will place a substantial amount of burden on both industry and MCAQD. Given that nonroad IC engines encompass a wide array of equipment including tractors, cranes, bull dozers, fork lifts, portable generators and many other portable engines, the number of IC engines requiring approval from MCAQD will be significant, likely in the thousands. Given that nonroad IC engines have historically been exempt from Rule 324 based on meeting the definition alone, there is likely a great number of IC engine owners and operators that are unaware of the proposed requirements to obtain approval from MCAQD as they are not trcking the rulemaking process. Lastly, MCAQD has not explained why requiring approval for nonroad IC engines is necessary. If MCAQD has reason to believe that sources are inappropriately claiming stationary IC engines as nonroad IC engines in order to claim a rule exemption, this is best addressed through MCAQD's compliance and enforcement divisions, rather than through a change to the provisions of Rule 324. The change would have significant implications to owners and operators of nonroad IC engines and SRP strongly urges MCAQD to not finalize such approval requirements in the final rule.
Response #4: Section 212.1 (Definition of "Nonroad Internal Combustion (IC) Engine")
The department did not include proposed new text "upon approval by the Control Officer" in Section 212.1.
Comment #5: Section 212.1 (Definition of "Nonroad Internal Combustion (IC) Engine")
Section 212 of Rule 324 states "upon approval by the Control Officer…". Does this mean we now have to have all nonroad engines approved by the Control Officer? APS has dozens , if not hundreds, of nonroad engines located within Maricopa County. This includes portable light fixtures, air compressors, nonroad engines used throughout the County to provide power at construction sites. It is unrealistic and unnecessary to have approval on these units since they clearly meet the definition of "nonroad engine".
Response #5: Section 212.1 (Definition of "Nonroad Internal Combustion (IC) Engine")
The department did not include proposed new text "upon approval by the Control Officer" in Section 212.1.
Comment #6: Section 212.1 (Definition of "Nonroad Internal Combustion (IC) Engine")
This section allows discretion to the Control Officer on the definition of "nonroad engine" without guidance or restriction on how the Control Officer shall make that determination. The EPA recommends that MCAQD remove this discretion.
Response #6: Section 212.1 (Definition of "Nonroad Internal Combustion (IC) Engine")
The department did not include proposed new text "upon approval by the Control Officer" in Section 212.1.
Comment #7: Section 304.3 (Limitations for Non-Emergency Engines 250 Rated BHP or Greater-Federal Standards of Performance for Non-Emergency Engines)
Limits for engines subject to NSPS are not automatically considered RACT by EPA for the purposes of SIP approval. MCAQD must provide analysis that NSPS requirements cited here meet RACT or provide the intended numerical limits and operational requirements explicitly within this rule for EPA to review for SIP approval purposes.
Response #7: Section 304.3 (Limitations for Non-Emergency Engines 250 Rated BHP or Greater-Federal Standards of Performance for Non-Emergency Engines)
A review was conducted by Eastern Research Group, Inc. (ERG) to compare the emissions limits in Rule 324 to other similar rules in other similar jurisdictions, as well as national standards and data sources. ERG reviewed and compared State Implementation Plan (SIP) rules for IC engines in several areas of California to the NSPS Subparts IIII and JJJJ limits incorporated under the revisions to Rule 324. Specifically, IC engine rules for these areas were reviewed: Placer County Air Pollution Control District, Sacramento Metropolitan Air Quality Management District, Ventura County Air Pollution Control District, and South Coast Air Quality Management District. In addition, ERG searched the RACT/BACT/LAER Clearinghouse (RBLC) to locate applicable control technologies. ERG's search of the RBLC specified processes in the Internal Combustion Engines categories, including Large Internal Combustion Engines greater than 500 horsepower (hp) (all fuel types) and Small Internal Combustion Engines less than 500 hp (all fuel types), with permits dating back to 2000. The search results included the following data fields: RBLC ID, facility name and state, permit

date, process name, throughput, pollutant, control technology, and percent efficiency of control. Based on searches conducted for facilities in the IC engine category, ERG found 283 recent RACT, BACT, and LAER decisions for CO, NO_X, and VOC emissions that had sufficient information to be included in this analysis. While the initial RBLC query returned thousands of records, RBLC records were only used if the engine size could be determined and if the emission limits were in units of (g/HP-hr). The majority of the RBLC determinations represent PSD-BACT determinations and some represent LAER determinations.

The engine rules in NSPS Subparts IIII and JJJJ are complex and provide numerous subcategories of engines subject to different emission limits. However, the NSPS rules are generally consistent with both the California SIP rules and recent RBLC determinations, with the exception of the SIP rules for the Los Angeles nonattainment area. The Los Angeles area area of California has been classified as being in serious, severe, and extreme nonattainment with the 2008 8-hour ozone standard. Therefore, because these areas have worse nonattainment statuses as compared to Maricopa County, it is expected that their IC engine limits would be more restrictive than for a moderate nonattainment area such as Maricopa County.

The RBLC results represent 283 records that had sufficient information to be useful for comparison, Of the 283 records evaluated, 10 were for smaller compression-ignition engines (less than 250 hp). The NO_X and CO limits for these smaller engines are lower than the corresponding NSPS Subpart IIII limits for larger engines (greater than 250 hp), while the VOC limits are higher. For the larger engines, the NSPS limits fell within the range of the RBLC limits for most pollutants and engine types, the only exception being VOC limits for spark-ignition engines manufactured between July 1, 2008 and January 1, 2011. A comparison of the emission limits in Rule 324 revisions and NSPS Subparts IIII and JJJJ with the range of limits found in RBLC and the California SIP rules shows that the emission limits in revised Rule 324 are within the range of values found in the RBLC and as required under the California SIP rules. Therefore, the department has determined that the NSPS requirements cited in Rule 324 meet RACT.

Comment #8: Section 306 (Equivalent Replacement Engine or Identical Replacement Engine)

New language at Section 306 treats equivalent and identical replacement engines the same as the engines they are replacing for the purposes of rule compliance. However, the definition of "Equivalent Replacement Engine" would allow for an engine that could be up to 20% larger than the original engine, with the requirement that such larger replacement must also decrease NO_X emissions by at least 20%. While this does not pose an approvability issue for draft Rule 324, the EPA requests that MCAQD clarify that this definition only applies in this context and does not have broader implications.

Response #8: Section 306 (Equivalent Replacement Engine or Identical Replacement Engine)

The department included new text "for the purpose this rule" to the end-of the first sentence in Section 207.3 (Definition of "Equivalent Replacement Engine").

Comment #9: Section 501.3 (Compliance Determination-Ultra Low Sulfur Diesel Verification)

This section allows for various documents to verify compliance with the ultra low sulfur diesel fuel limit. MCAQD should ensure the documents listed give accurate values and use enforceable test methods. For example, EPA generally has not approved the use of SDS/MSDS to determine compliance in SIP rules, unless the SDS/MSDS specifies that the compound of interest was determined by an approved EPA method.

Response #9: Section 501.3 (Compliance Determination-Ultra Low Sulfur Diesel Verification)

The department deleted Safety Data Sheets (SDS)/Material Safety Data Sheets (MSDS) from the list of documentation of the sulfur content of the fuel oil in Section 501.3(d). The department revised the new text after the list of items in Sections 501.3 (a)-(f) to change "and utilize" to "or be based on" and added "as approved by the Administrator" after "test methods".

Comment #10: Section 503 (Compliance Determination-Test Methods Incorporated By Reference)

Alternative test methods may not be used upon sole approval by the Control Officer. The EPA asks the County to remove this provision or include language that also requires EPA approval for alternative methods.

Response #10: Section 503 (Compliance Determination-Test Methods Incorporated By Reference)

The department deleted the provision allowing test methods to be used upon sole approval by the Control Officer and added text that allows test methods as approved by the Administrator to be used.

14. **Any other matters prescribed by statute that are applicable to the specific department or to any specific rule or class of rules:**
Not applicable

15. **Incorporations by reference and their location in the rule:**
The department incorporated by reference sections of the Code of Federal Regulations in Section 503 (Compliance Determination-Test Methods Incorporated by Reference)

16. **Was this rule previously an emergency rule?**
No

17. **Full text of the rule follows:**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS
RULE 324
STATIONARY RECIPROCATING INTERNAL COMBUSTION ~~(IC)~~ ENGINES (RICE)
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~~Adopted 10/23/03~~
~~Revised 10/17/07~~

Adopted 10/22/2003; Revised 10/17/2007; **Revised 11/02/2016**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS
RULE 324

STATIONARY RECIPROCATING INTERNAL COMBUSTION ~~(IC)~~ 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 ~~(IC)~~ engines (RICE).

102 **APPLICABILITY:** ~~The provisions of this rule apply to any single existing or new stationary spark or compression-ignited reciprocating IC engine including stationary IC engines used in cogeneration, with a rating of greater than 250 brake horsepower (bhp). The provisions of this rule also apply to a combination of IC engines each with a rated brake horsepower greater than 50 bhp used at a single source, whose maximum aggregate rated brake horsepower is greater than 250 bhp~~.

~~102.1~~ This rule applies to a spark-ignition engine or compression-ignition engine including stationary RICE used in cogeneration, with a rated brake horsepower (rated bhp) of greater than 250. This rule also applies to a combination of stationary RICE each with a rated bhp greater than 50 used at a source, whose maximum aggregate rated bhp is greater than 250.

~~102.2~~ A stationary RICE subject to this rule that is also subject to the federal standards of performance set forth in 40 CFR Part 60, Subpart IIII for compression-ignition engines or 40 CFR Part 60, Subpart JJJJ for spark-ignition engines shall comply with the most stringent requirements. Whenever more than one provision in this rule applies to such engine or whenever a provision in this rule and a provision in the federal standards apply to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

~~102.3~~ **NSPS & NESHAP:** In addition to this rule, a stationary RICE 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. Whenever more than one provision in this rule applies to such engine or whenever a provision in this rule and a provision in the federal standards apply to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

103 **EXEMPTIONS:** ~~The following types of stationary IC engines are exempt from all of the requirements of this rule but shall comply with Rule 300:~~

~~103.1 Any rotary engine, including gas turbines, jet engines.~~

~~103.2 An IC engine operated as a nonroad engine.~~

~~103.3 A laboratory IC engine 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.~~

~~103.4 A prime engine when it is operated for purposes of performance verification and testing by the owner or operator or by a manufacturer or distributor of such equipment for the purpose of performance verification and testing at the production facility.~~

~~103.5 A compressed gas IC engine used for solar testing and research programs.~~

~~103.6 An IC engine operated as an emergency generator or other equipment at a nuclear power plant that must run for safety reasons and/or operational tests to meet requirements imposed by the Nuclear Regulatory Commission.~~

~~103.7 An IC engine test stand used for evaluating engine performance. ; and~~

~~103.8 An IC engine used for training purposes as long as the total number of hours of the operation does not exceed 100 hours per calendar year per engine.~~

103.1 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:

a. A rotary engine, including gas turbines, jet engines.

b. 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.

c. A non-emergency engine when it is operated for purposes of performance verification and testing by the owner or operator or by a manufacturer or distributor of such equipment for the purpose of performance verification and testing at the production facility.

d. A compressed gas stationary RICE used for solar testing and research programs.

e. A stationary RICE operated as an emergency engine or other equipment at a nuclear power plant that must run for safety reasons and/or operational tests to meet requirements imposed by the Nuclear Regulatory Commission.

f. A stationary RICE test stand used for evaluating engine performance.

g. A stationary RICE used for training purposes as long as the total number of hours of the operation does not exceed 100 hours per calendar year per engine.

103.2 An IC engine operated as a nonroad IC engine is exempt from all of the requirements of this rule but shall comply with Rule 300 (Visible Emissions) of these rules.

104 PARTIAL EXEMPTIONS FOR EMERGENCY ENGINES: ~~Any~~ A stationary ~~IC engine~~ RICE operated as an emergency engine, as defined in this rule, for any of the following reasons ~~is exempt from all of the provisions of this rule, except for the provisions in Sections 301, 303, and subsections 502.1 and 502.4:~~ shall comply only with the provisions in Sections 301, 303, 306, 307, 400, 502.1 and 502.4 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 ~~the~~ 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 does not exceed 100 hours per calendar year per engine as evidenced by an installed non-resettable hour meter.

104.6 Used as the ~~prime~~ non-emergency engine when the ~~prime~~ non-emergency engine has failed, but only for such time as is needed to repair the ~~prime~~ non-emergency engine. ; ~~- or~~

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, ~~LOW USAGE PRIME~~ ENGINES: The following low usage non-emergency engines ~~, low usage prime engines are exempt from all of the provisions of this rule except for the provisions in Sections 301, 303, and subsections 502.1 and 502.4:~~ shall comply only with the provisions in Sections 301, 303, 306, 307, 400, 502.1 and 502.4 of this rule for:

105.1 Each engine with a rated bhp at or below 1000 ~~bhp~~ that operates less than 200 hours ~~in any 12 consecutive month period~~ per calendar year as evidenced by an installed non-resettable hour meter.

105.2 Each engine with a rated bhp above 1000 ~~bhp~~ that operates less than 100 hours ~~in any 12-consecutive-month period~~ per calendar year as evidenced by an installed non-resettable hour meter.

106 **PARTIAL EXEMPTION FOR NON-EMERGENCY ENGINES SUBJECT TO 40 CFR PART 63, SUBPART ZZZZ:** A stationary RICE subject to the federal standards of performance set forth in 40 CFR Part 63, Subpart ZZZZ shall comply only with the provisions in Sections 502.1, 502.2, and 502.3 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. ~~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 **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 **COGENERATION UNIT:** ~~Internal combustion engine 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.

203 **COMPRESSION-IGNITION ENGINE:** ~~A reciprocating internal combustion 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.

204 **DIESEL ENGINE:** A type of ~~compression-ignited IC engine~~ compression-ignition engine.

205 **EMERGENCY ENGINE:** ~~Any stationary standby IC engine~~ A stationary RICE whose sole function is to provide back-up power when electric power from the local utility is interrupted or when operated solely for any of the reasons listed in Section 104 of this rule. An emergency engine, for the purposes of this rule, shall not be used to supply standby power due to a voluntary reduction in power by a utility or power company, supply power for distribution or sale to the grid, or supply power at a source in order to avoid peak demand charges or high electric energy prices during on-peak price periods and shall not exceed 500 hours of operation per calendar year including the 100 hours listed in ~~subsection~~ Section 104.5 of this rule.

206 **ENGINE FAMILY:** A group of ~~engines~~ stationary RICE with similar design features such as fuel type, cooling medium, method of air aspiration, combustion chamber design including cylinder bore and stroke, exhaust after treatment (if any), method of fuel admission, and method of control. These engines are also expected to have similar emission and operating characteristics throughout their useful lives.

207 **EQUIVALENT REPLACEMENT ENGINE:** ~~An engine~~ A stationary RICE that is substituted for ~~a~~ another stationary ~~IC engine~~ RICE that is intended to perform the same or similar function as the original ~~engine~~ stationary RICE and where all of the following conditions exist:

- **207.1** The equivalent replacement engine results in equal or lower air contaminant emissions than the ~~existing engine~~ original stationary RICE; and
- **207.2** The equivalent replacement engine meets the emission control technology standards contained in ~~either Table 1 or Table 2~~ Section 304 of this rule; and
- **207.3** The rated bhp of the equivalent replacement engine does not exceed the rated bhp of the ~~existing engine~~ original stationary RICE (or sum of ~~existing engines~~ original stationary RICE) by more than 20 percent, for the purpose of this rule. For every percentage point increase of the rated ~~brake horsepower~~ bhp, there shall be an associated decrease in emissions of nitrogen oxides, expressed as a mass per unit time, equal to or exceeding two percentage points.

~~208 EXISTING ENGINE: An engine that commenced operation prior to October 22, 2003 or an engine on which the construction or modification has commenced prior to October 22, 2003, including the contractual obligation to undertake and complete an order for an engine.~~

~~209~~ **208** **IDENTICAL REPLACEMENT ENGINE:** ~~An engine that is substituted for an existing stationary IC engine that has the same manufacturer type, model number, manufacturer's maximum rated capacity (bhp), and that is intended to perform the same or similar function as the original stationary IC engine that it replaces and has equal or lower emissions or meets the emission control technology requirements in Section 304, Table 1, 2, or 3.~~ 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.

~~210 INTERNAL COMBUSTION (IC) ENGINE, NONROAD:~~

~~210.1 An IC engine~~:

~~a. 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~~

~~b. In or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); or~~

~~c. 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.~~

~~210.2 An internal combustion engine is not a nonroad engine if~~:

~~a. The engine used to propel a motor vehicle or a vehicle used solely for competition, or is subject to standards promulgated under Section 202 of the Clean Air Act; or~~

~~b. The engine regulated by a federal New Source Performance Standard promulgated under Section 111 of the Clean Air Act; or~~

~~c. The engine otherwise included in paragraph (c) above of this definition remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. 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. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is 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. This paragraph does not apply to an engine after the engine is removed from the location.~~

~~211 INTERNAL COMBUSTION (IC) ENGINE, STATIONARY : Any reciprocating, piston-driven IC 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. Any 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 IC engine is not a nonroad engine.~~

~~212~~ **209** **LEAN-BURN ENGINE:** ~~A spark-ignited 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%.

~~213~~ **210** **LOCATION:** Any single site at a building, structure, facility or installation.

~~214 LOW SULFUR OIL: Fuel oil containing less than or equal to 0.05 % sulfur by weight.~~

~~215 NEW ENGINE: An engine that is not an existing engine.~~

211 **NON-EMERGENCY ENGINE:** A stationary RICE that is dedicated to a process or processes for the purpose of supplying primary mechanical or electrical power.

212 **NONROAD INTERNAL COMBUSTION (IC) ENGINE:**

212.1 Equipment that meets the following requirements are nonroad IC engines:

a. 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

b. 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

c. 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.

212.2 The following are not nonroad IC engines:

a. An engine used to propel a motor vehicle, an aircraft, or equipment used solely for competition; or

b. An engine regulated by a federal New Source Performance Standard promulgated under Section 111 of the Clean Air Act; or

c. An engine otherwise included in Section 212.1(c) of this rule that remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. 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. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is 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. This paragraph does not apply to an engine after the engine is removed from the location.

~~216~~ **213** **PART(S) PER MILLION, DRY VOLUME (PPMDV):** A unit of proportion equal to 10^{-6} that is measured on a dry basis (minus water) at 15% oxygen.

~~217 PRIME ENGINE: A principal or main use engine that is dedicated to a process or processes for the purpose of supplying primary mechanical or electrical power, as opposed to an emergency engine.~~

~~218~~ **214** **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.

~~219~~ **215** **RICH-BURN ENGINE:** ~~Any spark-ignited IC engine~~ A spark-ignition engine that is not a lean-burn engine.

~~220~~ **216** **SPARK-IGNITION ENGINE:** ~~An IC 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.

217 **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~~ **218** **SULFUR OXIDES (SO_X):** Oxides of sulfur calculated as equivalent sulfur dioxide.

219 **ULTRA LOW SULFUR DIESEL:** Fuel oil containing less than or equal to 0.0015 % sulfur by weight.

~~222~~ **220** **WASTE DERIVED FUEL GAS**: ~~Any~~ A gaseous fuel that is generated from the biodegradation of solid or liquid waste including, but not limited to, ~~sewage sludge,~~ digester gas and landfill gas.

SECTION 300 – STANDARDS:

301 **LIMITATIONS FOR** ~~NEW AND EXISTING STATIONARY IC ENGINES~~ **STATIONARY RICE - FUEL**: An owner or operator of ~~any~~ an engine that meets the criteria listed in Section 102 of this rule shall comply with either of the following:

301.1 Use any fuel that contains no more than ~~0.05%~~ 0.0015% sulfur by weight, alone or in combination with other fuels.

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.

302 **GOOD COMBUSTION PRACTICES / TUNING PROCEDURE FOR STATIONARY RICE:** An owner or operator of an engine that meets the criteria listed in Section 102 of this rule shall conduct preventative maintenance or tuning procedures as recommended by the engine manufacturer to ensure good combustion practices to minimize NO_X emissions. A handheld monitor may be used if so desired by the owner or operator for measurement of

NO_X and CO ~~and~~ concentrations in the effluent stream after each adjustment is made~~. This~~; this may assist in determining that the proper adjustment has been made to ~~ensure NO_x and CO minimization~~ minimize NO_X and CO emissions. A handheld monitor may be used by the Control Officer to determine compliance with this section. ~~In lieu of a manufacturer's procedure, a different procedure specified by any other maintenance guideline may be used as a default procedure.~~ The owner or operator shall include all of the following in the tuning procedures ~~procedure shall include all of the following~~, if the engine is so equipped, and if such procedures are appropriate to the type of engine:

302.1 Lubricating Oil and Filter: Change once every three months or after no more than 300 hours of operation, whichever occurs last.

302.2 Inlet Air Filter: Clean once every three months or after no more than 300 hours of operation and replace every 1,000 hours of operation or every year, whichever occurs last.

302.3 Fuel Filter: Clean once every year or replace (if cartridge type) once every 1,000 hours of operation, whichever occurs last.

302.4 Check and adjust the following once every year or after no more than 1,000 hours of operation, whichever occurs last:

- **a.** Intake and exhaust valves
- **b.** Spark plugs (if so equipped)
- **c.** Spark timing and dwell or fuel injection timing (if adjustable), and
- **d.** Carburetor mixture (if adjustable).

302.5 Spark Plugs and Ignition Points: Replace after 3,000 hours of operation or every year whichever occurs last

302.6 Coolant: Change after 3,000 hours of operation or every year whichever occurs last.

302.7 Exhaust System: Check for leaks and/or restrictions after 3,000 hours of operation or every year whichever occurs last.

303 LIMITATIONS FOR STATIONARY RICE – OPACITY: ~~No~~ An owner or operator of an engine that meets the criteria in Section 102 of this rule shall not discharge into the ambient air from any ~~single source of emissions~~ such engine any air contaminant, other than uncombined water, in excess of 20% opacity.

304 ~~ADDITIONAL~~ LIMITATIONS FOR ~~PRIME~~ NON-EMERGENCY ENGINES ~~>~~250 RATED BHP OR GREATER: ~~In addition to meeting the standards in Sections 301, 302, and 303, each existing or new prime engine greater than 250 rated bhp that is not listed in Sections 103, 104, or 105, shall comply with the emission limits or control technology requirements listed in Section 304, Table 1, 2, or 3, dependent upon the type of engine.~~ In addition to meeting the standards in Sections 301, 302 and 303 of this rule, an owner or operator of a non-emergency engine that meets the criteria in Section 102 of this rule shall comply with Sections 304.1 or 304.2 of this rule.

304.1 Engine Requirements for Non-Emergency Engines: The emissions in parts per million by dry volume (ppmdv) or grams per bhp (g/bhp) from the non-emergency engines shall comply with either Table 1 or Table 2 of this rule.

TABLE 1
COMPRESSION-IGNITION ENGINES

MANUFACTURED OR MODIFIED	RATED BHP	ENGINE REQUIREMENTS
Prior to October 22, 2003	250-399	770 ppmdv or 10 g/bhp-hr. NO_X or turbocharger with aftercooler/intercooler or 4-degree injection timing retard
Prior to October 22, 2003	400 plus	550 ppmdv or 7.2 g/bhp-hr. NO_X or turbocharger with aftercooler/intercooler or 4-degree injection timing retard
On or after October 22, 2003 but prior to July 11, 2005	>250	530 ppmdv or 6.9 g/bhp-hr. NO_X or turbocharger with aftercooler/intercooler or 4-degree injection timing retard; 1,000 ppmdv CO; 0.40 g/bhp-hr PM

TABLE 2
SPARK-IGNITION ENGINES

LEAN-BURN ENGINES				
MANUFACTURED OR MODIFIED	RATED BHP	OXIDES OF NITROGEN (NO_X)	VOLATILE ORGANIC COMPOUND (VOC)	CARBON MONOXIDE (CO)
Prior to October 22, 2003	>250	280 ppmdv or 4.0 g/bhp-hr	800 ppmdv or 5.0 g/bhp-hr	4,500 ppmdv
On or after October 22, 2003 but prior to June 12, 2006	>250	110 ppmdv or 1.5 g/bhp-hr	800 ppmdv or 5.0 g/bhp-hr	4,500 ppmdv

RICH-BURN ENGINES				
MANUFACTURED OR MODIFIED	RATED BHP	OXIDES OF NITROGEN (NOX)	VOLATILE ORGANIC COMPOUND (VOC)	CARBON MONOXIDE (CO)
Prior to October 22, 2003	>250	280 ppmdv or 4.0 g/bhp-hr or three-way catalyst*	800 ppmdv or 5.0 g/bhp-hr or three-way catalyst*	4,500 ppmdv or three-way catalyst*
On or after October 22, 2003 but prior to June 12, 2006	>250	20 ppmdv or 0.30 g/bhp-hr or three-way catalyst*	800 ppmdv or 5.0 g/bhp-hr or three-way catalyst*	4,500 ppmdv or three-way catalyst*

* The three-way catalyst shall provide a minimum of 80% control efficiency for NO_X and CO for those engines fueled with natural gas, propane or gasoline. In addition, the three-way catalyst shall also provide a minimum of at least 50% control efficiency for VOC for those engines fueled by gasoline.

~~NO_X EMISSION LIMITS OR CONTROL TECHNOLOGY REQUIREMENTS FOR EXISTING COMPRESSION-IGNITION ENGINES > 250 bhp~~

~~TABLE 1~~

~~RATED BRAKE HORSEPOWER~~ (bhp)	~~ENGINE REQUIREMENTS~~
~~250-399~~	~~770 ppmdv or 10 g/bhp-hr. NOx or turbocharger with aftercooler/intercooler or 4-degree injection timingretard~~
~~400 plus~~	~~550 ppmdv or 7.2 g/bhp-hr. NOx or turbocharger with aftercooler/intercooler or 4-degree injection timingretard~~

~~EMISSION LIMITS OR CONTROL TECHNOLOGY REQUIREMENTS FOR EXISTING APPLICABLE SPARK-IGNITION ENGINES > 250 RATED BHP~~

~~TABLE 2~~

~~OXIDES OF NITROGEN (NO_X)~~	~~VOLATILE ORGANIC COMPOUND(VOC)~~	~~CARBON MONOXIDE (CO)~~
~~280 ppmdv or 4.0 b/bhp-hr or three-way catalyst*~~	~~800 ppmdv or 5.0 g/bhp-hr or three-way catalyst*~~	~~4,500 ppmdv or three-way catalyst*~~

~~EMISSION LIMITS FOR NEW SPARK OR COMPRESSION-IGNITION ENGINES > 250 BHP~~

~~TABLE 3~~

~~ENGINE TYPE~~	~~NOx~~	~~PM*~~	~~CO~~
~~LEAN BURN (SPARK)~~	~~110 ppmdv or 1.5g/bhp-hr.~~	~~Not Applicable~~	~~4,500 ppmdv~~
~~RICH BURN (SPARK)~~	~~20 ppmdv or 0.30g/bhp-hr.~~	~~Not Applicable~~	~~4,500 ppmdv~~
~~COMPRESSION~~	~~530 ppmdv or 6.9g/bhp-hr.~~	~~0.40g/bhp-hr~~	~~1,000 ppmdv~~

~~* A backhalf analysis shall be performed using reference Method 202 (referenced in subsection 504.6) each time a compliance test for particulate matter emissions to meet the limitations listed in Table 3 is performed using Method 5. The results of the Method 202 testing shall be used for emissions inventory purposes.~~

304.2 **Federal Standards of Performance for Non-Emergency Engines:** An owner or operator of an engine listed in Sections 304.2(a) or (b) of this rule shall comply with the federal standards of performance for compression-ignition engines set forth in 40 CFR Part 60, Subpart IIII or spark-ignition engines set forth in 40 CFR Part 60, Subpart JJJJ and in all accompanying appendices as incorporated by reference in Rule 360 (New Source Performance Standards) of these rules. Whenever more than one provision in this rule applies to such engine or whenever a provision in this rule and a provision in the federal standards apply to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

a. 40 CFR Part 60, Subpart IIII applies to all of the following non-emergency compression-ignitionengines:

(1) Any stationary compression-ignition IC engine that was ordered after July 11, 2005 and manufactured after April 1, 2006.

(2) Any stationary compression-ignition IC engine that was modified or reconstructed after July 11, 2005.

b. 40 CFR Part 60, Subpart JJJJ applies to the following non-emergency spark-ignition engine:

(1) Any stationary spark-ignition engine that was ordered after June 12, 2006 and manufactured on or after:

(a) July 1, 2007 for engines with a rated bhp greater than or equal to 500 (except lean burn engines with a rated bhp greater than or equal to 500 and less than 1,350)

(b) January 1, 2008 for lean burn engines with a rated bhp greater than or equal to 500 and less than 1,350

(c) July 1, 2008 for engines with a rated bhp less than 500.

(2) Any stationary spark-ignition engine that was modified or reconstructed after June 12, 2006.

305 **EFFICIENCY ALLOWANCE:** Each emission limit expressed in Tables ~~1, 2 or 3~~ 1 or 2 of this rule may be multiplied by X, where X equals the engine efficiency (E) divided by a reference efficiency of 30 percent. Engine efficiency shall be determined by one of the following methods whichever is higher:

a. E = (Engine Output) X (100) ÷ (Energy Input) where Energy Input is determined by a fuel measuring device accurate to +/- 5 % and is based upon the higher heating value (HHV) of the fuel. Percent efficiency (E) shall be averaged over 15 consecutive minutes and measured at peak load for the applicable engine.

b. E = (Manufacturers Rated Efficiency [Continuous] at (LHV) X (LHV) ÷ (HHV) where LHV = the lower heating value of the fuel Engine efficiency (E) shall not be less than 30 percent; an engine with an efficiency lower than 30 percent shall be assigned an efficiency of 30 percent for the purposes of this rule.

306 **EQUIVALENT REPLACEMENT ENGINE OR IDENTICAL REPLACEMENT ENGINE** ~~REPLACEMENT~~**:** ~~An equivalent or identical replacement engine that replaces an existing engine shall be treated as an existing engine for the purposes of compliance with this rule, unless the engine commenced operation or was constructed or modified after October 22, 2003, including the contractual obligation to undertake and complete an order for an engine, and then it will be considered a new engine for purposes of meeting the standards for a new engine in this rule.~~ An equivalent replacement engine or an identical replacement engine shall be treated as the original stationary RICE that it replaces for the purposes of compliance with this rule.

307 **MODIFICATION TO A STATIONARY RICE:** If a modification, including the contractual obligation to undertake and complete an order for an engine, is made to a stationary RICE, then such engine shall comply with all applicable provisions of this rule. The date of the modification shall be the trigger for when the modification is subject to the provisions of Section 304 of this rule. Whenever a provision in this rule and a provision in Section 304 of this rule apply to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

308 **NON-RESETTING TOTALIZING HOUR METER:** The owner or operator of a stationary RICE, subject to any provision of this rule, except for those engines being removed from service under Section 401 of this rule, shall install, operate, and maintain a non-resetting totalizing hour meter. If the non-resetting totalizing hour meter is found to be malfunctioning,

operation of the engine shall cease until corrective action(s) can be implemented or the function of the meter is restored.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE-STATIONARY RICE BEING REMOVED FROM SERVICE: ~~An owner or operator of an existing a stationary IC engine that must be replaced with a new engine to meet emission limits listed in Section 300 shall be in compliance with the emission limits listed in Section 304, Table 3 by October 22, 2007.~~ 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 November 2, 2017. The stationary RICE that replaces such engine shall comply with all applicable provisions of this rule and shall comply with Section 304 of this rule upon installation.

402 COMPLIANCE SCHEDULE-NON-RESETTING TOTALIZING HOUR METER: The owner or operator of a stationary RICE, subject to any provision of this rule, except for those engines being removed from service under Section 401 of this rule, shall install, operate, and maintain a non-resetting totalizing hour meter on each such engine no later than November 2, 2017.

SECTION 500 - MONITORING AND RECORDS

501 COMPLIANCE DETERMINATION:

~~Existing Engines: Existing IC engines or engine families shall demonstrate compliance with Section 300 by recordkeeping according to Section 502. Emission testing using the applicable test methods listed in Section 500 shall be performed if the Control Officer requests.~~

~~Existing Engine Families at a Source: When testing an engine family at one source, the number of engines tested should be the greater of either one engine or one third of all identical engines in the group. If any of the representative engines exceed the emission limits, each engine in the group shall demonstrate compliance by emissions testing.~~

~~New Engines / New Engine Families: Compliance with the limitations listed in Section 304, Table 3 shall be demonstrated by either:~~

- ~~a. A statement from the manufacturer that the engine meets the most stringent emissions standards found in 40 CFR Part 89 or 90 applicable to the engine and its model year at the time of manufacture, or~~
- ~~b. Performance of emission testing using the test methods listed in Section 503.~~

501.1 **Stationary RICE:** An owner or operator of a stationary RICE shall demonstrate compliance with all of the following, as applicable:

- a. With Section 300 of this rule, by recordkeeping according to Section 502 of this rule. Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.
- b. With Section 304.2 of this rule, by one of the following:
  - (1) A statement from the manufacturer that the engine meets the most stringent emissions standards found in this rule or 40 CFR Parts 89, 90, and 1039 applicable to the engine and its model year at the time of manufacture.
  - **(2)** Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.
- c. With 40 CFR Part 60.4213, for a stationary RICE with a displacement of greater than or equal to 30 liters per cylinder.

501.2 **Engine Family:** An owner or operator of an engine family shall demonstrate compliance with all of the following, as applicable:

- a. With Section 300 of this rule, by recordkeeping according to Section 502 of this rule. Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.
- b. When testing an engine family at one source, the number of engines tested should be the greater of either one engine or one third of all identical engines in the group. If any of the representative engines exceed the emission limits, each engine in the group shall demonstrate compliance by emissions testing.
- c. With Section 304.2 of this rule, by one of the following:
  - (1) A statement from the manufacturer that the engine meets the most stringent emissions standards found in this rule or 40 CFR Parts 89,

90, and 1039 applicable to the engine and its model year at the time of manufacture.

(2) Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.

d. With 40 CFR Part 60.4213, for an engine family with a displacement of greater than or equal to 30 liters per cylinder.

501.3 ~~Low Sulfur Oil~~ **Ultra Low Sulfur Diesel Verification:** ~~If the Control Officer requests proof of the sulfur content, the owner or operator shall submit fuel receipts, contract specifications, pipeline meter tickets, Material Safety Data Sheets (MSDS), fuel supplier information or purchase records, if applicable, from the fuel supplier, indicating the sulfur content of the fuel oil. In lieu of these, testing of the fuel oil for sulfur content to meet the 0.05% limit shall be permitted if so desired by the owner or operator for evidence of compliance.~~ 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:

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

The items listed above must provide accurate sulfur content values or be based on enforceable test methods as approved by the Administrator to determine the sulfur content.

501.4 **Waste Derived Fuel Gas - Sulfur Verification:** The owner or operator shall submit documentation of the concentration of the sulfur level 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 307-94 Determination of Sulfur in a Gaseous Matrix.

501.5 **Test Method Conditions:** The owner or operator shall use the test methods listed in Section 503 of this rule to determine compliance with the limitations listed in ~~Section 304,~~ Tables ~~1-3~~ 1 or 2 of this rule. Testing for ~~stationary IC engines~~ stationary RICE shall be completed under steady state conditions at either the maximum operating load or no less than 80% of the rated ~~brake horsepower rating~~ 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 ~~brake horsepower rating~~ rated bhp or under the typical duty cycle or typical operational mode of the engine.

502 **RECORDKEEPING / RECORDS RETENTION:** The owner or operator of ~~any stationary IC engine~~ a stationary RICE subject to this rule shall comply with the following requirements and ~~keep~~ retain records for ~~a period of~~ at least 5 years:

Records Required for a Stationary RICE: An owner or operator of ~~any IC engine~~ a stationary RICE, including emergency engines, ~~prime engines~~ non-emergency engines and ~~low usage engines~~ low usage non-emergency engines, shall keep a record that includes an initial one time entry that lists the particular engine combustion type (compression-ignition or spark-ignition or rich burn, ~~or~~ lean burn); manufacturer; model designation, rated ~~brake horsepower~~ bhp, serial number and where the engine is located on the site.

Monthly Records Required for Non-Emergency Engines: An owner or operator of a ~~prime engine~~ non-emergency engine shall maintain a monthly record for ~~prime engines~~ non-emergency engines which shall include:

a. Hours of operation; and
b. Type of fuel used, and
c. Documentation verifying compliance with sulfur fuel content according to ~~subsection~~ Section 301.1 of this rule.

Annual Records Required for Non-Emergency Engines: An owner or operator of a ~~prime engine~~ non-emergency engine shall maintain an annual record of ~~good combustion procedures according to Section 302.~~ the practices/procedure that are followed in order to comply with Section 302 (Good Combustion Practices/Tuning Procedure for Stationary RICE) of this rule.

Records Required for an Emergency Engine or a Low Usage Non-Emergency Engine: An owner or operator of an emergency engine ~~and~~ or a low usage non- emergency~~, low usage~~ engine that meets the exemptions listed in Sections 104 and 105 of this rule shall keep an engine record that includes:

a. Monthly rolling twelve month total of hours of operation, including hours of operation for testing, reliability and maintenance; and

b. Fuel type and sulfur content of fuel; and

c. Explanation for the use of the engine if it is used as an emergency engine.

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 ~~The Environmental Protection Agency (EPA) test methods as they exist in the Code of Federal Regulations (CFR) (July 1, 2004) and the American Society of Testing Materials International Methods as listed below,~~ are incorporated by reference in Appendix G of the ~~Maricopa County Rules and Regulations~~ Maricopa County Air Pollution Control Regulations. ~~The When more than one test method is permitted for the same determination, as listed in subsections 503.12, 503.13, 503.14, or 503.15, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation.~~ 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 ~~of this rule~~ are available at the Maricopa County ~~Environmental Services Department~~ Air Quality Department, 1001 North Central Avenue, Suite ~~201~~ 125, Phoenix, Arizona, 85004-1942.

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).

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).

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 of Excess Air"), and 3C ("Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources") (40 CFR 60, Appendix A).

EPA Reference Method 4 ("Determination of Moisture Content in Stack Gases") (40 CFR 60, Appendix A).

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

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

EPA Reference Methods 7 ("Determination of Nitrogen Oxide Emissions from Stationary Sources"), 7A ("Determination of Nitrogen Oxide Emissions form Stationary Sources - Ion chromatographic method"), 7B ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Ultraviolet Spectrometry"), 7C ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline- Permanganate 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 Method"), (40 CFR 60, Appendix A).

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

EPA Reference Method 10 ("Determination of Carbon Monoxide from Stationary Sources") (40 CFR 60, Appendix A).

EPA Reference Method 18 ("Measurement of Gaseous Organic Compound Emissions by Gas Chromatography") (40 CFR 60, Appendix A).

EPA Reference Method 25A ("Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer") (40 CFR 60, Appendix A).

~~503.12~~ ~~American Society of Testing Materials International, ASTM Method D1266-98 ("Standard Test Method for Sulfur in Petroleum Products(Lamp Method)") , 1998.~~

~~503.13~~ **503.12** ~~American Societyof Testing MaterialsInternational,~~ ASTM ~~Method~~ D2622-98 ~~("~~Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-RayFluorescenceSpectrometr y~~"),1998.~~

~~503.14~~ **503.13** ~~American Societyof Testing MaterialsInternational,~~ ASTM ~~Method D2880-71~~ D2880-96~~, 78 or 96 ("~~Standard Specification for Gas Turbine Fuel Oils~~"), 1971 or 1978 or 1996.~~

~~503.15~~ **503.14** ~~American Societyof Testing MaterialsInternational,~~ ASTM ~~Method D4294-98~~ D4294-02 or D4294-03 ~~("~~Standard Test Method for Sulfur in Petroleum Products by Energy-DispersiveX-Ray Fluoresence Spectroscopy~~")1990 or 1998.~~

~~503.16~~ **503.15** ~~American Societyof Testing MaterialsInternational,~~ ASTM ~~Method~~ D5504-01 or D5504-08 ~~("~~Standard Test Method for Determination of Sulfur Compoundsin Natural Gas and GaseousFuels byGasChromatograph y and Chemiluminescence~~), 2006.~~

504.16 South Coast Air QualityManagemen t District Method 307-94 Determination of Sulfur in a Gaseous Matrix

NOTICE OF FINAL RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 336: SURFACE COATING OPERATIONS
PREAMBLE

1. **Rule affected** — **Rulemaking action**
   Rule 336: Surface Coating Operations — Amended
2. **Statutory authority for the rulemaking:**
   Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
   Implementing statute: A.R.S. § 49-112
3. **The effective date of the rule:**
   Date of adoption: November 2, 2016
4. **List of public notices addressing this rulemaking:**
   Notice of Briefing to Maricopa County Manager: May 2015
   Notice of Stakeholder Workshops: June 29, 2015, September 3, 2015, December 17, 2015, and February 18, 2016
   Notice of Maricopa County Board of Health Meeting: April 25, 2016
   Notice of Proposed Rulemaking: 22 A.A.R. 1159, May 13, 2016
5. **The name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name:	Kathleen Sommer or Hether Krause
Address:	Planning and Analysis Division Maricopa County Air Quality Department 1001 N. Central Ave., Suite 595 Phoenix, AZ 85004
Telephone:	(602) 506-6010
Fax:	(602) 506-6179
E-mail:	aqplanning@mail.maricopa.gov

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

Summary:

Maricopa County Air Quality Department (department) amended Rule 336 (Surface Coating Operations) that regulates volatile organic compound (VOC) emissions from surface coating facilities that are not regulated by another source-specific Maricopa County rule. The Clean Air Act (CAA) requires that the U.S. Environmental Protection Agency (EPA) and the states control VOC emissions because VOCs react in the presence of sunlight to form ground-level ozone, a major component of "smog" which is hazardous to human health and the environment. Ozone is largely created by a photochemical reaction between nitrogen oxides (NO_X) and VOCs in the presence of sunlight. NO_X and VOCs called ozone precursors create ground-level ozone in urban areas because ozone precursors are emitted from vehicle exhausts, fuel combustion, and VOC coatings used for various surface coating operations such as those regulated in Rule 336. This is the first revision of Rule 336 since April, 7 1999.

The Phoenix area, determined by violations of the National Ambient Air Quality Standards (NAAQS), has been reclassified from "marginal" to "moderate" nonattainment for the 2008 eight-

hour ozone NAAQS. The department updated Rule 336 to address the CAA requirements of the State Implementation Plan (SIP) in response to this higher nonattainment classification. The CAA section 172(c)(1) requires nonattainment areas, such as Phoenix, to use "reasonably available control measures" (RACM) including "reasonably available control technology" (RACT) to control VOC emissions. Section 182(b)(2)(A) of the Act provides that the EPA define RACT for VOCs in EPA Control Technique Guidelines (CTGs). The CTGs provide State and local air pollution control authorities information that assists in determining VOC-RACT for air quality rules. Rule 336 has been updated to these CTG-RACT requirements.

The EPA defines RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." To attain the required RACT, Maricopa County revised Rule 336 to incorporate five (5) CTGs issued by the EPA in 2006 through 2008. The CTGs address the following topics:

- Metal Furniture Coatings
- Large Appliance Coatings
- Miscellaneous Metal and Plastic Parts
- Paper, Film, and Foil Coatings
- Industrial Cleaning Solvents

Rule 336 incorporated the RACT recommendations from these five CTGs. Rule 336 included CTG recommendations for additional types of VOC coating limits, transfer efficiency for spray equipment to be comparable to the transfer efficiency found in a High Pressure, Low-Volume (HVLP) spray guns, and additional work practices to reduce VOC emissions.

In addition, Rule 336 corrected typographical or other clerical errors; made minor grammatical changes to improve readability or clarity; modified the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or made various other minor changes of a purely editorial nature. As these changes do not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 17 of this notice.

Background:

The department held four workshops for this rulemaking. Each of the four workshops contributed to this proposed draft Rule 336; the progression of which is described as follows:

Workshop#1: Monday June 29, 2015

This workshop introduced the proposal to revise Rule 336 and to include sections in the revised rule that address three additional VOC categories:

- Pleasure Craft Manufacturing and Repair
- Adhesives and Adhesive Primers
- Polyester Resin Operations

These VOC source categories have been controlled to date, with the general terms of Rule 330 (Volatile Organic Compounds) which has not been updated since 1996. Rule 330 (Volatile Organic compounds) is a generic VOC Rule which regulates a variety of source-specific facilities in addition to these source categories.

Workshop #2: Thursday September 3, 2015

Stakeholders (surface coating manufacturers and supplier representatives) expressed concern about combining the variety of VOC regulations into one rule. This workshop focused on whether it was feasible to put all four of the VOC source categories into one rule. Stakeholders unanimously recommended dividing the VOC regulated sources into separate rules.

Workshop #3: Thursday December 17, 2015

Three separate rules were proposed at this workshop in response to stakeholder requests:

- Rule 336: Miscellaneous Surface Coating Operations (included Pleasure Craft Surface Coating Operations)
- New Rule 357: Miscellaneous Industrial Adhesives
- New Rule 356: Polyester Resin Operations.

Pleasure Craft Surface Coating Operations were included in the revision of the existing Rule 336; this left the introduction of two new VOC source specific rules - Rule 356 and Rule 357.

Workshop #4: Thursday February 18, 2016

Revised Rule 336 was presented. Pleasure Craft Manufacturing and Repair coatings were added as a section in the proposed amended Rule 336 and the two remaining "new" VOC rules were put on-hold. The department determined that negative declarations will be submitted for the two CTG source categories, adhesives and adhesive primers and polyester resin operations.

Issues Raised and Discussed During this Rulemaking Process:

Label Containers that Contain VOC: Work Practices, Section 304 requires "Containers in which VOC-containing materials are stored must have a legible label identifying the container's contents". In a previous posted draft of Rule 336, specific text for labels was required to comply with this section. The Resource Conservation and Recovery Act (RCRA) requires specific text to comply with labeling for hazardous wastes. The goal of the Rule 336 labeling requirement is to identify containers that contain VOC. The specific RCRA labeling text will satisfy this goal, so owners or operators do not have to prepare two different labels for VOC containing containers.
Quality Class Q Protective Coating: A stakeholder commented that the Quality Class Q protective coating used on equipment or components within a containment facility of a nuclear power plant was not current. This requirement referenced in Sections 103.5(d) and defined in Section 200.74 only specifies that this category of coating is required for this purpose and does not require which method is most current for compliance.
Changes Proposed in the Surface Coating Limits for Rule 336: Rule 336 increased the variety of VOC coating categories listed in the rule as was recommended in the CTG for surface coating operations. Rule 336 also added the specific definitions for these new coating categories. Even with the addition of a greater variety of coating categories, the VOC thresholds for the coatings found in Rule 336 remained the same and were not lowered.
Limit Usage of Noncompliant VOC Surface Coatings: Several Stakeholders asked to clarify Exemption Section 103.5(b) which addresses use of VOC coatings that exceed the VOC coating thresholds required in the Rule 336 Tables. Clarifying text was added to this exemption that states: "Low usage of VOC coatings which exceed VOC thresholds for coating categories listed in Tables 336-1 through 336-7 of this rule". The noncompliant coatings are permitted for use if the annual aggregate usage does not exceed 55 gallons per year (208 liters/yr.) at a facility. The operator shall update usage records of these coatings at the end of each month, pursuant to Section 501.2 of this rule.
Small Surface Coating Source (SSCS) Exemption: Stakeholders requested that the SSCS exemption be retained. The SSCS exemption has been retained in Section 103.5(c) and is defined in Section 200.77. SSCS was modified to exclude the daily limit requirement and retained the option that a facility that exceeds a 2 ton VOC/year emission limit for processes regulated by this rule may retain the exemption, if the owner or operator agrees in writing to enforceable permit conditions that establishes these or stricter limits.
Clarification of Limits for Touch-Up and Repair Operations: Stakeholders asked for clarification: Touch-up and Repair coatings are exempt (Section 103.3) and Touch-up and Repair coating VOC thresholds are found in Rule 336: Table-1 and Table -4. These are not conflicting requirements because it depends on the substrate if touch up or repair coatings are exempt or have VOC threshold limits. "Touch-up and repair coatings" for Plastic Parts Coatings are exempt from the VOC limits. This exemption is described on page 31 of the CTG (Miscellaneous Metal and Plastic Parts Coatings: September 2008). The "Touch-up and Repair" coating thresholds listed in Table 336-1 are coating limits for Metal Parts and Product Coatings and are partially exempt. "Metal part touch-up and repair coatings" are only exempt from the application methods (Rule 336: Section 302) but are subject to the remaining provisions of this rule. The "Touch-up and Repair" coating thresholds listed in Table 336-4 are coating limits for Business Machine Coatings and are not exempt.

Demonstration of an HVLP Spray Gun Equivalent or Alternative Application Methods: In workshop discussions Stakeholders asked to clarify compliance determination for the "alternative application method" spray guns. This provision saves Stakeholders time, because it eliminates the requirements of getting approvals from the Control Officer for use of new spray-gun technologies. Section 302.1(e) states that an EPA recommendation is sufficient for the approval process of the proposed application method:
Section 302.1(e): An Alternative Application Method: Any method approved by the Administrator of the EPA as HVLP-equivalent.

This requirement was changed since the last posting of the Notice of Proposed Rulemaking for Rule 336 on May 13, 2016.
Three Pleasure Craft Surface Coating Limits: Stakeholders commented that three pleasure craft VOC surface coating limits: Extreme High Gloss Coatings; Finish Primer/Surfacer; and Other Substrate Anti-foulant Coating should be higher than the limits proposed in the CTG (Miscellaneous Metal and Plastic Parts Coatings, September, 2008). Stakeholders have challenged these CTG recommended limits to EPA in 2010. The EPA responded in a June 1, 2010 decision that clarified these suggested pleasure craft VOC surface coating thresholds were RACT recommendations provided in the CTG and should be "used by the states to determine what constitutes RACT for VOC operations in their particular ozone nonattainment areas." The

department reviewed both the Stakeholder recommendation and the EPA's decision and included in Rule 336, Table 336-7 the following VOC limits:

Extreme High Gloss Topcoat	600 g VOC/l;
Finish Primer Surfacer;	600 g VOC/l;
Other Substrate Anti-Foulant Coating	400 g VOC/l.

The department reviewed Stakeholder recommendations and determined these limits constitute RACT for VOC operations in the Phoenix ozone nonattainment area.

Industrial Cleaning Solvent CTG –VOC Limit for Solvent Cleaners is 0.21 lbs. per gallon**:** Stakeholders requested clarification of why solvent cleaner VOC limits are not listed in Section 303.2 (c) where VOC solvent cleaners are referenced. The VOC threshold limit for solvent cleaners was deleted and replaced with the requirement in Section 305.6: "VOC solvents can be used for cleaning coating application equipment only if spray devices are not used and the same principal solvent is used for cleaning as is used in the coating".

Rule 336 does not provide a VOC solvent cleaning limit because surface coating cleaners have their own properties with traditionally low VOCs. The cleaning chemicals used in surface coating cleaning operations contain little VOC and therefore generate negligible emissions, as described on page 8 of the CTG for Miscellaneous Metal and Plastic Parts Coatings (September 2008).

Recordkeeping Requirements for an Aerosol Spray Can Exemption: Stakeholder requested adding Section 501.2(e) to clarify recordkeeping requirements for aerosol spray cans coatings. These requirements include maintaining purchase records for aerosol spray-cans, including VOC content of can contents.

Exemption of Aerosol Spray Can Coating Application and Total Facility VOC Threshold Limits: Stakeholders asked for clarification of how the exemption of the aerosol spray can applications of VOC materials contribute to the overall facility VOC usage. Section 103.5(a) (Aerosol Spray Can Coating Exemption) applies to any use of non-refillable containers that are less than 22 fluid ounces (0.66 liter) capacity and the VOC usage of this exemption contributes to the 2 tons/yr facility threshold of this rule as these aerosol spray can applications are insignificant activities. Rule 200 (of these rules) states: Emissions at or below 2 tons/yr qualifies as an insignificant activity (Rule 200, Section 200.63). Aerosol spray cans do not qualify as a "trivial activity" as aerosol spray can coating is "conducted as part of a source's primary business activity" qualifying it as an insignificant activity (Rule 200, Section 200.127). Permits address multiple insignificant activities and their cumulated contribution to a facility's overall coating limits.

VOC Coating Category - "Other Metal Parts and Products": Stakeholders expressed concern about two VOC coating thresholds recommended in the CTG for Miscellaneous Metal and Plastic Parts Coatings; "One-Component" and "Multi-component" coatings. These two VOC coatings were listed in three of the Tables in Rule 336: Table 336-1(Metal Part and Products), Table 336-3 (Plastic Parts and Products), and Table 336-4 (Metal Furniture and Large Appliance Coatings). Stakeholders stated that the "One-Component" and "Multi-component" coatings are general use coatings that are currently regulated in the "Other Metal Parts and Products Coating" category. During workshop discussions, Stakeholders recommended retaining this general coating category rather than replacing it with two new coating categories. Stakeholders recommended keeping the current general coating - "Other Metal Parts and Products Coating"; this coating category is a VOC coating category for miscellaneous non-source specific surface coatings that is used in as much as 40% of the coatings at Stakeholder operations and includes these two "new" recommended coatings.

Based on this information the department has omitted the "One-Component" and "Multi-component" coating" category in two of the three Rule 336 tables. The two CTG proposed coatings are redundant with "Other Metal Parts and Products Coating" and will be regulated within this existing coating category. "Other Metal Parts and Products Coatings" represent miscellaneous coatings that do not belong to a source specific coating category. The "Other Metal Parts and Products Coating" category has been retained in Tables 336 -1 and 336-3 and the CTG suggested coating categories removed. These two CTG suggested coating categories were retained and still apply in Rule 336, Table 336-4 (Metal Furniture and Large appliance Coatings). The definitions of the two CTG suggested coating categories are: "One-Component" is ready to apply straight from the container and "Multi-component" is a coating that needs a catalyst or hardener.

O & M Plan and the Spray Gun Cleaning Machine: Stakeholders asked if an O&M plan is required for a spray gun cleaning machine; t is not required and this requirement has been deleted from an earlier version of the proposed rule (previously Section 303.1(g)).

Allow Use of Usage Records for Compliant Recordkeeping: Stakeholders requested that usage records of VOC materials be a compliant source for recordkeeping requirements. Rule 336,

Section 501.1(b) was changed to Section 501.1(c) and allows either usage records or the traditional purchase records. This change in recordkeeping requirments provides less stringent recordkeeping by omitting the requirement for daily recordkeeping for all owners or operators, who use VOC coatings and VOC solvent cleaners, not just for "consistently low users" and allows for usage records to comprise compliant recordkeeping in addition to purchase records.

Increase Overall Emission Control System (ECS) Efficiency from 85% to 90%: The CTG Miscellaneous Metal and Plastic Parts Coatings (September 2008) recommends the increase the overall ECS control efficiency to capture at least 90% from the current 85% (Rule 336 Section 305.1(a)).

Deletion of the Military Exemption: Rule 336 contained a military exemption in Section 305.4(f); this exemption was placed in the rule for one particular source when the rule was drafted in 1999. The CTGs do not recommend a military exemption. The department researched these types of coatings and found that since 1999 there are new, compliant, low VOC coatings that may function well as a substitute coating. If a source uses a non-compliant coating, the burden of proof is on the source to demonstrate that there are no other compliant coatings that can be used to achieve the desirable effect of the non-compliant coating.

Description of Amendments: Amendments in Rule 336 are as follows:

- Deleted definitions that are already defined in Rule 100
- Deleted definitions that are not found in the text of the rule
- Added definitions of different types of coatings listed in the CTGs and terms listed in the rule
- Moved the exemptions from Section 300 to Section 100
- Incorporated the overall ECS control efficiency recommended in the CTG of 90%
- Defined compliance for alternative application methods
- Deleted the vapor pressure requirement for VOC-containing cleaning materials
- Added new work practices that are listed in the CTG
- Clarified existing work practices in Section 300, such as labeling and transferring in and out of containers
- Updated the Operations & Maintenance (O and M) language in Section 305
- Updated the compliance schedule in Section 400
- Streamlined the recordkeeping provisions in Section 500
- Updated the test methods listed in Section 500
- Corrected typographical or other clerical errors.

Deleted definitions that are already defined in Rule 100: Several definitions were deleted in Rule 336, because they are contained in Rule 100; these include definitions for organic compounds (Section 229), VOC- borne coatings (Section 252), and VOC borne diluents.

Deleted definitions that are not found in the text of the rule: Definition for Heat Sensitive Material (Section 220); Polyester and Polyester Resin (Section 234) and Polyester Composite (Section 235) are also deleted, because they no longer appear in proposed Rule 336.

Added definitions of different types of coatings listed in the CTGs and terms used in the rule: There are a total of 54 new definitions in Rule 336, Section 200. Most of these definitions reflect the addition of new specialty coating limits in the four CTGs such as: Adhesion Primer (Section 200.2); Antifoulant Coating (Section 200.6); Business Machine (Section 200.8) Camouflage Coating (Section 200.9); Can Coating (Section 200.10) Etching filler (Section 200.24); Extreme High-Gloss Coating (Section 200.27); Finish Primer/Surfacer (Section 200.33); Heat Resistant Coating (Section 200.39); High Performance Architectural Coating (Section 200.40); High Build Primer/Surfacer (Section 200.41); High gloss Coating (Section 200.42); High Temperature Coating (Section 200.43); Mold -Seal Coating (Section 200.56); Multi-colored Coating (Section 200.57); Multi-component Coating (Section 200.58); Non-Precursor Organic Compounds (Section 200.59); One-component Coating (Section 200.60); Optical Coating (Section 200.61); Pan Backing Coating (Section 200.64); Pleasure Craft Coating (Section 200.68); Prefabricated Architectural Component Coating (Section 200.69); Pretreatment Coating (Section 200.71); Pretreatment Wash Primer (Section 200.72); Shock-Free Coating (Section 200.77); Solar-Absorbent Coating (Section 200.80); Stencil Coating (Section 200.81); Texture Coating (Section 200.82); Vacuum Metalizing Coating (Section 200.90).

Other new definitions found in the rule include: Aerosol Can Spray Coating (Section 200.3); Alternative Application Methods (Section 200.5); Coating Application Equipment (Section 200.13); Dip Coating (Section 200.16); Drum coating (Section 200.17): Electric Dissipating coating (Section 200.18); Electric Insulating Varnish (Section 200.19) Electromagnetic Interference (EMI)/Radio Frequency Interference (RFI) Shielding (Section 200.20); Exempt Organic compounds (Section 200.25); Filler (Section 200.31); Flow Coat (Section 200.35); Fog Coat (Section 200.36); Gloss Reducer Section 200.37); Hand application Methods (Section

200.38); High-Volume, Low Pressure (HVLP) Spray-Gun (Section 200.44): In-Use or Handled (Section 200.48); Large Appliance (Section 200.49); Marine Vessel (Section 200.51); Military Specification Coating (Section 200.54); Non-Precursor Organic Compounds(Section 200.58); Pleasure Craft (Section 200.65); Pressure Sensitive Tape or Label(Section 200.68); Transfer Efficiency (section 200.86); VOC Regulatory (Section 200.91)

Moved the exemptions from Section 300 to Section 100: The exemptions in Rule 336, Section 300 were moved to Section 100. Other amendments moved to Section 100 (Section 103.3(b)(j) and 103.5) are the inclusion of a partial exemptions for stencil coatings. The stencil coating operations meet the definition of a surface coating operation and are not considered a graphic arts operation. North American Industry Classification System (NAICS) instead of Standard Industrial Classification (SIC) are in Section 103.2(b).

Amended the VOC emission limitations to be consistent with the CTGs: Deleted Table 1 and replaced it with Tables 336-1 through 336-7.

Incorporated the overall ECS control efficiency recommended in the CTG of 90%: New text was added in Section 302.5 requiring an ECS, if an owner or operator is using non-compliant coatings. Changed the control efficiency from 85% to 90% in Sectin 305.1(b).

Clarified Alternative Application Method Compliance: Any method approved by the Administrator as HVLP-equivalent is compliant as an application method.

Deleted the VOC Vapor pressure requirement for VOC-solvent cleaners: Rule 336 permitted the use of VOC-solvent cleaners with less than 35 mm Hg vapor pressure. A South Coast Air Quality Management District Study (April 10, 2002) confirms that vapor pressure does not influence VOC mass emissions and does not result in further reduction of VOC emissions. This is an obsolete requirement and was deleted as it falsely misleads that low vapor pressure solvents are a form of emissions control.

Added new work practices that are listed in the CTGs: Section 304 added new text on cleaning up spills, added new text on conveyance of VOC-containing material, and added new text requiring labeling VOC-containing containers. Sections 304.2 and Section 304.3 were clarified. Section 304.5 clarified the labeling of containers.

Updated the O & M Plan language in Section 305: Section 305.2 added new text regarding O & M Plans.

Updated the compliance schedule in Section 400:

- Sections 401 and 401.2 deleted outdated compliance dates.
- Sections 401.1 and 401.2 added text that requires the use of the new VOC emission limits for coatings six months after the date of adoption of the rule and added text that requires the use of the new type of spray gun for coating no later than six months after the date of adoption of the rule.
- Section 402.1 added text that requires dates for compliance with the installation of the ECS and with the O&M Plan requirements no later than 3 months after the rule is adopted.

Streamlined the recordkeeping provisions in Section 500:

- Section 501 added text to expand the type of documents that will comply with recordkeeping requirements and allow submittal of records in electronic or paper format.
- Sections 501 required less stringent recordingkeeping for all users, not just low VOC coatings users. The requirement for daily records was eliminated for all users.

Updated the test methods listed in Section 500: Sections 503 updated the dates and sections of the California rules herein listed.

7. **Demonstration of compliance with A.R.S. § 49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.

2. There is credible evidence that the rule, ordinance or other regulation is either;

(a) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.

(b) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.

3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. The County failed to meet 2008 8-hour ozone standard by the marginal area attainment date of July 20, 2015. The EPA issued a final rule, effective June 3, 2016, reclassifying the Maricopa County area to "moderate" (published at 86 FR 26697, May 4, 2016). Further, a portion of the County was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the county to continue to maintain the measures and requirements that allowed the county to attain that standard. Revisions to Rule 336 addressed the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The amendments in Rule 3336 included Reasonably Available Control Technology (RACT).

The department complies with A.R.S. § 49-112(B) in that the amendments to Rule 336 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any Board or commission authorized to adopt rules pursuant to Title 49, address the peculiar local conditions in Maricopa County, are authorized under A.R.S. Title 49, Chapter 3, Article 3, and are not in lieu of a state program.

8. **Documents or studies referenced and/or reviewed for this rulemaking:**

South Coast Air Quality Management District (SCAQMD) -Technology Assessment to Determine the Relationship of Solvent Vapor Pressure and VOC Mass Emissions: Philip O'Bell, Chung Liu, Henry Hogo; April 10, 2002

U. S. Environmental Protection Agency, "Control Techniques Guidelines for Large Appliance Coatings," September, 2007, www.epa.gov/ttn/oarpg/t1/ctg/20070928_large_app_ctg.pdf.

U. S. Environmental Protection Agency, "Control Techniques Guidelines for Metal Furniture Coating," July, 2007, www.epa.gov/ttn/oarpg/t1/ctg/ctg_furniture_ctg062807.pdf.

U. S. Environmental Protection Agency, "Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings,"
September,2008, www.epa.gov/ttn/oarpg/t1/ctg/miscmetal_ctg093008.pdf.

U. S. Environmental Protection Agency, "Control Techniques Guidelines for Industrial Cleaning Solvents," September, 2006, www.epa.gov/ttn/oarpg/t1/ctg/indus_clean_solv_09_29_06.pdf.

U. S. Environmental Protection Agency, "Control Techniques Guidelines for Paper, Film and Foil Coatings," September ,2006, www.epa.gov/ttn/oarpg/t1/ctg/20070928_paper_film_ctg.pdf. Notice of Final Rulemaking, Title 18, Chapter 2. Arizona Administrative Register, Volume 14, Issue 9, July 18, 2008 PP. 2834-2842.

US EPA Internal letter, June 1, 2010: To: Chief, Air Branch Regions I- X: From: Stephen D. Page, Director Office of Air Quality Planning and Standards: Control Technique Guidelines for Miscellaneous Metal and Plastic Part Coatings – Industry Request for Reconsideration

9. **A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**

Not applicable.

10. **Summary of the economic, small business, and consumer impact:**

The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

A. **An identification of the rulemaking.**

This rulemaking revised Rule 336 (Surface Coating Operations).

B. **An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking**.

The persons who will be directly affected by and bear the costs of this rulemaking will be facilities in Maricopa County that use VOC coatings listed in Tables 336-1 through 336-7 of the rule that are not more specifically regulated by another source-specific rule within Maricopa County Rules 300 to 359 of Regulation III. Partial exemptions apply to certain coatings, application methods, and for low usage conditions. The department has issued permits to more than 160 facilities that are subject to Rule 336.

C. **Cost benefit analysis:**

(i) **Costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**

Because this rulemaking does not impose any new compliance burdens on permitted regulated entities or introduce additional regulatory requirements, the department deemed that none of the revisions have potentially significant economic impacts on permitted sources. It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

The benefits of the rule revision are anticipated to be a result of the following changes:

- Updated the definitions;
- Amended the VOC emission limits for surface coatings consistent with the CTGs;
- Extended Rule 336 to include the pleasure craft industry;
- Deleted an exemption for the military;
- Incorporated the overall Emission Control System (ECS) control efficiency listed in the CTGs of 90%;
- Incorporated the transfer efficiency listed in the CTGs, which is the same as the transfer efficiency of a HVLP spray gun;
- Deleted the sprayless equipment exemption for vapor pressure limits;
- Added new work practices that are listed in the CTG and clarified existing work practices;
- Updated the Operations & Maintenance (O and M) language;
- Updated the compliance schedule;
- Streamlined the recordkeeping provisions;
- Updated the test methods;
- Corrected typographical or other clerical errors.

The sources subject to revised Rule 336 already have permits in which these requirements are addressed. Therefore, this revised rule does not impose new requirements on the permitted facilities, and no costs would be incurred for compliance with the rule revisions.

(ii) **Costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(iii) **Costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity and compliance options provided by the Rule 336 revisions will provide a benefit to the regulated and permitted sources; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision will not impose increased monetary or regulatory costs on individuals so regulated.

D. **A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.**

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

E. **A statement of the probable impact of the rulemaking on small businesses.**

This rulemaking does not impose any new compliance burdens on regulated entities that are permitted or introduce additional regulatory requirements and will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated.

As such, there are no costs to pass through to consumer, which means there are no impacts on consumers.

An identification of the small businesses subject to the rulemaking.

Small businesses subject to this rulemaking are those facilities in Maricopa County that use VOC coatings listed in Tables 336-1 through 336-7 of the rule that are not more specifically regulated by another source specific rule within Maricopa County Rules 300 to 359 of Regulation III. Of the approximately 150 commercial permitted sources covered by the rule, about 90 are small businesses.

The administrative and other costs required for compliance with the rulemaking.

This rulemaking updated and clarified existing rule provisions and definitions to be consistent with federal performance standards; and reduced confusion and improved understanding and readability. The department considered the implications of the amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

F. **A statement of the probable effect on county revenues.**

The rule revisions will not impose increased monetary or regulatory costs on other county revenues, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on county revenues from sales taxes.

G. **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**

By correcting and clarifying rule provisions and definitions and streamlining recordkeeping provisions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrected or clarified rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iv) **A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.**

This rulemaking corrected or clarified rule provisions and definitions to reduce confusion and improve understanding and readability.

H. **A description of any data on which the rule is based:**

Not-Applicable

I. **If for any reason adequate data are not reasonably available, the agency shall explain the limitations of the data and the methods that were employed in the attempt to obtain the data and shall characterize the probable impacts in qualitative terms:**

Not-applicable

11. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:**

Name:	Kathleen Sommer or Hether Krause
Address:	Planning and Analysis Division Maricopa County Air Quality Department 1001 N. Central Ave., Suite 595 Phoenix, AZ 85004
Telephone:	(602) 506-6010
Fax:	(602) 506-6179
E-mail:	aqplanning@mail.maricopa.gov

12. **Description of the changes between the proposed rule, including supplemental notices and final rule:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R 1159), the department made the following additional amendments:

- Section 103.6 (Partial Exemptions): Moved this section to new Section 302.2 (b) (Application Methods for Surface Coatings)

- Section 244 (Definition of "High-Volume, Low Pressure (HVLP) Spray Gun"): Deleted "and at the air horns" to accurately describe the pressure measurement. Additional options for compliance determination of an HVLP spray gun were added to the definition.
- Section 274 (Definition of "Refrigerated Glass Door Coating"): Added the definition of "Refrigerated Glass Door Coating". The coating category is included in Table 336-5 (Coating Limits for Metal Furniture and Large Appliance). The definition and the coating limits in Table 336-5 are from South Coast Air Quality Management District Rule 1145 (Plastic, Rubber, Leather, and Glass Coatings) amended December 4, 2009.
- Section 275 (Definition of "Restricted Spray Gun"): Deleted the definition of "Restricted Spray Gun"
- Section 281 (Definition of "Strippable Booth Coating"): Retained the definition of "Strippable Booth Coating" and included the coating category in Tables 336-1 through 336-7; the VOC limit was not changed
- Table 336-1 (Coating Limits for Metal Parts and Products): Added multi-component and one-component VOC limits to match the CTG-Miscellaneous Metal and Plastic Parts Coatings
- Table 336-2 (Coating Limits for Can and Coil Coating): Moved fabric coating to Table 336-6 (Coating Limits for Paper, Film, and Foil Surface Coating) and deleted film coating because it was already in Table 336-6
- Table 336-3 (Coating Limits for Plastic Parts and Products): Added categories for flexible and non-flexible plastic parts and products
- Table 336-5 (Coating Limits for Metal Furniture and Large Appliances): Removed large appliances category because it is covered under multi-component and one-component categories
- Table 336-6 (Coating Limits for Paper, Fabric, Film, and Vinyl): Added vinyl
- Table 336-7 (Coating Limits for Pleasure Craft): Did not include the new coating category "antifouling sealer/tie coat", as this relates to the CTG for Shipbuilding and Ship Repair Operations (Surface Coating). The department has determined that there are no emitting facilities in Maricopa County for this CTG source category.
- Table 336-7 (Coating Limits for Pleasure Craft): Removed the transition schedule for the coating limits
- Section 305.1 (Emission Control System (ECS) Requiremens-ECS Control Efficiencies): Clarified the requirements for overall ECS efficiency, capture and control efficiency, and the alternative for very dilute input
- Section 501.2(b) (Recordkeeping and Reporting-Current Lists): Re-inserted SDS or MSDS and included in the introductory statement to Section 501.2(b) the sentence "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."
- Section 501.2(c)(2) (Recordkeeping and Reporting-Current Lists): Deleted recordkeeping requirements for "low VOC coatings" and "low VOC cleaning solvents"
- Section 501.2(e) (Recordkeeping and Reporting-Current Lists): Added usage records as acceptable compliance documents for recordkeeping documentation for aerosol can spray coating
- Section 503 (Compliance Determination and Test Methods): Included text that allows for the use of alternative test methods to determine compliance with the rule and that allows test methods as approved by the Administrator to be used and clarified the provision regarding when more than one test method is permitted for a compliance determination

13. **Summary of the comments made regarding the rule and the department response to them:**
Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R. 1159), the department received comments from the Salt River Project Agricultural Improvement and Power District (SRP) and PING,Inc. The comments and the department's responses are provided below.
Comment #1: Section 304.5 (Work Practices-Handling, Disposal and Storage of VOC-Containing Material) PING, Inc. commented that in the current draft of Rule 336, Section 304.2 states, in part, "The containers shall be clearly marked "Disposal of VOC Material" and remain covered with a leak tight cover, when not in use". Marking of waste containers is both a best practice as well as a regulatory requirement. From a regulatory perspective, waste streams are typically regulated under the Resource Conservation and Recovery Act (RCRA). The workforce is trained to appropriately handle waste materials. Workers would look for the "Hazardous Waste" label to identify the appropriate container to place VOC-containing wastes. The current language in the draft rule requires the "containers shall be clearly marked "Disposal of VOC Material". For those workplaces that are regulated by RCRA, the marking requirement noted in the rule adds complexity, as now containers will need to be double-labeled. It would appear that the intent of the

marking requirement is to make sure that the contents of the container are clearly identified. PING, Inc. proposes the language in the rule be modified to state "The containers shall be clearly marked "Disposal of VOC Material" or as required by other applicable law and remain covered with a leak tight cover, when not in use".

Response #1: Section 304.5 (Work Practices-Handling, Disposal and Storage of VOC-Containing Material)

The language commented on by PING, Inc. was removed from Rule 336 prior to the publication of the Notice of Proposed Rulemaking. In the Notice of Proposed Rulemaking that was published on May 13, 2016 (22 A.A.R. 1159), the department proposed Section 304.5 to read "Containers in which VOC-containing materials are stored must have a legible label identifying the container's contents". The department retained this requirement. The specific RCRA labeling requirement complies with this requirement; double labeling will not be necessary.

Comment #2: Section 501.2(b) (Recordkeeping and Reporting-Current Lists)

SRP commented that: In the proposed revisions to Rule 336, MCAQD is proposing to remove the use of manufacturer's safety data sheets (SDS or MSDS) as a coating's written record of VOC content. The use of an SDS or MSDS is the most common source of VOC content information and removal of this source would cause an undue burden on a facility. SRP believes that MCAQD may have inadvertently partially deleted this section. SRP suggests that MCAQD retain the ability to use SDS or MSDS as an information source for the VOC content recordkeeping requirements.

Response #2: Section 501.2(b) (Recordkeeping and Reporting-Current Lists)

In response to SRP's comment and the EPA's comment, the department re-inserted Safety Data Sheets (SDS) or Material Safety Data Sheets (MSDS) and included in the introductory statement to Section 501.2(b) the sentence "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." The EPA commented in June 2016 on all of the rules that the department is revising in regards to addressing the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). In such comments, the EPA asked the department "to ensure the documents listed (to verify compliance) give accurate values and use enforceable test methods. For example, EPA generally has not approved the use of SDS/MSDS to determine compliance in SIP rules unless the SDS/MSDS specifies that the compound of interest was determined by an approved EPA method."

Comment #3: Section 501.2(e) (Recordkeeping and Reporting-Current Lists)

SRP commented that: In the proposed revisions to Rule 336, Section 501.2(e), the recordkeeping requirements for aerosol spray cans are limited to purchase records. SRP suggests that MCAQD provide flexibility in the recordkeeping requirements and allow either purchase or usage records to be used. This would be consistent with other surface coating recordkeeping requirements contained in Section 501.2(c).

Response #3: Section 501.2(e) (Recordkeeping and Reporting-Current Lists)

The department added usage records as acceptable compliance documents for recordkeeping documentation for aerosol spray can coating.

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

Not applicable.

15. **Incorporations by reference and their location in the rules:**

The department incorporated by reference sections of the Code of Federal Regulations in the following sections of the rule: Section 503.2 (Compliance Determination and Test Methods-Test Methods Incorporated By Reference)

16. **Was this rule previously an emergency rule?**

No

17. **The full text of the rule follows:**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 336
SURFACE COATING OPERATIONS
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SECTION 300 – STANDARDS

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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 ~~coating operations~~ coatings listed in Tables 336-1 through 336-7 of this rule ~~Table 1 of this rule~~ that are not more specifically regulated by another source specific rule within Maricopa County Rules 300 to 359 of Regulation III, ~~Examples of coating operations not regulated by this rule appear subsection 305.1~~ 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 ~~Subsections 305.2~~ Section 103 ~~through 305.7 set~~ sets forth partial ~~or conditional~~ 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 0.15 lb VOC/gal (18g/L) nor to solvents having a VOC content of material less than 0.15 lb VOC/gal.

102.4 ~~NSPS & NESHAP:~~ 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 and Regulations~~ 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~~ **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.

~~202~~ ~~AEROSOL CAN: A non-refillable hand-held container from which a product is dispensed by means of pressurized propellant packaged within the container.~~

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.

~~203~~ **204** **AIR-DRIED COATING:** A coating ~~which is~~ 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).

~~204~~ **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.

~~205~~ **210** **CAN COATING:** ~~Any~~ 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.

~~206~~ **211** **CAN PRINTING INK:** A fluid or viscous formulation used in can printing that imparts design, pattern, and/or alphanumeric symbols to a can.

~~207~~ **212** **CLEAR COAT:** ~~Any~~ A coating ~~which~~ that lacks color or opacity or is transparent.

213 **COATING APPLICATION EQUIPMENT:** Any equipment including, but not limited to, spray guns, wands, rollers, brushes ~~or any other means~~ used to apply or cover a surface with a coating for either aesthetic, protection or other purpose.

~~208~~ **214** **COIL COATING:** ~~Any~~ A coating applied to the surface(s) of flat metal sheets or strips that ~~are~~ is formed into rolls or coils not used to make cans.

~~209~~ **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.

~~210~~ **221** **ELECTROSTATIC** ~~SPRAY~~ **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.

~~211~~ **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. ~~designed and operated in accordance with good engineering practice to reduce emissions of volatile organic compounds.~~

~~212~~ **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.

~~213~~ ~~EXEMPT EVAPORATING COMPONENTS (EXEMPT COMPOUNDS): The non-VOC, evaporating portion of a coating formulation; this necessarily includes all non-precursor organic compounds, as well as water and other inorganic liquids and gases.~~

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.

~~214~~ **226** **EXTERIOR CAN BASECOAT:** ~~Any~~ 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 ASTDM D-523 adopted in 1980 shows reflectance of 75 or more on a 60° meter.

~~215~~ **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). ~~Extreme-performance coatings include but are not limited to, coatings applied to locomotives, railroads cars, farm machinery, plastic, rubber, leather, or glass.~~

~~216~~ **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.

~~217~~ **230** **FABRIC COATING:** ~~Any~~ 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.

~~218~~ **232** **FILM COATING:** ~~Any~~ 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 ~~with a wet film thickness of less than 10 mils prior to the application of a topcoat~~ 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.

~~219~~ **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 ~~with a wet film thickness of 10 mils or more prior to the application of a topcoat~~ 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.

~~220 HEAT SENSITIVE MATERIAL: Materials which cannot consistently be exposed to temperatures greater than 203°F (95°C) without materially affecting desired function, performance, or other characteristics~~

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.

~~221~~ **245** **HIGHWAY VEHICLE:** ~~Any~~ 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.

~~222~~ **246** **INTERIOR BASECOAT:** ~~Any~~ 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.

~~223~~ **247** **INTERIOR BODY SPRAY:** ~~Any~~ 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.

~~224~~ **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.

~~225~~ **250** **LOW PRESSURE SPRAY GUN:** An air-atomized spray gun, ~~that~~ which by design, functions best at ~~tip~~ air cap pressures below 10 psig ~~(516 mm Hg)~~ (0.7 bar), measured according to Section ~~503.1d~~ 503.1(d) of this rule, and for which the manufacturer makes no public claims ~~to the public~~ that the gun can be used effectively above 12 psig ~~(619 mm Hg)~~ (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.

~~226~~ **252** **METAL FURNITURE:** ~~Any 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.

~~227~~ ~~MINUS EXEMPT COMPOUNDS or MINUS EXEMPT EVAPORATING COMPONENTS: See VOC Content Minus Exempt Compounds.~~

~~228~~ **255** **MOBILE EQUIPMENT:** ~~Any equipment~~ Equipment that is physically capable of being driven or drawn ~~upon~~ on a highway including, but not limited to, ~~the following types of equipment~~: 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.

~~229~~ ~~ORGANIC COMPOUND: Any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, carbonates, and metallic carbides.~~

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.

~~230~~ **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.

~~231~~ **262** **OVERVARNISH:** ~~Any~~ 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.

~~232~~ **264** **PAPER COATING:** ~~Any~~ A coating applied on or impregnated into paper, including, but not limited to, adhesive tapes ~~and labels~~, book covers, post cards, office copier paper, and drafting paper ~~and pressure sensitive tapes~~.

~~233~~ **265** **PLASTIC:** Substrates ~~containing~~ 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.

~~234~~ ~~POLYESTER AND POLYESTER RESIN: A complex, polymeric ester containing difunctional acids.~~

~~235~~ ~~POLYESTER COMPOSITE: Cured material made of polyester resin with reinforcing material imbedded in it, such as glass fibers.~~

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.

~~236~~ **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.

~~237~~ **273** **QUALITY CLASS Q:** ~~Any~~ A system, structure, coating or other component ~~which~~ 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.

~~238 REFINISHING: Recoating a used object's surface which arrives at the refinisher with a coating or with a previous coating worn away by use.~~

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.

~~239~~ **275** **REPAIR COATING:** A coating ~~or coating operation~~ used to recoat the portion of a completed finish that suffered post-production damage at the facility where the finish was applied.

~~240 RESTRICTED SPRAY GUN: Any air-atomizing spray gun that is not a low-pressure spray gun, and any other coating gun that is not on the list in Section 303.1.~~

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.

~~241~~ **277** **SILICONE RELEASE COATING:** ~~Any~~ 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.

~~242~~ **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 ~~15 pounds (6.8 kg) per day and less than~~ 2 tons/yr (1814 kg) ~~per year~~; as demonstrated by both adequate records of coating and diluent use (~~pursuant~~ according to Section ~~501.2~~ 501.2 of this rule) and a separate tally of the number of days each month ~~that~~ 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.

~~243~~ **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.

~~244~~ **282** **SURFACE COATING:** ~~Any~~ A liquid, fluid, or mastic composition ~~which~~ 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.

~~245~~ **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.

~~246~~ **285** **THREE-PIECE CAN SIDE-SEAM** ~~COAT~~ **COATING:** ~~Any~~ A coating sprayed onto the interior and/or exterior of a can body seam on a three-piece can to protect the exposed metal.

~~247~~ **286** **TOPCOAT:** The final, permanent, ~~coating formulation~~ coating formulation that ~~completed~~ completes the finish on a surface.

~~248 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.~~

~~249~~ **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.

~~250~~ **289** **TWO-PIECE CAN EXTERIOR END** ~~COAT~~ **COATING:** ~~Any~~ 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 substate to achieve a uniform metalized layer.

~~251~~ **291** **VINYL COATING** ~~(COATING ON VINYL)~~: ~~Any~~ A decorative or protective coating or reinforcing coating applied over vinyl-coated textile fabric or vinyl sheets.

~~252 VOC BORNE COATING: A coating that contains more VOC than water, by weight.~~

~~253 VOC BORNE DILUENT: A solvent or other diluent that contains more VOC than water, by weight~~

~~254.2~~ **292** **VOC ACTUAL:** ~~VOC CONTENT OF MATERIAL (MATERIAL VOC CONTENT) Actual includes the VOC Content minus all~~ 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:

VOC Actual ~~Content of Material Cleaners or Reducers~~ = $\frac{W_s - W_w - W_{es}}{V_m}$

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 ~~(Section 261)~~ 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)

~~254~~ **293** **VOC CONTENT:** ~~In this rule, VOC content is determined by one of the following two formulas: To determine compliance with Table 1 or the 2.0 lb VOC/gal threshold in Section 302, use the following formula in subsection 255.1; For other purposes, use the formula in subsection 255.2:~~ 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.

~~254.1~~ **294** **VOC REGULATORY:** ~~VOC Content Minus Exempt Compounds (is the same as VOC CONTENT MINUS EXEMPT EVAPORATING COMPONENTS) The VOC content~~ 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:

~~VOC Content Minus Exempt Compounds~~ 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:** ~~A person~~ An owner or operator shall comply with one of the following for all applications of surface coatings:

301.1 Meet the limits in ~~Table 1~~ 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 ~~subsection 306.1~~ Section 305 of this rule when applying a coating that exceeds the VOC limits in ~~Table 1~~ Tables 336-1 through 336-7 of this rule.; ~~or~~ 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 ~~Section 305~~ Sections 103 or 104 of this rule.

~~TABLE 1~~

~~SURFACECOATINGEMISSIONLIMITS~~		
~~TYPE OF SURFACE COATING~~ ~~Column I~~	~~LIMITS AS APPLIED: VOC content minus exempt compounds (see subsection 255.1)~~ ~~ColumnII~~ ~~lbs/gal~~	~~g/liter~~
~~Can Coating~~		
~~Sheet Basecoat (Exterior and Interior) and Overvarnish~~	~~2.8~~	~~340~~
~~Two-Piece Can Exterior (Basecoat and Overvarnish)~~	~~2.8~~	~~340~~
~~Two and Three-Piece Can Interior Body Spray~~	~~4.2~~	~~510~~
~~Two-Piece Can Exterior End (Spray or RollCoat)~~	~~4.2~~	~~510~~
~~Three-Piece Can Side-Seam Spray~~	~~5.5~~	~~660~~
~~End Sealing Compound~~	~~3.7~~	~~440~~
~~Can Printing Ink~~	~~2.5~~	~~300~~
~~Coil Coating (any coat)~~	~~2.6~~	~~310~~
~~Metal Furniture Coating~~	~~3.0~~	~~360~~
~~Large Appliance Coating~~	~~2.8~~	~~340~~
~~OTHER METAL PARTS ANDPRODUCTSCOATING (Asdefine d inSection 231)~~ ~~The following includes Non-adhesive Coating, Adhesive, Adhesive Primer, Caulking, and Beaded Sealants:~~		
~~Air-Dried Coating~~	~~3.5~~	~~420~~
~~Baked Coating [above 200 F (93 C)]~~	~~3.0~~	~~360~~
~~Silicone Release Coating: Bake d or Air-Dried~~	~~3.5~~	~~420~~
~~Fabric Coating~~	~~2.9~~	~~350~~
~~Film Coating~~	~~2.9~~	~~350~~
~~COATING PLASTIC PARTS AND PRODUCTS THAT ARE NOT DEFINED AS FLEXIBLE~~	~~3.5~~	~~420~~
~~COATING FLEXIBLE PLASTICPARTSANDPRODUCTS~~		
~~Primer~~	~~4.1~~	~~490~~
~~Color Topcoat~~	~~3.8~~	~~450~~
~~Basecoat/Clear Coat (Combined System) Limit for either coat~~	~~4.5~~	~~540~~
~~Paper Coating, including Adhesives~~	~~2.9~~	~~350~~
~~Vinyl Coating (Coating on Vinyl)~~	~~3.8~~	~~450~~
~~STRIPPABLE BOOTH COATINGS~~	~~2.0~~	~~240~~

Table 336-1: Coating Limits for Metal Parts and Products

Coating Category	**AirDried**		**Baked**	
	g VOC/l	**lb VOC/gal**	**g VOC/l**	**lbVOC/ 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,Exterio r	420	3.5	420	3.5
Drum Coating, Reconditioned,Interio r	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

Coating Category	AirDried		Baked	
	g VOC/l	lb VOC/gal	g VOC/l	lbVOC/ gal
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 Primer, Beaded Sealant, and Caulking	420	3.5	360	3.0
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)an d Overvarnish	340	2.8
Three-Piece Can Side-Seam Spray	660	5.5
Two and Three-Piece CanInterio r Body Spray	510	4.2
Two-Piece Can Exterior (Basecoat and Overvarnish)	340	2.8
Two-Piece Can Exterior End (Spray or RollCoat)	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-FreeCoatin gs	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

Coating Category	g VOC/l	lb VOC/gal
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	AirDried		Baked	
	g VOC/l	lbVOC/ gal	g VOC/l	lbVOC/ 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	[illegible]	[illegible]
Solar-Absorbent	420	3.5	360	3.0
Strippable Booth Coating	240	2.0	[illegible]	[illegible]

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	[illegible]	[illegible]	350	2.9
Paper, Film, and Foil Surface Coating (Not Including Pressure Sensitive Tape and Label)	0.08	0.40	[illegible]	[illegible]
Pressure Sensitive Tape and Label Surface Coating	0.067	0.20	[illegible]	[illegible]
Strippable Booth Coating	[illegible]	[illegible]	240	2.0
Vinyl	[illegible]	[illegible]	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 ~~A person~~ An owner or operator shall ~~employ~~ 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):

~~302.1~~ **a.** ~~A~~ HVLP spray gun; ~~or~~

~~302.2~~ **b.** ~~An~~ Electrostatic system; ~~or~~

~~302.3~~ **c.** A system that atomizes principally by hydraulic pressure, including "airless" and "air assisted airless";

~~302.4~~ **d.** ~~HVLP Spray- Gun; Non-atomizing or non-spraying application methods, such as but not limited to dipping, rolling, or brushing; or H~~Hand application methods, including but not limited to;

~~e.~~ **(1)** Flow Coat;

~~f.~~ **(2)** Roll Coat;

~~g.~~ **(3)** Dip-Coating;

~~h. Hand Application Methods;~~

~~302.5~~ **e. An Alternative Application Method:** Any method approved by the Administrator ~~of the Federal EPA or the Control Officer as having a transfer efficiency of 65% or greater~~ 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: ~~A person~~ An owner or operator shall comply with the following when using VOC-containing material to clean application equipment:

~~303.1 Disassemble any spray gun and other application equipment and clean it in:~~

~~a. A container which remains covered at all times, except when the application equipment is being handled in the container, or transferred into or out of the container; or~~

~~b. A commercially-sold gun cleaning machine which shall be operated and maintained as stipulated in the Air Pollution Permit's Operation and Maintenance (O&M) Plan, or in the absence of its mention in the O&M Plan, according to manufacturer's or distributor's instructions.~~

~~303.2 Vapor Pressure Limits: Any person subject to this rule using VOC-solvent to clean coating application equipment shall use only solvent which, as used, has a VOC-vapor pressure below 35 mm Hg at 20° C (68° F), except for sprayless equipment exempted pursuant to subsection~~

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** ~~Spray-Gun~~ **Cleaning Machine:** A non-automatic remote reservoir ~~Spray-Gun Cleaning Machine~~ cleaning machine shall meet all of the following requirements:

(a) Drain solvent cleaner from the sink/work-space ~~quickly~~ 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 ~~so that the reservoir will not allow VOC vapors to escape to the atmosphere; and~~

(c) ~~Allow a machine design in which~~ 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 ~~including but not limited to paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges;~~

b. If disassembled spray-guns ~~must be~~ are soaked ~~in a vat which~~ 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 HANDLING AND DISPOSAL OF VOC:~~

~~304.1 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 leak-free containers.~~

~~304.2 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 brushes, waste rollers, waste applicators, waste solvents, and their residues, in closed, leakfree containers which are legibly labeled with their contents and which remain covered when not in use.~~

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 EXEMPTIONS:~~

~~305.1 Categorical Exemptions: This rule does not apply to the following operations:~~

~~a. Aerospace coating operations (Rule 348).~~

~~b. Architectural coating, including buildings and erected structures (Rule 335).~~

~~c. Cleaning: VOC loss from cleaning or stripping a surface for coating or other purpose is regulated by Rule 331.~~

~~d. Marine vessel exterior refinishing.~~

~~e. Polyester coatings applied to polyester composites.~~

~~f. Printing and graphic arts coating (Rule 337).~~

~~g. Semiconductor manufacturing (Rule 338).~~

~~h. Coating a highway vehicle or mobile equipment (Rule 345).~~

~~i. Wood: Coating Wood Furniture (Rule 342); Coating Wood Millwork (Rule 346).~~

~~305.2 Exemptions for Qualified Materials: Rule 336 does not apply to the following materials that meet the specific qualification(s) and limitation(s) set forth herein:~~

~~a. Leak-Preventing Materials: Sealants, adhesives, 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) Used substrates, post manufacture, such as, but not limited to, old joints and seals on pipe and valve assemblies.~~

~~b. Adhesive Use:~~

~~(1) Adhesive and adhesive primer applications are exempt from this rule, except for the 2 categories that appear in Table 1, namely adhesive materials applied to other metal parts and products (as defined in Section 231), and adhesives used in paper coating (as defined in Section 233).~~

~~(2) Any adhesive exempted by this Rule 336 and to which no other rule in Regulation III specifically applies shall comply with the provisions of Rule 330 (Volatile Organic Compounds) of these Rules & Regulations.~~

~~c. 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 as defined in Section 231 of this rule, or in the manufacturing of cans.~~

~~d. Extreme Performance Coatings: Extreme performance coatings are exempt from the VOC limits of Table 1 when used under the following conditions:~~

~~(1) Used on internal combustion engine components that are normally above 250°F (121°C) during use; or~~

~~(2) Used at temperatures above 250°F (121°C) on items that are both included under SIC (Standard Industrial Classification, 1987) codes 3661, 3663, 3669, 3677, 3678, 3679, or 3769 and are electronic products in space vehicles and/or are communications equipment. The US Government Printing Office "Standard Industrial Classification Manual, 1987" (and no future editions) is incorporated by reference and is on file at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, Arizona 85004.~~

~~305.3 ECS Use In Lieu Of Equipment/Practice: In lieu of meeting an equipment or work practice standard within Sections 302, 303, or 304, an owner or operator is allowed to instead use an ECS that has a capture efficiency not less than 90% and meets all ECS requirements in Section 306.~~

~~305.4 Spray-Gun And VOC-Limit Exemptions: The following are exempt from subsection 301.1, subsection 301.2, and Section 302 of this rule:~~

~~a. Coating with an aerosol can.~~

~~b. Touch up or repair coating operations as defined in Sections 250 and 240.~~

c. Low usage coatings which in aggregate of all formulations do not exceed 55 gallons (208 liters) per year facility-wide if the operator updates usage records of these coatings on each day of their use, pursuant to subsection 501.2.

d. A small surface coating source (SSCS) as defined in Section 243. However, once a small surface coating source exceeds either the 15 lb per day or the 2 tons per year limits that are required to maintain SSCS status that facility is permanently subject to the limits of subsection 301.1, subsection 301.2, and Section 302, with the following exception:

(1) For such a facility that does not have either a 15 lb/day or a 2 ton/year VOC emission limit in an Air Pollution Permit for processes regulated by this rule, an owner or operator may retain the exemption if s/he agrees in writing to enforceable permit conditions that establish these or stricter limits.

(2) However, a facility that violates its permit limit of either 15 lbs VOC/day or 2 tons VOC/yr. for coating process regulated by this Rule 336 is permanently subject to the limits of subsections 301.1 and 301.2, and Section 302.

e. A Quality Class Q protective coating that is used on equipment, structures, and/or components within a containment facility of a nuclear power plant and is approved in accordance with either ANSI standards N101.2 and N101.4 or with ASTM Standards D3911 and D3843.

f. 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.

305.5 Special Facilities/Operations:

a. Silicone Release Coatings: Silicone release coating operations controlled by an ECS pursuant to subsection 301.2 are exempt from the 85 percent overall control efficiency requirement if the ECS demonstrates at least 70 percent overall control and the coating is applied with a liquid seal air spray system.

b. Bonding Impact Resistant Rubber Lining To Metal: An adhesive and an adhesive primer are exempt from Table 1 limits, but shall not have a VOC content of material exceeding 850 grams of VOC per liter (7.1 lb/gal), if such adhesive is used to bond sheets/strips of rubber to metal equipment so that such rubber sheathing directly contacts material received by the metal and so protects the metal. This exception does not apply to any other situations where adhesives are used to bond rubber to metal.

305.6 Exemption Of Coating Applicator Cleanup: A person is allowed to use solvent that has at 20° C (68° F) a total VOC vapor pressure above 35 mm Hg for cleaning coating application equipment, but only if such application equipment does not use spray devices and the same principal solvent is used for cleaning as is used in the coating.

305.7 Low-Usage Allowance for Restricted Guns: A person may employ spray guns otherwise prohibited by Section 302 for use with coatings over 2 lb VOC /gal under the following limited conditions:

a. If VOC emissions from the finishing application station, are captured and directed to an ECS complying with the provisions of Section 306.

b. To coat the inside of pipes and tubes with a wand-style applicator.

c. Using an airbrush or other small gun that has a reservoir capacity not exceeding 250 cc (8.8 fluid ounces) and is used solely for detailing, lettering, touchup, and/or repair.

306 **305** REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND **EMISSION CONTROL SYSTEM (ECS)** MONITORING EQUIPMENT **REQUIREMENTS:**

306.1 ECS Control Efficiencies: To meet the requirements pursuant to subsection 301.2, subsection 305.3, or subsection 305.7, an ECS shall be operated as follows:

a. Overall ECS Efficiency: Overall, the ECS shall prevent at least 85% of the mass of the VOC emitted by each coating or process so controlled from entering the atmosphere except as successfully controlled pursuant to the alternative in subsection 306.1c(2).

b. Capture Efficiencies:

(1) For an ECS used pursuant to subsection 301.2 and/or subsection 305.7, capture shall be at least 87%.

~~(2) For an ECS used pursuant to subsection 305.3, capture shall be at least 90%.~~

~~c. Control Efficiency Of The Emissions Processing Subsystem:~~

~~(1) The emissions processing subsystem of the ECS shall reduce the mass of VOC entering it by at least 90 percent; or~~

~~(2) Alternative for Very Dilute Input: For VOC input concentrations of less than 100 ppm (as carbon) at the inlet of the ECS emissions processing subsystem, an ECS' VOC processing subsystem also satisfies the processor efficiency requirements of this rule if:~~

~~(a) The VOC output is consistently less than 20 mg VOC/M3 (as carbon) adjusted to standard conditions; and~~

~~(b) The ECS consistently shows an overall control efficiency of at least 85% when tested pursuant to subsection 503.3 at VOC input concentrations exceeding 100 ppm (as carbon).~~

~~d. Coating that exceeds the applicable VOC limits in Table 1 shall be clearly identified such that coating operators are informed an ECS must be used.~~

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/m^3 (as methane) adjusted to standard conditions.

~~306.2~~ **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 ~~that are~~ used pursuant to this ~~Rule 336~~ rule or to ~~an air pollution control permit~~ 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 ~~that is~~ used pursuant to this ~~Rule 336~~ rule.

c. The owner or operator shall comply with all ~~the~~ identified actions and schedules provided in each O&M Plan.

~~306.3~~ **305.3 Providing and Maintaining ECS Monitoring Devices:** ~~Any person~~ 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 ~~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. Records shall be kept pursuant to Section 502 of this rule which demonstrate that the ECS meets the overall control standard required by ~~subsection 306.1~~ Section 305.1 of this rule and is operated in accordance with the equipment manufacturer's specifications.

~~306.4~~ **305.4 O&M Plan Responsibility:** An owner or operator of a facility that is required to have an O&M Plan pursuant to ~~subsection 306.2~~ 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. ~~If revisions to the plan have been submitted and not yet been approved by the Control Officer, then an owner or operator shall comply with the most recent O&M plan on file at Maricopa County Air Quality Department.~~

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): ~~By August 1, 1999:~~ An owner or operator installing an ECS shall:

a. ~~All new~~ Implement all recordkeeping provisions ~~shall be in effect~~, including ~~subsections 501.1c and 501.2a~~ Section 502 of this rule.

b. Announce the ~~The~~ intention to use an ~~Emission Control System (~~ECS ~~)~~ ~~shall be announced~~ to the Control Officer in writing if:~~

~~(1) The~~ the ECS is used as an alternative to meeting the ~~spray-gun provisions~~ VOC limits of Section ~~302~~ 301.1 of this rule. ~~or~~

~~(2) The ECS is used as an alternative to meeting the gun cleaning machine provisions of Section 303.~~

~~401.2 Spray-Guns: By November 1, 1999 , the following shall be in continuing use:~~

~~a. Spray guns required pursuant to Section 302;~~

~~b. Cleaning solvent(s) having the required vapor pressure pursuant to Section 303, and the data sheet(s) confirming the vapor pressure.~~

~~401.3 By May 1, 2000, the ECS announced pursuant to subsection 401.1b shall be in continuing use.~~

401.2 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: ~~Any person subject to this rule shall comply with the following requirements of subsections 501.1 and 501.2 that apply to materials regulated by this Rule 336. Records shall be retained for 5 years and shall be made available to the Control Officer upon request.~~ An owner or operator shall comply with the following recordkeeping requirements:

501.1 Records shall be retained for five years and shall be made available to the Control Officer without delay upon verbal or written request.

501.2 Current Lists: Maintain a current list of coatings or any other VOC-containing materials regulated by this rule. The list:

~~a. Maintain a current list of coatings, adhesives, reducers, thinners, gun cleaning materials, additives, and any other VOC-containing materials regulated by this rule; give the VOC content of material for each as received (before thinning). A complete, neat assemblage of this data meets the requirements for a list. Express VOC content in 1 of 3 forms: pounds VOC per gallon, grams VOC per liter, or the percent VOC by weight along with the specific gravity or density, (2 numbers are required).~~

~~b. Less Stringent Recordkeeping for Consistently Low Users: An operator of a facility that always uses less than 2 gallons per day total of thinner and coating (listed in Table 1), meets the listing and recording requirements of subsections 501.1a, 501.1c, and 501.2 if:~~

~~(1) All purchase receipts/invoices of VOC-containing material that is regulated by this rule for the most recent 12 months are kept together; and~~

~~(2) Current data sheets show the VOC content of material for every VOC containing substance currently used that is regulated by this rule.~~

~~c. Facilities That Are Not Small Surface-Coating Sources: Facilities that are not small surface-coating sources shall do the following:~~

~~(1) Coatings: For all coatings (except those recorded under the subsection 305.4c low-usage allowance), make the following listings for coatings and adhesives that have VOC limits in Table 1:~~

~~(a) VOC Before Reducing: The VOC content of each coating as received, minus exempt compounds. (This figure is sometimes called the "EPA Method 24" VOC content on manufacturer's data sheets). If the coating is a multi-part coating, list the VOC content which the manufacturer states the coating will have once you have mixed all the necessary parts together in the proportions specified by the manufacturer.~~

~~(b) List Maximum VOC Content Of Coating As Applied: For each coating that you thin/reduce or add any additive to, record in a permanent log either of the following:~~

~~(i) The maximum number of fluid ounces thinner/reducer that you ever add to a gallon of unreduced coating (or maximum g/liter), and the maximum fluid ounces of every other additive you mix into a gallon of the coating; or~~

~~(ii) The VOC content of the coating, after adding the maximum amount of thinner/reducer and other additives that you would ever add, as determined by the formula in subsection 255.1.~~

~~(2) Applicator Cleanup Solvent: Have a hardcopy of the VOC vapor pressure (VP) at 20°C (68°F) of solvent(s) used to clean spray guns, hoses, reservoirs, and any other coating application equipment. Any one of the following ways of providing the VP data is sufficient:~~

~~(a) A current manufacturer's technical data sheet;~~

~~(b) A current manufacturer's safety data sheet (MSDS);~~

~~(c) Actual test results; or~~

~~(d) A letter signed by an official or lab manager of the supplying facility.~~

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.

c. Shall maintain usage or purchase records for aerosol can spray coating, including VOC content.

~~Frequency of Updating Usage or Purchase Records: Update your records, showing the type and amount used of each VOC-containing coating or adhesive which is regulated by name or type in Table 1, and update each VOC-containing material, related to surface coating, that is not addressed by Table 1. This includes, but is not limited to, thinners, surfacers, and diluents. Maintain records according to the following schedule:~~

~~a. Small Surface Coating Sources: Small surface-coating sources shall update each month's records of coating use by the end of the following month.~~

~~b. All Other Sources: For a source that does not meet the definition of small surface-coating source,~~

~~(1) Monthly: Monthly update records of each coating used that complies with the VOC limits in Table 1. Complete a month's update by the end of the following month.~~

~~(2) Daily: Daily update the usage of each coating that exceeds its limits in Table 1, including coating exempted by subsection 305.4c.~~

~~Grouping By VOC Content: For purposes of recording usage, coatings and adhesives that are in the same category in Table 1, and have similar VOC content, may be recorded under a name that includes the category name. The highest VOC content among the members of that grouping shall be assigned to that grouping, rounded to the nearest 10th of a pound. To identify what products belong within each group, after each group name and the group's VOC content of material must appear the name of each product in the group and its VOC content of material. For example: For flexible plastic parts, you use 20 gallons of primer that has 3.04 lb VOC/gal., 30 gallons of primer having 3.14 lb VOC/gal., and 40 gallons of primer having 2.89 lb VOC/gal. You may record usage as 90 gallons of flexible plastic primer containing 3.1 lb VOC/gal. If grams VOC per liter is used to record VOC content, round off to the nearest whole number of grams.~~

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, an owner or operator of the facility shall:~~

~~a. Record the amount and VOC content of coating, the amount of catalyst/hardener, and the amounts of solvent, reducer, and diluent used that were subject to ECS control pursuant to this Rule 336; and~~

~~b. Make a permanent record of the operating parameters of the key systems as required by the O&M Plan; and~~

~~c. Make a permanent record of the maintenance actions taken, within 24 hours of the action's completion, for each day or period in which the O&M Plan requires that maintenance be done.~~

~~An explanation shall be entered for scheduled maintenance that is not performed during the period designated for it in the O&M Plan.~~

502.1 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.

502.2 An explanation shall be recorded for periods of time an approved ECS is not operating.

502.3 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.

502.4 Corrective action taken, if any.

502.5 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: ~~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.~~

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 ~~subsection 503.2f~~ Sections 503.2(f) of this rule (BAAQMD Method 31 [April 15, 1992]) or ~~503.2g~~ 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 ~~subsection 503.2c~~ Sections 503.2(c) (EPA Method 24), ~~503.2f~~ 503.2(f) (BAAQMD Method 31 [April 15, 1992]) or ~~503.2g~~ 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 ~~503.1a~~ 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 ~~503.1b~~ 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 ~~subsection 503.2b~~ Section 503.2(b) of this rule, or EPA Method 25 and its submethod, referred to in ~~subsection 503.2d~~. Section 503.2(d) of this rule.

c. Capture efficiency of an ECS shall be determined either by the methods in ~~503.2e~~ 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 ~~503.2a~~ 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 ~~and air horns~~ of an air-atomizing spray gun ~~(reference subsection 302.1: Section 225)~~ 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 ~~Adopted~~ **Incorporated by Reference:** The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods ~~The EPA test methods as they exist in the Code of Federal Regulations (CFR) (July 1, 1998), as listed below, are adopted~~ are incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. ~~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 503 are available at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, AZ, 85004.~~ 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~~/adhesives~~ controlled pursuant to ~~subsection 302.1 or subsection~~ Section ~~305.3~~ 305 of this rule:

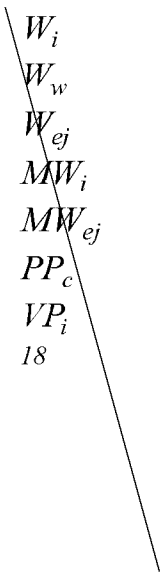
a. Measurements of VOC emissions from an ECS shall be conducted in accordance with EPA Methods 18 or its submethods, or by Method 25 or its submethods (40 CFR 60, Appendix A).

b. Capture efficiency of an ECS shall be determined by mass balance in combination with ventilation/draft rate determinations done in accordance with ~~subsection 503.3(c)~~ 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).

~~504 FORMULA FOR TOTAL VOC VAPOR PRESSURE: Equivalent to: VOC COMPOSITE PARTIAL PRESSURE. Reference subsection 303.2~~

$$PP_c = \frac{\sum_{i=1}^{n} (W_i)(VP_i) / MW_i}{\frac{W_w}{18} + \sum_{i=1}^{m} \frac{W_{ej}}{MW_{ej}} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$


W_i
W_w
W_{ej}
MW_i
MW_{ej}
PP_c
VP_i
18

= ~~Weight of the "*i*"th VOC compound in grams~~
= ~~Weight of water in grams~~
= ~~Weight of the "*j*"th non-precursor compound in grams~~
= ~~Molecular weight of the "*i*"th VOC compound in grams per gram mole, e.g., one gram-mole of isopropyl alcohol weighs 60 grams~~
= ~~Molecular weight ofs the "*j*"th non-precursor compound, e.g., 1 gram-mole of acetone weighs 58 grams~~
= ~~VOC composite partial pressure at 20° C in mm mercury (Hg)~~
= ~~Vapor pressure of the "*i*"th VOC compound at 20° C in mm Hg~~
= ~~Weight of one gram-mole of water~~

NOTICE OF FINAL RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 342: COATING WOOD FURNITURE AND FIXTURES
PREAMBLE

1. **Rule affected:** **Rulemaking action**
Rule 342: Coating Wood Furniture and Fixtures — Amended

2. **Statutory authority for the rulemaking:**
Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. **The effective date of the rule:**
Date of adoption: November 2, 2016

4. **List of public notices addressing this rulemaking:**
Notice of Briefing to Maricopa County Manager: May 2015
Notice of Stakeholder Workshops: August 3, 2015, December 17, 2015, and February 9, 2016
Notice of Maricopa County Board of Health Meeting: April 25, 2016
Notice of Proposed Rulemaking: 22 A.A.R. 1184, May 13, 2016

5. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name: Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, Arizona 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

6. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary:

Rule 342 (Coating Wood Furniture and Fixtures) limits the emission of volatile organic compounds (VOCs) from the surface preparation and coating of wood furniture and fixtures. The Clean Air Act (CAA) requires that the U.S. Environmental Protection Agency (EPA) and the states control VOC emissions because VOCs react in the presence of sunlight to form ground-level ozone, a major component of "smog" which is hazardous to human health and the environment. Ozone is largely created by a photochemical reaction between nitrogen oxides (NO_X) and VOCs in the presence of sunlight. NO_X and VOCs, called ozone precursors, create ground-level ozone in urban areas because ozone precursors are emitted from vehicle exhausts, fuel combustion, and VOC coatings used for various surface coating operations such as those regulated in Rule 342. The Phoenix area, determined by violations of

the National Ambient Air Quality Standards (NAAQS), has been reclassified from "marginal" to "moderate" nonattainment for the 2008 eight-hour ozone NAAQS. (86 FR 26697, May 4, 2016).

Revisions to Rule 342 addressed the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone NAAQS. Rule 342 revisions included Reasonably Available Control Technology (RACT) for VOCs. The Maricopa County Air Quality Department (department):

- Added or clarified text in order to meet the Control Techniques Guideline (CTG) for this rule – "Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations", April 1996
- Moved the exemptions from Section 307 to Section 103
- Deleted "red" and "green" gun tagging requirements
- Added or revised definitions in Section 200
- Revised Section 300 to clarify of the use of spray guns and the handling and disposal of VOC-containing materials
- Redesigned the table in Section 301 for easier reading
- Added VOC leak detection and repair requirements in Sections 300 and 500 to meet CTG and RACT requirements
- Revised the compliance schedule in Section 400
- Added annual operator training requirements to Section 400
- Revised the finishing material list in Section 500
- Added recordkeeping requirements for monthly VOC leak detection inspection and repair and annual operator training in Section 500

In addition, the amendments corrected typographical or other clerical errors; made minor grammatical changes to improve readability or clarity; modified the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or made various other minor changes of a purely editorial nature. As these changes did not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 17 of this notice.

Background:

The Clean Air Act Amendments (CAAA) of 1990 required ozone nonattainment areas to implement reasonably available control technology (RACT) to control volatile organic compound (VOC) emissions. This RACT determination for the associated industry was to be incorporated into the state implementation plan (SIP). RACT is defined by the United States Environmental Protection Agency (EPA) as "The lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." (44 FR53761, September 17, 1979) To assist state and local agencies in determining RACT, the EPA issues Control Techniques Guidelines (CTG) for specific sources. The CTG describes the "presumptive norm" for RACT and includes a review of current knowledge, technology and costs of a variety of emission control techniques. These guidelines provide state and local environmental agencies a guide in establishing reasonably available control technology (RACT) regulations for local wood furniture finishing operations. The state or local agency can then use the presumptive norm for RACT or develop more stringent measures to meet the established ozone standards.

In 1989, the EPA began the process of establishing the CTG presumptive norm for the wood furniture industry. Drafts of a CTG were presented in November 1991 to the National Air Pollution Control Techniques Advisory Committee (NAPCTAC) without a RACT determination for the wood furniture industry.

The wood furniture industry started to develop its own report in early 1991. This report evaluated a variety of emission control technologies for their technical feasibility and associated cost. The report also included "an extensive analysis of the economic impacts of the control technologies…"[1] (page 1-3). The industry report did not include any RACT recommendations.

During this same time, the EPA began work on a national emission standard for hazardous air pollutants (NESHAP) for the wood furniture industry. The NESHAP establishes limits for hazardous air pollutants (HAPs). Because the CTG document was further along in the development than the NESHAP, industry was concerned they would be required to install control technologies to meet the CTG then later when the NESHAP was promulgated, have to invest again in different technologies. To address this issue, the EPA and industry agreed

establish a committee and develop both the CTG and NESHAP through regulatory negotiation (58 FR 34011, June 23, 1993). In November 1994, the committee reached consensus on the CTG and NESHAP framework and principles. The EPA issued the CTG for the wood finishing industry on May 20, 1996 (60 FR 25223).

The department began the rulemaking process for new Rule 342 (Coating Wood Furniture and Fixtures) during the same time period as the EPA was developing the CTG. Rule 342 was proposed to apply "…to any facility applying finishing material to furniture or fixtures made of wood or wood-derived material."[2] The rulemaking included VOC limits for the maximum concentration of VOC for various sealers and topcoats; emission control system (ECS) requirements; requirements for the use of various types of spray guns; and compliance options for small sources. On February 15, 1995, the department submitted Rule 342 to the Maricopa County Board of Supervisors (Board) for adoption. Stakeholders raised objection to the proposed rule because the option of meeting VOC limits through the use of averaging had been omitted from the proposed rule. The EPA was still in the process of drafting the CTG so no final determination had been made at the federal level concerning the averaging provision of the CTG. The department stated that the averaging provisions had been withdrawn from the draft rule because the department could not, at that time, demonstrate that the averaging provisions would meet the proposed VOC limits. The Board voted to continue Rule 342 to allow the department and Stakeholders to reach an agreement on the inclusion of the averaging provisions.[3]

The department and Stakeholders worked together to revise the draft Rule 342. On April 3, 1996, the Board again conducted a public hearing on the revised draft Rule 342. There were no objections to the proposed rule and the Board unanimously approved Rule 342, effective April 3, 1996.[4]

Additional alternative provisions were proposed to Rule 342. These included the proposed additions of separate appendices for small emitters of VOC and ECS requirements. Additional proposed revisions included an optional allowance of up to five percent (5%) of total coating to be applied by a conventional spray gun; recordkeeping formatting; clarification and addition of definitions; and use of colored tags on guns used to apply a higher VOC coating material.[5] The Board unanimously approved the additional proposed revisions for Rule 342 on November 20, 1996.[6] At this time, the department determined that Rule 342 met the CTG RACT standards for a "marginal" nonattainment area classification.

Rule 342 remained unchanged until 2013 when the department opened the rule for a "limited scope" rulemaking. This limited scope revision provided the means for the department to streamline the approval of updates to the EPA definition of VOC to provide a consistent definition of VOC and "non-precursor organic compounds" throughout the rules. In addition, the 2013 rule revision now allows businesses to use a wider range of materials, thus leveling the playing field for companies within Maricopa County with those operating in other jurisdictions.[7]

The County failed to meet the EPA deadline of July 20, 2015 for the 2008 8-hour ozone standard in order to maintain the marginal area attainment status. Anticipating a reclassification to moderate nonattainment status, the department reviewed and revised Rule 342 to meet the CTG RACT. The department determined that Rule 342 partially met RACT for a moderate nonattainment area with the current VOC emission limits in the various wood coating processes. The department identified two requirements in the CTG that were not included in the Rule 342: operator training requirements and VOC leak detection and repair. Recordkeeping requirements were also required for each additional requirement. The department determined that these requirements should be included as RACT for the moderate nonattainment classification. The rule revisions added operator training requirements, VOC leak detection inspections, VOC leak detection repair, and recordkeeping requirements. The department has determined that the previous and current revisions to Rule 342 now meet RACT requirements for Maricopa County.

As of October 2015, there were eight-two (82) permits issued by Maricopa County Air Quality that include Rule 342 requirements[8]. Three permits are Title V sources, but not necessarily Title V for VOC emissions from wood finishing only. Fifteen (15) permits are general woodworking permits. The remaining permits are Non-Title V permits. Some Non-Title V permitted facilities may be "synthetic minors" meaning the facility has accepted an emission limit below the Title V threshold. The Non-Title V permittees may or may not be permitted with the primary process being wood finishing.

Previous to this rulemaking, a Stakeholder inquired if Rule 342 applied to businesses primarily engaged in other activities in addition to the manufacturing of furniture or the repair

and reconditioning of furniture. In a technical guidance issued by the department (TG#98-007) on October 1, 1998, the department concluded, at that time, that if the business was primarily engaged in other activities and the manufacturer of furniture that Rule 342 did apply. If the business was engaged in other activities than furniture manufacturing and only reconditioned or repaired furniture, then they would not be subject to Rule 342. In this rulemaking, the department further clarified the applicability of Rule 342. Section 103 (Exemptions) was added to include total exemptions and partial exemptions addressing the reconditioning or repair of furniture. The department rescinded #TG98-007 with this rule revision.

Issues Raised and Discussed During this Rulemaking Process:

The department held three Stakeholder workshops: August 3, 2015, December 17, 2015, and February 9, 2016. Stakeholders included representatives from AF Lorts Company, AG Layne, American Coatings Association, Andrews Environmental Management LLC, Copperstate Cabinet, Crown Custom Millwork, Geosyntec Consultants, Legends Furniture Company, Oak Canyon Manufacturing Inc, Oakcraft Inc, Ping, RPM Wood Finishes Group, Ryley Carlock and Applewhite Law Firm, SATA GmbH & Co. KG, The Sherwin-Williams Company, SWCA Environmental Consultants, Trendwood, Woodcase Fine Cabinetry Inc, Wurth Louis, and the EPA.

Workshop discussions included the applicability of RACT to the current rule; the economic impact a reduction of VOC limits would have on the industry; the addition of operator training and recordkeeping requirements; the addition of leak detection and recordkeeping requirements; and alternative gun technologies now available.

RACT Issues Raised and Discussed

VOC EMISSION LIMITS

The department originally proposed to reduce the VOC emission limits for all coating types. Stakeholders said that the proposed reduction in the VOC limits goes beyond the established RACT requirements. The American Coatings Association responded:

> The current [original department proposed lower VOC limit] 275 g/l VOC industrial wood coating formulation technology that was developed for use in southern California for industrial customers could not be applied in the even hotter and dryer climate in Arizona. The majority of manufacturers and shops do not have air conditioning or operate in temperature and humidity controlled environments. Solventborne 275 g/l coatings rely on acetone that volatilize too quickly in the hot and dry environment of AZ and therefore does not spray well and produces an aesthetically unacceptable finish. Reformulating with other exempt compounds will increase the cost of the coatings, since these cost more than acetone. In addition, waterborne coatings that meet the 275 g/l limits have similar aesthetic issues.
>
> Also due to the Maricopa County's hot desert climate, we suggest that there are application difficulties with the [department proposed lower limit] 120 g/L (material) VOC Low-Solids Stain and Low-Solids Toner and Washcoat. Traditional High Solids Stain at <350 g/L VOC has not emerged as an acceptable alternative in other jurisdictions because the time required for curing before application of sealer and/or topcoat is generally considered excessive.[9]

Stakeholders requested that the department conduct more research to determine the VOC limits that would meet current RACT. The Stakeholders also requested documentation of the emissions inventory for the wood finishing industry in Maricopa County and how much emission reduction is hoped to be achieved with the proposed VOC limits. The original proposed VOC limits were from air agencies located in areas designated as serious nonattainment for ozone. The department reviewed other rules of air agencies that are located in moderate ozone nonattainment areas. The department determined the proposed VOC emission limits were too stringent for a moderate nonattainment area. Table 342-2 retained the current VOC emission limits and clarified the VOC emission limits for specific types of coatings. Other revisions to Table 342-2 included the addition of strippable booth coating, and low VOC topcoat VOC limits.

VOC LEAK DETECTION AND REPAIR

Section 304 and Section 501.4 were added to include VOC Leak Detection and Repair standards. The department referred to the CTG to determine the requirements for leak detection and repair. CTG Section 5.3.1.2 VOC Transfer[1] (pg 5-7) describes the leak inspection program. The minimum criteria identified in the CTG included a monthly inspection frequency; procedures for addressing leaking equipment; and a maximum time

frame for completing repairs unless replacement equipment has been ordered. The department worked with the Stakeholders to draft Section 304 of the rule to include leak inspections for "equipment used to transfer or apply VOC-containing finishing materials." In addition, monthly leak inspection is now required. Leak repair specifies the first attempt to repair is to be made within five days of detection with final repairs completed within fifteen days. Additional items were added in the final repair section. Options to meet the final repair time frame also include the option of removing the leaking equipment from service and an option of replacing the leaking equipment with a new purchase within three months of leak detection. Section 501.4 identifies the information that is required to document VOC leak detection and any required repairs. Stakeholders requested that the rule list out the specific information required for the inspection records. The department added a list to clarify the VOC leak detection and repair requirements for the owner or operator as well as for inspection purposes.

EMPLOYEE TRAINING REQUIREMENTS

Section 403 (Annual Operator Training Requirements to Reduce VOC Emissions) includes training requirements for employees. CTG Section 5.3.3 General Work Practice Requirements[1] (pg 5-14) outlines the minimum requirements for a training program. The CTG recommends annual training that includes coating application, cleaning and washoff techniques, proper equipment operation, methods to reduce solvent usage, and proper management of VOC waste materials. Stakeholders requested this section be clearly identified to be applicable to VOC-containing materials only. Stakeholders were concerned facility operations that did not involve VOC-containing materials may be noted as being in non-compliance during an inspection. The department revised the section title to be specific to VOC emissions. In addition, the department included specific training as recommended in the CTG. The department is allowing up to six months after the rule adoption for facilities to come into compliance with the rule revisions. The department added Section 501.5 (Annual Operator Training Records Required by Section 403 of this Rule) to list out the specific requirements for the training recordkeeping. The list clarified the employee training requirements for the owner or operator as well as for inspection purposes.

Section 100 Issues Raised and Discussed

Section 100, Table 342-1 (Applicable Standard Industrial Classification (SIC) Codes) was added as a convenience to the reader. Stakeholders and department staff agreed that the addition of the table with the SIC title will make it easier to identify the type of woodworking to which the rule applies. Since the definition of WOOD FURNITURE AND FIXTURES in Section 236 of the rule lists the SIC numbers to identify what constitutes wood furniture and fixtures and therefore as to what Rule 342 applies, the department included such SIC in the Applicability section of the rule. Although SIC codes have been updated to North American Industry Classification System (NAICS), the department did not include NAICS in Rule 342. Rule 342 was revised to be consistent with the CTG; the CTG uses SIC codes as the means by which to determine applicability; therefore, the department did not include NAICS in Rule 342.

The department added Section 103 (Exemptions) and deleted Section 307 from the current rule. The exemptions described in current Rule 342, Section 307 were difficult to locate within the rule. Stakeholders and department staff agreed that moving the exemptions to the beginning of the rule made it easier to identify rule applicability to a facility. In addition, Stakeholders requested that the department clarify in the exemption section that sources subject to Rule 342 are exempt from other Maricopa County Air Pollution Control Regulations. The department added Section 103.1(c) to address this concern.

Section 200 Issues Raised and Discussed

The previous rule definition of CERTIFIED PRODUCT DATA SHEET (CPDS) required that "…an officer of a coating supplying operation…" sign the CPDS. Stakeholders stated that the suppliers do not sign the CPDS that accompany the VOC-containing materials creating a situation where the facility cannot comply with the rule as written. The CPDS definition was taken from the definitions in the CTG Model Rule language. In the years since the CTG was issued, manufacturers and suppliers have included the VOC content information on labels and on product information supplied to the facilities. The American Coatings Association supported the suggestion to remove the signature requirement for the CPDS. Further discussion asked if the definition was even needed in the rule. Since the only reference to a CPDS was in Appendix A to Rule 342, the department deleted the definition of "CPDS" from Section 200 and added the definition of "CPDS" to Appendix A to Rule 342.

The definition of a HIGH-VOLUME, LOW PRESSURE SPRAY GUN (HVLP) was added. At the time the CTG was written, the "disadvantage of HVLP systems in general is that the

HVLP systems are reportedly not always able to apply finishes as quickly as the other spray techniques."[1] (pg. 2-25) Since the HVLP spray gun operated at a 10 psi, a psi at or below a low pressure spray gun, it was assumed that by defining LOW PRESSURE SPRAY GUN, an HVLP gun would be included in the definition. Since the issuance of the CTG, manufacturers have continued to refine the HVLP spray gun. It is now the most common type of spray gun in use and considered the industry standard in which to measure spray gun efficiency against. The inclusion of the definition of HVLP spray gun provides language consistent with current industry and manufacturing terms. In addition to the addition of the definition of HVLP, Stakeholders requested referencing HVLP spray guns whenever low pressure spray guns were specified in the rule. The department added the definition of HVLP spray gun, retained the definition of LOW PRESSURE SPRAY GUN, and included references to HVLP spray guns where appropriate in the rule.

Stakeholders requested that the definition of WORKING DAY be revised to limit the definition to when VOC-containing material is used. Stakeholders stated that there are times when "manufacturing" is taking place, but no VOC-containing materials are being used. Examples of these types of "manufacturing" operations include the prep work, such as cutting and sanding, of wood materials. Revising the definition to include just the operations involving VOC-containing material would follow the rule's intent and applicability as stated in Section 100 of the rule. Since the rule does not cover the emissions of particulate matter and does limit the emissions to VOC emissions, the department revised the definition of WORKING DAY to a day or days when "…the application of VOC-containing finishing material [is applied] to wood furniture or fixtures."

Section 300 Issues Raised and Discussed

The department originally proposed to reduce the VOC emission limits for all coating types. After further review (refer to "RACT Issues Raised and Discussed" section above) the current VOC emission limits were retained. Table 342-2 was revised to clarify the emission limits for specific types of coatings and includes the VOC limits for strippable booth coating and low VOC topcoats.

Section 304 was revised to add requirements for VOC Leak Detection and Repair standards. Refer to "RACT Issues Raised and Discussed" section above for a detailed discussion.

Section 305 was renumbered to Section 306 and to specify that the section is applicable to the handling and disposal of VOC-containing materials. Stakeholders expressed concerns that non-VOC-containing materials may be noted as being in non-compliance during an inspection. There was concern that Section 305.1 (Use and Storage) was unclear as to when a material is considered "in use". The department considered this issue and revised the provision in Rule 342, Section 306 to specify that storage containers for VOC-containing materials must be covered when not in use.

Section 306 included requirements for manufacturers of wood furniture coatings and not to stationary sources. The department has authority (under Arizona Revised Statutes) to regulate stationary sources of air pollution, not manufacturers of coatings. Therefore Section 306 was deleted in its entirety.

Section 307 was deleted in its entirety. The exemptions are now included in Section 103 of the Rule 342. Refer to the detailed discussion in above "Section 100 Issues Raised and Discussed".

Section 400 Issues Raised and Discussed

Section 401.2 was revised to delete the past compliance dates. The requirement stated in Section 401.2(b) is now incorporated into the main paragraph in Section 401.2. Section 401.2(a) was deleted since the compliance date has passed.

Section 403 (Gun Tagging Requirements) is deleted. Gun tagging requirements are no longer needed.

Section 403 (Annual Operator Training Requirements to Reduce VOC Emissions) includes training requirements for employees. Section 5.3.3 "General Work Practice Requirements" of the CTG[1] (pg 5-14) outlines the minimum requirements for a training program. Refer to "RACT Issues Raised and Discussed" section above for a detailed discussion. The department added specific training requirements as recommended in the CTG and is allowing up to six months after rule adoption for facilities to come into compliance with the training requirements as stated in the rule revisions.

Section 500 Issues Raised and Discussed

Section 501.1 was revised to specify that a current list of all VOC-containing material be updated by the end of the following month. Section 501.1(b) (How to Express VOC Content) and Section 501.1(c) (Acceptable Format) are deleted. Section 501.1(d) (Mix Ratios) is

retained, re-numbered, and clarified; 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.

Section 501.4 (Monthly VOC Leak Detection Inspection and Repair Records) identifies the information that is now required to document VOC leak detection and any required repairs. Stakeholders requested that the rule list out the specific information that is required for the inspection records. This list will make it clear for the owner or operator as well as for inspection purposes. Refer to "RACT Issues Raised and Discussed" section above for a detailed discussion.

The department added Section 501.5 (Annual Operator Training Records Required by Section 403 of this Rule) to list out the specific requirements for the training recordkeeping. This list will make it clear for the owner or operator as well as for inspection purposes.

Appendix A(d)(1) definitions were revised to include the definition of CERTIFIED PRODUCT DATA SHEET (CPDS). Stakeholders questioned if the definition of a CPDS was even needed in the rule. Appendix A to Rule 342 does reference the certified product data sheet. The Stakeholders and department agreed to delete the definition from Section 200 and added CERTIFIED PRODUCT DATA SHEET to the definitions in Appendix A to Rule 342.

The department added Table 342-3 (Formula 2 Neutral Point VOC Content of Coating) in Appendix A(d)(6). The department felt a table would be easier to read to determine the neutral point for the various coatings; the department did not change the VOC limits.

The Green Tag requirements in Appendix B(d)(2) were deleted for consistency throughout the rule. The heading for Appendix B(e)(1) (Housekeeping Functions) was revised. Stakeholders requested that "Keep Coatings…" be changed to "Keep VOC-Containing Materials…", so the header will read "Keep VOC-Containing Materials, Cleaners, & Waste-Materials Covered".

The department clarified Appendix C to Rule 342(d) regarding the compliance schedule for Emission Control Systems (ECS). The section addresses all emissions that are vented to an ECS and does not apply to millwork.

Description of Amendments:

The department revised the following throughout the rule:

- Renumbered the sections to reflect additions or deletions
- Changed "subsection" to "section"
- Deleted "no person" and inserted "an owner or operator"
- Added references throughout the rule to HVLP spray guns where ever requirements for low-pressure spray guns are cited
- Deleted the duplicate Section 307.2(e) and Errata Note 1
- Added the title of test methods
- Deleted the past compliance dates
- Included English measurements followed by metric measurements in parenthesis
- Deleted references to "red" and "green" tags for spray guns

Revisions to Section 100:

- Added Table 342-1 (Applicable Standard Industrial Classification Codes)
- Added Section 103 (Exemptions)

Revisions to Section 200:

- Deleted the definition of CERTIFIED PRODUCT DATA SHEET
- Added the definition of HIGH-VOLUME, LOW PRESSURE SPRAY GUN (HVLP)
- Revised the definition of KILOGRAMS VOC PER KILOGRAM OF COATING SOLIDS
- Revised the definition of VOC SOLVENT
- Revised the definition of WORKING DAY

Revisions to Section 300:

- Revised the table in Section 301.1
- Revised the wording in Section 301.1 and delete 301.1(a) and (b)
- Deleted section 301.1(c)
- Revised the wording in Section 302.1
- Added Section 304 (VOC Leak Detection and Repair)
- Added the wording in Section 305
- Deleted Section 307

Revisions to Section 400:

- Deleted past compliance dates in Section 401
- Revised the wording in Section 401.2
- Revised Section 403 (Gun Tagging Requirements)
- Added Section 403 (Annual Operator Training Requirements to Reduce VOC Emissions)

Revisions to Section 500:

- Revised Section 501.1(b) (List Maximum VOC Content of Finishing Material as Applied)
- Deleted Section 501.1(b) (How to Express VOC Content)
- Deleted Section 501.1(c) (Acceptable Format)
- Deleted Section 501.1(d) (Mix Ratio)
- Added Section 501.4 (Monthly VOC Leak Detection Inspection and Repair Records)
- Added Section 501.5 (Annual Operator Training Records Required by Section 403 of this Rule)
- Revised Section 502 (Compliance Determination-Test Methods)

Revisions to Appendix A:
- Added the definition of CERTIFIED PRODUCT DATA SHEET to Appendix A(d)(1)
- Added Table 342-3 (Formula 2 Neutral Point VOC Content of Coating) in Section d(6)

Revisions to Appendix B:
- Revised the text in Section B(e)(1) (Housekeeping Functions) to match the text in Sections 306.1 (Handling and Disposal of VOC-Containing Materials-Use and Storage) and 306.2 (Handling and Disposal of VOC-Containing Materials-Disposal of VOC and VOC-Containing Material)
- Revised the text in Section B(e)(2) (Housekeeping Functions) to match the text in Section 305.1 (Cleanup and Cleaning Supply and Application Equipment-Booth Cleaning)
- Revised the title of Section d(2) (Conventional Spray Gun Restriction)
- Deleted **Section d(2)(a) (Green Tag Requirements)**

Revisions to Appendix C:
- Clarified (d) regarding the compliance schedule for Emission Control Systems (ECS). The section addresses all emissions that are vented to an ECS and does not apply to millwork.

References Cited:

1. "Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations", EPA-453/R-96-007, April 1996.
2. Arizona Administrative Register, 1 A.A.R. 100, February 17, 1995.
3. Maricopa County Clerk of the Board Certified Minutes, February 15, 1995.
4. Maricopa County Clerk of the Board Certified Minutes, April 03, 1996.
5. Arizona Administrative Register, 2 A.A.R. 4305, October 18, 1996.
6. Maricopa County Clerk of the Board Certified Minutes, November 20, 1996.
7. Arizona Administrative Register, 19 A.A.R. 3611, November 22, 2013.
8. Department email between Cheri Dale, Doug Kober and Philip McNeely, October 27, 2015.
9. Department email from David Darling, American Coatings Association, September 01, 2015.

7. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any Board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
   - **(a)** Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
   - **(b)** Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any Board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. The County failed to meet 2008 8-hour ozone standard by the marginal area attainment date of July 20, 2015. The EPA issued a final rule, effective June 3, 2016, reclassifying the Maricopa County area to "moderate" (published at 86 FR 26697, May 4, 2016). Further, a portion of the County was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the county to continue to maintain the measures and requirements that allowed the county to attain that standard. Revisions to Rule 342 addressed the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The amendments in Rule 342 included Reasonably Available Control Technology (RACT).

The department complies with A.R.S. § 49-112(B) in that the amendments to Rule 342 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any Board or commission authorized to adopt rules pursuant to Title 49, address the peculiar local conditions in Maricopa County, are authorized under A.R.S. Title 49, Chapter 3, Article 3, and are not in lieu of a state program.

8. **Documents or studies referenced and/or reviewed for this rulemaking:**

Not applicable

9. **Showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**

Not applicable

10. **Summary of the economic, small business, and consumer impact:**

The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055. The economic summary is based on the number of Title V and Non-Title V permits issued by the Maricopa County Air Quality Department.

An identification of the rulemaking.

This rulemaking revised Rule 342 (Coating Wood Furniture and Fixtures).

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.

The persons who are directly affected by and bear the costs of this rulemaking will be facilities in Maricopa County that own or operate a facility in which the surface preparation and coating of wood furniture and fixtures takes place. The department has issued a Title V permit or Non-Title V permit to 67 facilities subject to Rule 342.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**

The department anticipates that some of the permitted facilities might incur costs for VOC leak detection and repair (Sections 300 and 500), annual training requirements (Section 400), and associated recordkeeping (Section 500). These costs are described in more detail in Section 9(c) below.

Rule 342 revisions included several changes that are highly likely to ease the regulatory burden in terms of the number of entities regulated under the Rule or the amount of time required to comply with the Rule:

- Section 103.1 exempts sources subject to Rule 342 from Rule 330 (Volatile Organic Compounds) and Rule 336 (Surface Coating Compounds);
- Section 306 is deleted; thus removing all coatings manufacturers from being subject to Rule 342;
- Section 403 is deleted; spray gun tagging is no longer required.

It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. The benefits of the rule revision are anticipated to be a result of the following:

- The addition and clarification of Rule 342 text in order to meet the Control Techniques Guideline (CTG) for this rule "Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations", April 1996;
- The addition of exemptions to Section 100 of Rule 342;
- The addition and revision of definitions found in Section 200 of Rule 342;

The revision of Section 300 included the redesign of the table in Section 301 for easier reading;

- Clarification of the use of spray guns;
- Clarification of the requirements for handling and disposal of VOC-containing materials;

Revision of the compliance schedule in Section 400 of Rule 342;

- The addition of annual operator training requirements to Section 400 of Rule 342;
- The revision of the finishing material list in Section 500 of Rule 342;
- The modification of the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The Rule 342 revisions could result in the subject entities incurring costs for training, leak detection, and recordkeeping. In order not to underestimate the potential impacts of the Rule 342 revisions, a cost analysis was conducted that included the following assumptions:

- All facilities incur training, leak detection, and recordkeeping costs. That is, for the purpose of not underestimating the costs with the rule revisions, the department assumed that no permitted facility had in-house training prior to the Rule 342 revisions.
- Training New Employees. The owner/operator spends 30 minutes developing a training checklist, two hours in training the new employee during which the owner/operator will use the checklist to ensure all topics are covered, and spends 5 minutes to place the checklist in the employee's file when completed.
- Annual Refresher Training. The owner/operator is assumed to use the checklist to ensure he/she addresses all parts of the training. Other assumptions made to estimate costs: a single piece of paper is circulated for employees to sign, documenting that they received the annual training; the owner/operator takes 5 minutes to file the annotated checklist and sign-in sheet; the annual refresher training is conducted at the facility; and for a 30-minute refresher training, the estimated costs include 30 minutes for each employee as well as the owner/operator.
- Leak Inspection Program. For the purpose of estimating costs associated with the Rule 342 revisions, these assumptions were made: The owner/operator spends 60 minutes to list each piece of equipment and its specific checks and another 15 minutes generating 12 copies (one for each month) and placing these in a storage folder; and each month, a worker is assumed to spend 45 minutes going through the leak inspection checklist and performing the checks, 15 minutes to update the records for any repairs/ replacements done during the month, and 5 minutes to file the copy.

The economic analysis used the 25th percentile, average, and 90th percentile industry wages in Maricopa County for the new employee, average employee, and owner/operator. To estimate potential costs to a business, it was assumed that in the first year that rule revisions are in effect, every business hires a new employee, develops training for new and existing employees, conducts the training, develops the leak inspection program, conducts 12 monthly inspections, and incurs the recordkeeping costs for training and leak detection. Costs differ by business depending on the number of employees that receive the annual training. First-year costs are used in the economic analysis. Subsequent years will not require the development costs for the training and leak inspection program.

Table 1 illustrates the cost estimation calculations for a business with 10 employees in the first year of the proposed rule revisions. In this case, the cost is about $315 for a facility

that has no training of new hires, no annual refresher training for all employees, and no leak detection program.

Table 1. Training, Leak Inspection, and Recordkeeping Costs—Example First-Year Costs

Cost Element	EstimatedCost
New Hire Training	$63.77
Leak Detection-Checklist Development	$22.48
Leak Detection-Inspection andRecordkeeping	$155.22
Annual Refresher Training--Trainer	$13.49
Per-Employee Cost	$5.97
Number of Employees	10
Refresher Training Costs	$59.70
Costs in Impact Analysis	$314.66

A leak inspection program and employee training would benefit a business by minimizing material lost through the leak as well as any imperfections caused by the malfunctioning equipment. It was assumed that most, if not all, businesses would have a leak inspection program in place because it is cost-effective to do so. Facilities to which Rule 342 applies would also benefit from the increased clarity of the rule to reduce non-compliance.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

Of the 67 facilities with a Title V or Non-Title V permit, 8 belong to non-commercial entities such as educational or medical facilities, airport authorities, a military air force base, and a governmental entity. The estimated cost for any of these noncommercial entities is small compared to its operating budget. As such, the department projects no discernable impacts on the noncommercial facilities.

The department examined the impacts on commercial facilities through two metrics: the ratio of first-year costs to (a) annual revenue and (b) projected net income. The data source for revenues is the location/business-specific data in the *Demographics Now* commercial database. To estimate net income, the revenues were multiplied by the ratio of net income to revenues reported in IRS statistics for the wood product manufacturing industry. The national average is that net income is 3.9 percent of revenues for all businesses in the industry including businesses with no positive net income. The economic analysis indicates that, under the proposed revisions, the maximum impact was about one-quarter of one percent (0.24 percent) of revenues. All but five businesses showed less than a 3 percent reduction in net income as a result of potential incremental costs for complying with the Rule 342 revisions.

The aggregate estimated first-year costs for all commercial facilities is slightly less than $29,000. The U.S. Commerce Department, Bureau of Economic Analysis (BEA) developed the Regional Input-Output Modeling System (RIMS II) to estimate the loss in output, earnings, and employment associated with spending increases/decreases by industry and region. For this analysis, the department used the multipliers for the furniture and related product manufacturing industry in Maricopa Country. The department compared the estimated losses in output, earnings, and employment against the Gross Domestic Product (GDP) for durable goods manufacturing in the Phoenix-Mesa-Glendale Metropolitan Statistical Area (estimated by BEA), annual payroll data for wood furniture fabrication and coating from the Census County Business Patterns (CPB) data for Maricopa County, the employment data from the same CPB dataset, and the Bureau of Labor Statistics data on labor force and unemployment rate for Maricopa County, respectively. The aggregate costs of Rule 342 revisions lead to no discernable impact on output, employment, or unemployment rate in Maricopa County. The potential change in earnings is less than 0.07 percent.

A statement of the probable impact of the rulemaking on small businesses.

The economic analysis indicates that, under the proposed revisions, the maximum impact was about one-quarter of one percent (0.24 percent) of revenues for small businesses. Five small businesses showed more than a 3 percent reduction and less than a 6.5 percent in net income as a result of potential incremental costs for complying with the Rule 342 revisions. The actual impacts would be less because the comparison of costs to net

income is made with pre-tax costs and not after-tax costs and could be lessened by any training programs currently in place.

(a) **An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County with surface preparation and coating of wood furniture and fixtures that have either fewer than 100 employees or less than $4 million in revenues for the most recent fiscal year. Of the 67 facilities with a Title V or Non-Title V permit, 8 are non-commercial and of the 59 commercial businesses, 51 are considered small.

(b) **The administrative and other costs required for compliance with the rulemaking.**

The costs to comply with the annual refresher training in the proposed rule revisions will vary for each business depending on the number of employees. The department estimated that the first-year cost for a business with 10 employees to comply with all administrative and other costs from the Rule 342 revisions would be about $315. The aggregate estimated first-year costs for all commercial facilities is slightly less than $29,000.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**

By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**

Given that the maximum impact on commercial entities is about 0.36 percent of revenues, even a price increase to recover the costs associated with the Rule 342 revisions would not be discernable to consumers. Thus, the department projects no discernable impacts on consumers.

A statement of the probable effect on state revenues.

With no discernable costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability. The department also examined an alternative scenario in which the owner/operator successfully completes an on-line training class and uses the material in training the other staff. This alternative was more expensive and had less quantifiable benefits such as reduced VOC emissions. Thus, the department selected the less burdensome alternative.

11. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name: Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, AZ 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

12. **Description of the changes between the proposed rule, including supplemental notices and final rule:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R. 1184), the department added the following amendments:

- Metric equivalents were included to provide consistency throughout the rule.
- Section 504 (Compliance Determination-Test Methods Incorporated by Reference): Included text that allows for the use of alternative test methods to determine compliance with the rule and that allows test methods as approved by the Administrator to be used and clarified the provision regarding when more than one test method is permitted for a compliance determination.
- Appendix A, Section b(1): The metric equivalent of 25 tons was changed to 22.7 megagrams (Mg) to reflect the accurate conversion of tons to megagrams.

13. **Summary of the comments made regarding the rule and the department response to them:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R. 1184), the department received no comments.

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

Not applicable

15. **Incorporations by reference and their location in the rule:**

The following test methods are incorporated by reference in Rule 342, Section 502:

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)

The following test methods are incorporated by reference in Rule 342, Appendix C to Rule 342:

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)

EPA Test Method 18—Measurement of Gaseous Organic Compound Emissions by Gas Chromatography

"Guidelines for Determining Capture Efficiency" January 9, 1995, Candace Sorrell, Source Characterization Group A, Office of Air Quality Planning and Standards, US EPA.

EPA Test Method 2—Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)

EPA Test Method 2A—Direct Measurement of Gas Volume Through Pipes and Small Ducts

EPA Test Method 2C - Determination of Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts (Standard Pitot Tube)

EPA Test Method 2D—Measurement of Gas Volume Flow Rates in Small Pipes and Ducts

16. **Was this rule previously an emergency rule?**

No

17. **Full text of the rule follows:**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 342
COATING WOOD FURNITURE AND FIXTURES
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Adopted 04/03/1996; Revised 11/20/1996; Revised 09/25/2013; and **Revised 11/02/2016**

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, ~~consult subsection 307.2d~~ 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 2.3 lb 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, ~~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 CERTIFIED PRODUCT DATA SHEET: A document, signed by an officer of a coating supplying operation, stating precisely the maximum VOC content of a particular coating as supplied.~~

~~207~~ **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.

~~208~~ **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.

~~209~~ **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.

~~210~~ **209** **DAY:** A period of 24 consecutive hours beginning at midnight.

~~211~~ **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.

~~212~~ **211** **ELECTROSTATIC APPLICATION:** A method of applying coating by electrically charging coating droplets or particles causing their deposition onto a substrate by electrostatic attraction.

~~213~~ **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.

~~214~~ **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 ~~238~~ 236 of this rule.

~~215~~ **214** **FAUX FINISH:** A finish intended to simulate a surface other than wood, including, but not limited to, stone, sand, metal, fur and leather.

~~216~~ **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.

~~217~~ **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. ~~Abbreviations used include kg VOC/kg solids (lb VOC/lb solids) or simply kg/kg (lb/lb).~~

219 **LOW PRESSURE SPRAY GUN**: An air-atomized spray gun which by design functions best at ~~tip~~ air cap pressures below 10 psig (0.7 bar) measured according to ~~subsection~~ 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 ~~tip~~ air cap pressure exceeds 12 psig (0.8 bar) in measurements done pursuant to ~~subsection 502.2~~ 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 ~~subsection 502.3~~ 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) ~~numbers~~ code 2434, 2511, 2512, 2515, 2517, 2519, 2521, 2531, or 2541~~, or 2599 as well as wood-product on convertible furniture under SIC number 2515~~.

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~~the application of VOC-containing finishing material to wood furniture or fixtures.

SECTION 300 – STANDARDS

301 LIMITATIONS – VOC CONTENT:

301.1 ~~No person~~ 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 pounds of VOC per pound of solids (kg VOC/kg solids) or to the grams of VOC per liter~~ the VOC limits in one of the columns in Table 342-2 below:

a. ~~General VOC Limits of Coatings~~

~~Table1~~

	~~Column A~~ ~~Lb VOC/lb solids~~	~~Column B~~ ~~Grams VOC/liter **~~
~~Topcoat~~	~~1.8~~	~~635~~
~~Sealer~~	~~1.9~~	~~645~~
~~Acid-cured, alkyd amino topcoat~~	~~2.0~~	~~655~~
~~Acid-cured, alkyd amino vinyl sealer~~	~~2.3~~	~~680~~

~~**less non-precursor compounds & water~~

Table 342-2: General VOC Limits of Coatings

Coating Type	LbVOC/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 ConversionVarnish 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

*** less non-precursor compounds and water**

b. ~~Option: Lower VOC topcoat and Unlimited Sealer: There is no VOC limit on sealer when the sealer's topcoat does not exceed 0.8 lb VOC/lb (0.8 kg/kg).~~

c. ~~Coatings with no VOC limits: Stains, washcoats, glazes, toners, inks, and other coatings not specified in this subsection 301.1 nor in subsection 301.2 have no VOC limits.~~

~~301.2~~ ~~Strippable Booth Coatings: No person shall use a strippable booth coating unless, as applied, the coating has either no more than 0.8 lb VOC/lb solids or no more than 3.0 lb/gal (360 g/l)lessnon- precursor volatile compounds.~~

~~301.3~~ **301.2 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~~ Section 301.1 of this rule if the owner or operator complies with all provisions in this rule's Appendix C: ALTERNATIVECOMPLIANCEWITHSE CTION301VOC LIMITS AND/OR SECTION 302SPRAY-METHODRESTRICTIONSBYUSING AN EMISSIONS CONTROL DEVICE and with the other applicable provisions of this rule.

~~301.4~~ **301.3 Averaging:** An owner or operator of a larger furniture coating facility meeting the applicabilityrequirements of subsection b., in this rule's Appendix A: AN AVERAGINGALTERNATIVE, may comply with~~subsection 301.1a.~~ Section301.1 of this rule bycomplying with Averaging-Formula 1 or Averaging-Formula 2 in Appendix A and bycomplying with all other applicable provisions of Appendix A.

~~301.5~~ **301.4 Smaller Source Option:** The owner or operator of a facility that has emitted ~~2~~ two (2) or more tons (1.8 Mg) but less than ~~10~~ 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 ~~2~~ two (2) tons (1.8 Mg) of VOC per year may be allowed exemptions pursuant to ~~subsection307.2d~~ Section103.2(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: ~~No person~~ 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 ~~of possession and use~~ 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 ~~applicable subsections of Section 307~~ Section 103 of this rule, or to any specific system which is approved by the Administrator as ~~having a transfer efficiency consistently exceeding 64%.~~ HVLP-equivalent.

302.2 Limitation of Air-Atomized Spray Gun other than Low Pressure or HVLP Spray Guns: ~~No person~~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) ~~such~~The application is performed after completion of the entire finishing operation; or

(2) ~~such~~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 ~~5%~~five percent (5%) of all coating pursuant to ~~subsection 307.2.e~~Section 103.2(e)(1) of this rule.

303 OPERATION AND MAINTENANCE: ~~Any person~~ 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.

~~304~~ **305 CLEANUP AND CLEANING SUPPLY AND APPLICATION EQUIPMENT:**

~~304.1~~ **305.1 Booth Cleaning:** ~~No person~~An owner or operator shall not clean spray booth components using aVOC-containing solvent containing more than ~~8.0~~eight percent (8.0%) by weight of VOC, including water and non-precursor compounds, except for: conveyors; continuouscoaters and their enclosures; and metal filters and while refurbishing spray booths. If the ~~spray~~strippable booth coating is being replaced, ~~a person~~ an owner or operator shall not use ~~no~~ more than 1.0 gallon (3.8 liters) VOC-containing solvent per booth to clean the spray booth.

~~304.2~~ **305.2 Cleaning Guns and Lines:** ~~A person~~ 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 ~~immediately~~ closed or covered after all the VOC-containing solvent has been collected, and shall remain so except when in use.

~~305~~ **306 HANDLING AND DISPOSAL OF VOC-CONTAINING MATERIALS:**

~~305.1~~ **306.1 Use and Storage:** ~~A person~~ 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. ~~A person~~ An owner or operator shall store VOC-containing finishing and cleaning materials in closed containers.

~~305.2~~ **306.2 Disposal of VOC and VOC-Containing Material:** ~~A person~~ 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 are legibly labeled with their contents and~~ which shall remain covered ~~when not in use~~ except when contents are being added or removed.

~~306 DESIGNATION OF VOC-CONTENT REQUIREMENT: Effective May 3, 1996, a manufacturer of wood-furniture 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. For topcoats and sealers, this shall be in pounds of VOC per pound of coating solids (g/g) or in pounds VOC per gallon (g/lg) less water and non-precursor volatile 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 this rule.~~

~~b. The following shall be exempt from subsection 301.1 and Section 302:~~

~~(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): prepackaged aerosol spray cans which are not used for touch-up or repair, metal leaf finishes, and faux finishes.~~

~~(2) Refinishing, Replacement, and Custom Replica Furniture Operations: Any refinishing operation necessary for preservation, to return the furniture or fixture to original condition, to replace missing furniture to produce a matching set, or to produce custom replica furniture.~~

~~c. The coating for a single resin-layer finish which does not exceed a VOC limit of 3 lb VOC/lb solids for completed finishes up to 3 dry mils thickness or does not exceed 2.3 lb/lb for finishes over 3 dry mils is exempt from the VOC limits of subsection 301.1 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 2.3 lb VOC/lb 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 subsections 307.2d (1) and (2) of this rule following, is exempt from all provisions of this rule except for Section 303 "Operation & 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 VOC-solvent 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.~~

~~e. Using Conventional and other 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 1 lb VOC/lb 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 1 lb VOC/lb. 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.~~

~~Errata Note 1~~[1]

~~e. Using Conventional and other 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 1 lb VOC/lb 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 1 lb VOC/lb. 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 FOR APPENDIX C: The following schedule applies, with exceptions for an Emission Control System provided in Appendix C.

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 ~~and have submitted~~ 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.

Other Sources: ~~The schedule follows for any~~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.

~~a. A facility 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:

~~1 1 This errata note is not part of Rule 342. For the reader's convenience, the second subsection 307.2e. was an earlier draft of the section not intended to be left in the rule. It will be removed for the next revision of this rule.~~

402.1 Status with Respect to Rules 330 (Volatile Organic Compounds) and 336 (Surface Coating Operations): ~~No~~ 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~~ 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 GUN TAGGING REQUIREMENTS: An owner or operator shall use a red 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 subsection 307.2e.~~

403 ANNUAL OPERATOR TRAINING REQUIREMENTS TO REDUCE VOC EMISSIONS:

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.

Employees hired after [adoption date of this rule], shall be trained upon hiring, unless previously trained within the past year.

Employees hired prior to [adoption date of this rule], shall be trained by [six months after adoption date of this rule].

Employees shall be given refresher training annually.

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.

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. How to Express VOC Content:~~

~~(1) Non-Coatings: Use grams VOC/liter or lb VOC/gal. for reducers, thinners, cleaners, etc.~~

~~(2) Stains: Use lb VOC/gal.~~

~~(3) Topcoats and Sealers: Use either lbs VOC/lb solids or g VOC/liter (lb VOC/gal) except:~~

~~(a) Any topcoat or sealer sprayed with a conventional or other restricted use gun shall be expressed in lbs VOC/lb solids.~~

~~(b) Two VOC content values must appear for each topcoat and each sealer that is expressed as grams VOC per liter or pounds VOC per gallon: both grams VOC/liter (lb VOC/gal) including water and non-precursor organic compounds, and grams VOC/liter (lb VOC/gal) less water and non-precursor organic compounds.~~

~~(4) Other Coatings: Use grams/liter (or lb/gal) or lbs VOC/lb solids for coatings that are neither sealers nor topcoats, such as washcoats, glazes, etc.~~

~~c. Acceptable Format: VOC-containing materials shall be listed neatly and completely. The following is an example of an acceptable method: Example: Identify and list each VOC-containing material in one of 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 material, record the VOC-content found on the container, an MSDS, an invoice, or other source.~~

~~d.~~ **b. Mix Ratios:** A current list of VOC-containing mix ratios for catalyst/hardeners shall be maintained if ~~of~~ the manufacturer's recommended mix ratio is not followed or ~~of components, including but not limited to adding reducers and catalyst/hardeners, except~~ when the manufacturer has no recommendations ~~for any additions~~.

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 ~~304~~ 305 of this rule shall be totaled and logged by the end of the following ~~workday~~ working day. VOC content shall be entered for each such material.

b. Monthly Update for Materials Compliant with Sections 301 and ~~304~~ 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 ~~grams/liter (lb/gal)~~ 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 ~~type~~ name of ~~organic~~ VOC-containing solvent used each month for stripping and cleaning.

(4) The quantity of ~~organic~~ 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.

Disposal/Recovery: An owner or operator shall keep records of disposal/recovery of all VOC-containing materials.

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.

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: ~~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.~~ 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.

~~Measurement of VOC content, pursuant to the VOC limits of subsections 301.1, 301.2, and 302.2, and subsections 304.1 and 307.2c., 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.~~

502.1 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 ~~tip~~ air cap ~~and air horns~~ 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 ~~subsection 307.2c~~ 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.

APPENDIX A TO RULE 342
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 ~~subsection~~ 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 (~~21.7~~ 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.

~~(1)~~ **(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.

~~(2)~~ **(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.

~~(3)~~ **(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).

~~(4)~~ **(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.

~~(5)~~ **(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 ~~kg VOC/kg~~ 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	VOCContentNeutralPoint	VOC Content NeutralPoint
Topcoat	1.62 lb VOC/lb solids	1.62k g VOC/kg solids
Sealer coat	1.71 lb VOC/lb solids	1.71kg VOC/kg solids
Washcoat	8.1 lb VOC/lb solids	8.1 kg VOC/kg solids
Basecoat	1.08 lb VOC/lb solids	1.08kg VOC/kg solids
Stain	5.942lb VOC/gallon	0.712 kg VOC/liter

~~The neutral point VOC content for each of the 5 types of coating in Formula 2 is as follows:~~
~~Topcoat - 1.62 kg VOC/kg solids; sealer coat - 1.71; washcoat - 8.1; basecoat - 1.08~~
~~The neutral point for stains is expressed in kilograms VOC per liter of coating - 0.712 kg VOC/liter~~

e. Basic Requirements for all Averaging Regimes:

(1) Entire ~~Workdays~~ **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 ~~workday~~

working day will be the calendar day in which work commences. However, an owner or operator may designate in writing a ~~workday~~ 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 ~~workday~~ working day may be changed if written notification has been given the Control Officer at least five ~~workdays~~ 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 ~~workday~~ 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 ~~kg VOC/kg 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) ~~(1.71 and 1.62, respectively)~~ 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 ~~production~~ working day by midday on the next ~~workday~~ 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 ± 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 ~~facility workdays~~ working days. The Control Officer may request that a hardcopy of the retrieved information be provided him/her by the same clock time, two ~~workdays~~ 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 ~~subsection 301.1~~ 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.

$$0.72 \quad \text{[illegible]}$$

(2) For other coating systems using averaging, Formula 2 shall be used.

$$1.62 \quad 1.71 \quad 8.1 \quad 1.08 \quad 0.712$$

$$\text{[illegible]}$$

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. ERu 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 (TCi) becomes slightly altered to mean the total topcoat solids used of every other topcoat beside the unique topcoat "U":

$$1.62 \quad 1.5 \quad 1.71 \quad 8.1 \quad 1.08 \quad 0.712$$

$$\text{[illegible]}$$

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.

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 ~~subsection~~ 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 ~~tip~~ air cap. ~~Examples: pure HVLP gun; a turbine gun.~~
- An HVLP gun or a turbine gun with 10 psig or less at air cap.
- Airless; includes air-assisted airless.
- An electrostatic system.

(2) ~~Green Tag Option: Restriction on conventional guns and other restricted use guns:~~ **Conventional Spray Gun Restriction:**

(a) ~~Green Tag Requirements: A conventional air-atomized or other restricted use gun shall have a durable and visible green 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 1 lb VOC/lb solids as applied. Coatings which have less than 4.30 lb VOC/gal (515 g/l) minus exempt materials also meet this requirement.~~

(b) ~~Prohibition:~~ No coating over 1 lb 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. ~~("Conventional air-atomized gun" is defined in Section 208. "Restricted use gun" is defined in Section 225.)~~

(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 ~~Coatings~~ **VOC-Containing Materials, 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.~~ 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: ~~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.~~ 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/lb~~ lb VOC/lb solids (kg VOC/kg solids) or ~~lb/gal~~ 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-~~c~~ontaining 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) ~~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.

APPENDIX C TO RULE 342

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 ~~subsections 301.1 and 301.2~~ 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 ~~subsection 302.2~~ 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 ~~10~~ 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 reinstituted 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 ~~subsection 301.3~~ 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 ~~subsection 501.2~~ 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 ~~is~~ are the total facility-wide VOC from all ~~wood coating~~ operations ~~and associated cleaning processes. It includes millwork coating.~~ 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 ~~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, 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 ~~by June 3, 1996,~~ listing dates of completion of increments of progress toward meeting the requirements of ~~subsection 301.3~~ Section 301.2 of this rule.

(b) An O&M Plan for the ECS ~~by November 15, 1996~~.

(2) **Other Sources:** ~~A~~The owner or operator of a wood furniture coating facility shall be in compliance with Section 301 and Section 302 of this rule ~~by November 15, 1996 and with Section 301 by January 15, 1997~~, if ~~its~~the total VOC in each of the years 1990 through 1995 ~~of~~ 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 ~~by June 3, 1996~~, listing the dates of completing the increments of progress toward meeting the requirements of the ~~subsection 301.3~~ Section 301.3 of this rule; and

(b) An O&M Plan for the ECS ~~by January 2, 1997~~.

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 ~~Reference~~ 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, 1001 N. Central Ave., Phoenix, Arizona, 85004.

(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: ~~2, 2A, 2C, or 2D.~~

(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

NOTICE OF FINAL RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 350: STORAGE OF ORGANIC LIQUIDS AT BULK PLANTS AND BULK TERMINALS
PREAMBLE

1. **Rule affected** **Rulemaking action**

Rule 350: Storage of Organic Liquids at Bulk Plants and Bulk Terminals — Amended

2. **Statutory authority for the rulemaking:**

Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. **The effective date of the rule:**

Date of adoption: November 2, 2016

4. **List of public notices addressing this rulemaking:**

Notice of Briefing to Maricopa County Manager: May 2015
Notice of Stakeholder Workshops: June 30, 2015, September 14, 2015, and February 22, 2016
Notice of Maricopa County Board of Health Meeting: April 25, 2016
Notice of Proposed Rulemaking: 22 A.A.R. 1207, May 13, 2016

5. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name: Cheri Dale or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, Arizona 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

6. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary: Rule 350 limits the emission of volatile organic compounds (VOCs) from organic liquids under actual storage conditions. The rule is applicable to bulk storage of organic liquids in a bulk plant or bulk terminal stationary storage tank which is used primarily to fill delivery vessels for both the organic liquid (non-gasoline) and the gasoline industries.
Rule 350 (Storage of Organic Liquids at Bulk Plants and Terminals) was last revised over twenty-five years ago. Technologies have changed over time. The organic liquid (non-gasoline) and gasoline storage and distribution industries use different terminology, definitions and methods of operation. Rule revisions included the separation of organic liquids (non-gasoline) from the gasoline storage requirements. In addition the rule added the organic liquid transfer requirements to Rule 351. The gasoline storage requirements previously in Rule 350 were moved to Rule 351 (Loading of Organic Liquids). The revisions in Rule 350 updated and clarified the county regulatory requirements and authority for the organic liquid

(non-gasoline) industry and the gasoline industry. Revisions to Rule 350 addressed the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS).

In addition, the amendments corrected typographical or other clerical errors; made minor grammatical changes to improve readability or clarity; modified the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or made various other minor changes of a purely editorial nature. As these changes did not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 17 of this notice.

Background: As early at the 1960's, the Maricopa County Health Department (as the department was then called), Air Pollution Control regulations, Section IV, Handling of Materials, Regulation 1, required "Material such as…gasoline or other volatile compounds…be kept, processed, used, and transported in such a manner and by such means that they will not unreasonably leak, escape, evaporate or be otherwise discharged into the ambient air so as to cause or contribute to air pollution…"[1] This early rulemaking established the basis for the current Rule 350. In 1970, the passage of the Clean Air Act established federal air quality standards.

Congress established the basic structure of the Clean Air Act (CAA) in 1970. The CAA requires the U.S. Environmental Protection Agency (EPA) to establish national ambient air quality standards (NAAQS) for common and widespread pollutants based on the most current science available. For areas that were determined to be in nonattainment of the NAAQS, the state was required to adopt federally enforceable state implementation plans (SIP) in order to achieve and maintain air quality and meet the federally established air quality standards (the NAAQS)[2]. The states were responsible for developing and implementing rules that require reasonably available control technology (RACT) for sources of VOCs located in the designated ozone nonattainment areas. Local air agencies were required to establish RACT for source categories not already covered by EPA's Control Techniques Guidelines (CTGs) as well as tighten RACT for source categories for which RACT had already been defined in the NAAQS[3]. The EPA defined RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility" (44 FR 53762; September 17, 1979).

In the 1970's, using the EPA NAAQS and CTGs to identify the established RACT standards, the Maricopa County Bureau of Air Pollution Control (as the department was then called) revised and renumbered the county air pollution rules and regulations. The revised county rules established specific requirements for petroleum products in Regulation III, Rule 33: Storage and Handling of Petroleum Products[4]. This rule established requirements to control vapor loss during storage; submerged filling of tanks; loading dock requirements; and leak proof fill pipe connections.

On March 3, 1978, EPA promulgated a list of ozone nonattainment areas under the provisions of the Clean Air Act, as amended in 1977 (1977 CAA or pre-amended Act). Maricopa County was included on such list 43 FR 8964, March 3, 1978). On February 24, 1984, the EPA notified the Governor of Arizona, that the Maricopa County Air Pollution Control District's (MCAPCD), (as the department was then called) portion of the Arizona SIP was inadequate and requested that deficiencies in the existing SIP be corrected (EPA's SIP-Call, 49 FR 18827, May 3, 1984). The MCAPCD was in the process of revising Rule 33 to create Rules 350, 351, 352, and 353 to address the RACT requirements when the EPA again notified the Governor of Arizona (May 26, 1988) that the MCAPCD's portion of the Arizona SIP was inadequate and requested that deficiencies relating to VOC controls and the application of RACT in the existing SIP be corrected (EPA's second SIP-Call, 53 FR 34500, September 7, 1988).

On November 15, 1990, the Clean Air Act Amendments of 1990 were enacted. In an amended section of the CAA, Congress statutorily adopted the requirement that nonattainment areas fix their deficient RACT rules and established a deadline of May 15, 1991 for states to submit corrections of those deficiencies. The MCAPCD further revised Rules 350, 351, 352, and 353 to meet the RACT standards. Rule 350 (Storage of Organic Liquids at Bulk Plants), revised July 13, 1988, and April 6, 1992, was approved by the EPA effective October 5, 1995 (60 FR 46024). Rule 351(Loading Organic Liquids) revised July 13, 1988 and November 16, 1992, was approved effective October 5, 1995 (60 FR 46024). Rule 352 (Gasoline Delivery Vessel Testing and Use), revised July 13, 1988, and November 16, 1992, was approved effective October 5, 1995, (60 FR 46024). Rule 353 (Transfer of

Gasoline into Stationary Dispensing Tanks) revised July 13, 1988, and April 6, 1992, was approved effective March 4, 1996 (61 FR 3578).

More recently, the EPA developed national emission standards for hazardous air pollutants (NESHAPS) for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities (73 FR 1933, Jan. 10, 2008); a NESHAP for Gasoline-Dispensing Facilities (73 FR 1945, Jan. 10, 2008); and the NESHAP for Organic Liquid Distribution (non-gasoline) (69 FR 5063, Feb. 3, 2004). These NESHAPS are often referred to as the maximum achievable control technology (MACT) standards since they were developed to reflect the maximum achievable degree of HAP emission reduction. New MACT standards required additional or new emissions testing requirements reflecting the new technologies. New and revised test methods and leak detection methods were required in these MACT standards. Although the MACT standards typically apply to large sources, there are test methods and other good practices that are or may be applicable to small area sources of VOC emissions.

Rule 350 Rulemaking Background: The Maricopa County Air Quality Department (department) originally adopted Rule 350 (Storage of Organic Liquids at Bulk Plants and Terminals) and Rule 351(Loading of Organic Liquids) to be inclusive of both non-gasoline and gasoline organic liquids. The purpose of the rules was to control the emission of volatile organic compounds (VOCs) from all organic liquids. These rules were required in order for the county to comply with the reasonably available control technology (RACT) documents and other policy statements published by the EPA. Since that time, the organic liquid (non-gasoline) and the gasoline industry have evolved into two distinct industries. The use of different terminology, definitions and methods of operation has created confusion in the applicability of Rule 350 to each industry. In this rulemaking, the department drafted rules specific to the organic liquid (non-gasoline) storage and distribution industry and for the gasoline storage and distribution industry. This rulemaking did not propose new rules for the industries but rather made revisions to current rules that improved the clarity and enforceability of the regulatory requirements for each industry.

The rule revisions included the separation of the organic liquid (non-gasoline) requirements and the gasoline requirements of Rule 350. The organic liquid (non-gasoline) storage requirements in Rule 350 and the organic liquid "loading" requirements Rule 351 (Loading of Organic Liquids) were combined and into one rule, Rule 350. The gasoline storage requirements in Rule 350 were moved into Rule 351. Along with the separation of the two industry requirements, the department renamed each rule to reflect the rule revisions.

On May 19, 1993, the department issued technical guidance #TG-003 to address a Stakeholder concern that Section 301.2 of Rule 350 requiring a tank to have a pressure vacuum valve set to within 10% of the tank's maximum, safe working pressure. The Stakeholder provided documentation stating the design working pressure should not exceed 1 psig and recommended applying the ½ psia operating pressure as CARB required. Revisions to Rule 350 provided the owner or operator the option of either setting the pressure/vacuum valve on fixed roof tanks within 10% of the tank's maximum working pressure or at 0.5 psia, as included in revised Section 301.1(c) of Rule 350. The department rescinded #TG-003 (May 19, 1993) with this rule revision.

A second technical guidance was issued on March 11, 1998 #TG98-002, addressing the requirement of pressure/vacuum (P/V) valves on both fixed roof and floating roof tanks. Per the discussion in the technical guidance document:

> Both floating-roof tanks and pressure-tanks are designed and engineered to control vapor emissions without the use of pressure/vacuum valves. The use of such a valve would not produce additional emissions control. The rule's authors had no intention of requiring P/V valves on floating roof tanks or pressure tanks, but failed to recognize that the way they constructed the rule would result in this unintended and erroneous interpretation.

The guidance concluded "The subsection 301.2 requirement to have a pressure/vacuum valve does not apply to floating roof tanks or pressure tanks." The department revised Rule 350, Section 301.1(c) to require pressure/vacuum valves on "Each fixed roof stationary storage tank…" This rule revision corrected the omission in the previous rule. The department rescinded #TG98-002 (March 11, 1998) with this rule revision.

In addition, the department revised the rule applicability to include organic liquids (non-gasoline) with a true vapor pressure (TVP) of 0.5 psia. The lowering of the TVP now meets current RACT.

Other revisions included the relocation of any exemptions into Section 100; inclusion of definitions and terms specific to the organic liquid industry; organic liquid regulatory

requirements for the transfer of transfer of the organic liquid; monthly equipment leak inspection requirement; and the addition of optical gas imaging as an alternative work practice to monitor and identify leaking equipment.

Issues Raised and Discussed During This Rulemaking Process:

The department held three Stakeholder workshops: June 29, 2015, September 14, 2016, and February 22, 2016. Stakeholders included representatives from APS, Caljet, CDM Smith, Cemex, City of Glendale, City of Mesa, City of Phoenix, Coastal Transport, EnCore Consulting, Envirosure Solutions, Kiewit, Kinder Morgan, Luke Air Force Base, Pinal County, Ping, Polar Services, SRP, Tamura Environmental, Washington Elementary School, and EPA.

During the workshops, Stakeholders expressed concerns that the proposed Rule 350 would include any organic liquid stored at any site. The purpose and applicability were revised to clarify that the rule was applicable to the storage and transfer of organic liquids at a distribution facility and not at a facility that is the end user of the organic liquid. The rule does not apply to the storage and transfer of organic liquids at a facility that does not distribute the organic liquid to be "consumed by other parties." (Rule 350 definition of "Organic Liquid Distribution Facility") The rule title was also revised to clarify the applicability of the rule. Some definitions pertaining to the gasoline industry were deleted. The definition of GASOLINE was retained in the rule definitions because the exemption section specifically exempts gasoline from the rule. The exemptions were taken from 40 CFR 63.2406, the Organic Liquid Distribution NESHAP. The partial exemptions in Rule 350 were either retained from current Rule 350 or taken from current Rule 351 if they pertained to organic liquid (non-gasoline).

Stakeholders were concerned that the rule would apply to all storage containers used for organic liquids. The department included partial exemptions for organic liquids with a TVP less than 0.5 psia, storage containers with a capacity less than 250 gallons, a pressure tank, a floating roof tank, and gap inspections.

During the workshops, Stakeholders requested the addition or revision of numerous definitions to reflect the rule applicability to the organic liquid industry and not the gasoline industry. The department revised the definitions in the Rule 350 to address this concern.

To further clarify the requirements for organic liquid storage tanks, the department added a table describing tank size and the applicable rule section number that describes the VOC emission control requirements. Stakeholders supported this addition to the rule.

Description of Amendments:

Amended the following throughout the rule:

- Revised the title of the rule to: STORAGE AND TRANSFER OF ORGANIC LIQUIDS (NON-GASOLINE) AT AN ORGANIC LIQUID DISTRIBUTION FACILITY
- Deleted references to gasoline loading and storage
- Changed the word "loading" to "transfer"
- Deleted the word "person" and inserted the words "owner or operator"
- Deleted past compliance dates
- Added or revised specific rule section references

Amended the following in Section 100:

- Revised Section 101 (Purpose) to include the storage and transfer of organic liquid (non-gasoline) at an organic liquid distribution facility
- Revised Section 102 (Applicability) to apply to the bulk storage and transfer of organic liquid (non-gasoline) at an organic liquid distribution facility
- Added Section 103 (Exemptions) to include total exemptions and partial exemptions

Amended the following in Section 200:

- Deleted the definition BULK PLANT
- Deleted the definition BULK TERMINAL
- Deleted the definition DELIVERY VESSEL
- Added the definition CARGO TANK
- Added the definition CONTAINER
- Added the definition EXCESS ORGANIC LIQUID DRAINAGE
- Added the definition EXTERNAL FLOATING ROOF STATIONARY STORAGE TANK
- Deleted the definition GAS TIGHT
- Added the definition INTERNAL FLOATING ROOF STATIONARY STORAGE TANK WITH FIXED COVERING
- Added the definition LEAK FREE

- Deleted the definition LOADING FACILITY
- Revised the definition ORGANIC LIQUID
- Revised the definition SUBMERGED FILL
- Added the definition VAPOR BALANCE SYSTEM
- Added the definition VAPOR COLLECTION/PROCESSING SYSTEM
- Revised the definition VAPOR LOSS CONTROL SYSTEM
- Revised the definition VAPOR TIGHT

Amended the following in Section 300:

- Revised Section 301: Clarified the requirements of an organic liquid stationary storage tank
- Revised Section 301.1: Listed the requirements of a stationary storage tank
- Deleted Section 302: Gasoline Storage Tanks Between 250 and 40,000 Gallons
- Added Section 301.2: Organic Liquid Stationary Storage Tanks with a Capacity of 20,000 Gallons (75,700 l) to less than 40,000 Gallons (151,400 l)
- Renumbered Section 304 to Section 301.3: Listed out requirements of stationary storage tanks with a capacity of 40,000 gallons or more
- Renumbered Section 305 to Section 301.4: Listed out the existing requirements
- Added Table 350-1 Summary of Organic Liquid (Non-Gasoline) Stationary Storage Tank VOC Emission Control Requirements
- Renumbered Section 306 to Section 302: Vapor Loss Control System
- Renumbered Section 307 to Section 302.2: Internal Floating Roof Stationary Storage Tanks with Fixed Covering.
- Renumbered Section 308 to Section 302.4: Vapor Collection/Processing System
- Added Section 303: Equipment Maintenance and Repair
- Added Section 304: General Requirements for the Transfer of Organic Liquid
- Deleted Section 309: Additional Requirements
- Deleted Section 310: Exemptions

Amended the following in Section 400:

- Deleted Section 401: Annual Inspections of External Floating Roof Stationary Storage Tanks
- Deleted Section 402: Annual Inspections of Internal Floating Roof Tanks
- Deleted Section 403: Five-Year, Full Circumference Inspections
- Deleted Section 404: Semi-Annual Inspections by Owner or Operator
- Deleted Section 405: Compliance Schedule
- Added Section 401: Organic Liquid (Non-Gasoline) Storage Tank Inspections
- Added Section 401.1: Semi-annual Inspections by Owner or Operator
- Added Section 401.2: Inspections of External Floating Roof Stationary Storage Tanks
- Added Section 401.3: Inspections of Internal Floating Roof Stationary Storage Tanks with a Fixed Covering
- Added Section 402: Monthly Organic Liquid Transfer Equipment Leak Inspections
- Added Section 403: Organic Liquid (Non-Gasoline) Storage Tank Inspections-Availability to Control Officer
- Added Section 403.1: Annual Inspections of External Floating Roof Tanks
- Added Section 403.2: Annual Inspections of Internal Floating Roof Tanks
- Added Section 403.3: Five-Year, Full Circumference Inspections
- Added Section 404: Other Agencies Requirements

Amended the following in Section 500:

- Deleted Section 501: Vapor Pressure Records
- Deleted Section 502: Compliance Determination Test Methods
- Added Section 501: Monitoring for Leaks
- Added Section 502: Vapor Pressure Records
- Added Section 503: Leak Inspection Records
- Added Section 504: Compliance Inspections
- Added Section 505: Records Retention
- Added Section 506: Compliance Determination-Test Methods

7. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)
When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
   (a) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
   (b) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)
When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.
The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards (NAAQS) for both ozone and particulates. The County failed to meet 2008 8-hour ozone standard by the marginal area attainment date of July 20, 2015. The EPA issued a final rule, effective June 3, 2016, reclassifying the Maricopa County area to "moderate" (published at 86 FR 26697, May 4, 2016). Further, a portion of the County was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the County to continue to maintain the measures and requirements that allowed the County to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM_{10} 24-hour standard. This is the only serious PM_{10} nonattainment area in Arizona. Revisions to Rule 350 address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone NAAQS. The amendments in Rule 350 included Reasonably Available Control Technology (RACT).
The department complies with A.R.S. § 49-112(B) in that the amendments to Rule 350 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49; address the peculiar local conditions in Maricopa County; are authorized under A.R.S. Title 49, Chapter 3, Article 3; and are not in lieu of a state program.

8. **Documents or studies referenced and/or reviewed for this rulemaking:**
Not applicable

9. **Showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**
Not applicable

10. **Summary of the economic, small business, and consumer impact:**
The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055. The economic summary is based on the number of Title V and Non-Title V permits issued by the Maricopa County Air Quality Department.

An identification of the rulemaking.
This rulemaking revised Rule 350 (Storage of Organic Liquids at Bulk Plants and Bulk Terminals). The revised rule is titled: Storage and Transfer of Organic Liquids (Non-Gasoline) at an Organic Liquid Distribution Facility.

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.
The persons who are directly affected by and bear the costs of this rulemaking are facilities in Maricopa County that engage in the bulk storage and transfer of any organic liquid (non-

gasoline) with a vapor pressure 0.5 psia or greater at an organic liquid distribution facility. The department has issued permits to 26 facilities subject to Rule 350, prior to revision.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**

Because this rulemaking did not impose any new compliance burdens on permitted regulated entities or introduce additional regulatory requirements, the department deemed that none of the revisions have potentially significant economic impacts on permitted sources. It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

The assumptions of savings with the rule revisions will be reviewed after rule implementation to confirm their effectiveness. However, the benefits of the rule revision are anticipated to be a result of the following changes:

- Changing the title of the rule to: STORAGE AND TRANSFER OF ORGANIC LIQUIDS (NON-GASOLINE) AT AN ORGANIC LIQUID DISTRIBUTION FACILITY;
- Requiring standards at organic liquid distribution facilities for stationary storage tanks with a capacity greater than 250 gallons for organic liquids with a TVP of 0.5 psia or more;
- Moving requirements originally in Rule 351 that applied to organic liquid (non-gasoline) storage and transfer to revised Rule 350 to consolidate all of the organic liquid requirements in one rule.
- Allowing partial exemptions for organic liquids with a TVP less than 0.5 psia; storage containers with a capacity less than 250 gallons; a pressure tank; the floating of a floating roof tank; and gap inspections;
- Defining numerous additional and revised definitions to reflect the rule applicability to the organic liquid industry and not the gasoline industry.

The sources subject to revised Rule 350 already have permits in which these requirements are addressed. Therefore, this revised rule did not impose new requirements on the permitted facilities, and no costs will be incurred for compliance with the rule revisions.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity provided by the Rule 350 revisions will provide a benefit to the regulated community; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision did not impose increased monetary or regulatory costs on individuals so regulated.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions did not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated.

(a) **An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County that engage in the bulk storage and transfer of any organic liquid (non-gasoline) with a vapor pressure of 0.5 psia or more.

(b) **The administrative and other costs required for compliance with the rulemaking.**

This rulemaking updated and clarified existing rule provisions and definitions to be consistent with federal performance standards; reduced confusion as to the applicability of the rule; and improved understanding and readability. The department considered the implications of the amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**

Correcting and clarifying existing rule provisions and definitions in this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**

This rulemaking did not impose any new compliance burdens on permitted regulated entities or introduce additional regulatory requirements and did not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated. As such, there are no costs to pass through to consumers, which means there are no impacts on consumers.

A statement of the probable effect on state revenues.

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

11. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name: Cheri Dale or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, AZ 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

12. **Description of the changes between the proposed rule, including supplemental notices and final rule:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R 1207), the department made the following additional amendments:

- Throughout the rule, added either English or metric measurements where both units of measure were not included
- Section 103.2(a) removed partial exemption for organic liquids having a true vapor pressure less than 0.5 psia, because such organic liquids are not subject to the rule
- Section 103.2(c)(2) reference to Section 103.2(c)(i) was revised to reference Section 103.3(c)(1) because there is no (i) or (ii)
- Section 301.1(c) reference to Section 301.2(c)(i) and 301.2(c)(ii) was revised to reference Section 301.1(c)(1) and 301.1(c)(2) because there is no (i) or (ii)
- Section 301.2 "true vapor pressure (TVP) of 0.5 psia through 11.0 psia (26 mm - 569 mm Hg)" was revised to read "…true vapor pressure (TVP) equal to or greater than 0.5 psia but less than 11.0 psia (26≥ mmHg <569)"
- Sections 301.2 and 301.3 revised the wording "…true vapor pressure (TVP) 0.5 through 11.0 psia (26 mm Hg - 569 mm Hg)…" to "…true vapor pressure (TVP) equal to or

greater than 0.5 psia but less than or equal to 11.0 psia (26≥ mmHg ≤569)…" to provide a clear measure of vapor pressure

- Table 350-1 added metric measurements for TVP to be consistent with the vapor pressure limits specified in Section 301
- Section 301.4 replaced the words "Exceeding" and "above" with "Greater Than" to provide consistent use of terms throughout rule
- Section 302.1(c)(1) reference to Section 302.1(c)(ii) was revised to reference Section 302.1(c)(2) because there is no (i)
- Moved the second and third sentences in Section 303.1(c)(1) to new Sections 302.1(d)(3) and 302.1(b), respectively
- Revised reference in Section 401.2(b)(1) to reference to Section 401.2(a)
- Section 404 (Other Agencies' Requirements): Arizona Department of Weights and Measures became Department of Agriculture, Weights and Measures Services Division on July 1, 2016. Revised the rule to reflect the new title of the division
- Included text in Section 506 (Compliance Determination-Test Methods Incorporated By Reference) that allows for the use of alternative test methods to determine compliance with the rule; allows test methods as approved by the Administrator to be used; and clarified the provision regarding when more than one test method is permitted for a compliance determination

13. **Summary of the comments made regarding the rule and the department response to them:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R. 1207), the department received comments from Kinder Morgan/SFPP. The comments and the department's responses are provided below.

Comment #1: Section 301.1 (Organic Liquid Stationary Storage Tank Requirements)
SFPP proposed to revise the heading/title of Section 301.1 to "All Stationary Storage Tanks with A Capacity of 250 Gallons (946 L) to less than 20,000 Gallons (75,700 L)."

Response #1: Section 301.1 (Organic Liquid Stationary Storage Tank Requirements)
Section 301.1 does apply to all stationary storage tanks with a capacity of 250 gallons or more with no upper limit for storage capacity. The requirements are not limited to organic liquid storage tanks with a capacity between 250 and 20,000 gallons; therefore, the department did not revise Section 301.1 heading as suggested.

Comment #2: Section 301.2 (Organic Liquid Stationary Storage Tank Requirements)
SFPP proposed to revise the heading/title of Section 301.2 to "Organic Liquid Stationary Storage Tanks With a Capacity of 20,000 Gallons (75,700L) to Less Than 40,000 Gallons (151,400 L)"

Response #2: Section 301.2 (Organic Liquid Stationary Storage Tank Requirements)
The department revised the section heading as SFPP suggested.

Comment #3: Table 350-1
SFPP proposed to revise the first row tank capacity description in Table 350-1 to "All organic (non-gasoline) stationary storage tanks >250 gallons to <20,000 gallons".

Response #3: Table 350-1
The department revised Table 350-1 as SFPP suggested.

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

Not applicable

15. **Incorporations by reference and their location in the rule:**

The following test methods are incorporated by reference in Rule 350, Section 506:

- EPA Method 2A - Direct Measurement of Gas Volume Through Pipes and Small Ducts
- EPA Method 18 - Measurement of Gaseous Organic Compound Emissions by Gas Chromatography
- EPA Method 21 - Determination of Volatile Organic Compound Leaks
- EPA Method 25A - Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer
- EPA Method 25A - Determination of Total Gaseous Organic Concentration Using a Nondispersive Infrared Analyzer
- EPA Method 27 - Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure Vacuum Test
- Optical Gas Imaging: Alternative Work Practice for Monitoring Equipment Leaks, 40 CFR 60.18(g)

- California Air Resources Board (CARB) - Test Procedure TP-201.1E Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves, October 8, 2003
- ASTM D2879-10 Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope
- ASTM D6420-99 (Reapproved 2004), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry

16. **Was this rule previously an emergency rule?**
No

17. **Full text of the rule follows:**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 350
STORAGE AND TRANSFER OF ORGANIC LIQUIDS (NON-GASOLINE) AT ~~BULK PLANTS AND BULK TERMINALS~~ 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 ~~BULK PLANTS AND TERMINALS~~ 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 ~~transfer and~~ bulk storage and transfer of any organic liquid (non-gasoline) with a true vapor pressure (TVP) greater than 0.5 psia ~~in a bulk plant or bulk terminal stationary storage tank which is used primarily to fill delivery vessels.~~ 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 BULK PLANT - Any loading facility at which gasoline and/or other organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under any actual storage conditions are received from delivery vessels for storage in on-site stationary tanks, and from which such liquids also are transferred to delivery vessels.~~

~~202 BULK TERMINAL - Any primary distributing loading facility which has ever received in any consecutive 30-day period over 600,000 gallons (2,271,180 l) of gasoline and/or other organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under actual storage conditions; or any loading facility where delivery of such liquids to the facility is primarily by pipeline.~~

~~203 DELIVERY VESSEL - Any vehicular-mounted container such as a railroad tank car, tanker truck, tank trailer or any other mobile container used to transport organic liquids.~~

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.

~~204 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.~~

205 GASOLINE: ~~Any petroleum distillate, petroleum distillate/alcohol blend, petroleum distillate/organic compound blend, or alcohol having a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under any actual conditions of storage and handling, and which is used as a fuel for internal combustion engines.~~ 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.

~~206 LOADING FACILITY - Any operation or facility such as a gasoline storage tank farm, pipeline terminal, bulk plant, loading dock or combination thereof, where organic liquids are transferred or loaded into or out of delivery vessels 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 person or persons under common control.~~

~~207~~ **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]

~~208~~ **210 STATIONARY STORAGE TANK:** Any tank, reservoir or other container used to store, but not transport, organic liquids.

~~209~~ **211 SUBMERGED FILL** ~~PIPE~~**:** Any organic liquid discharge pipe or nozzle which meets at least one of the applicable specifications: ~~as follows:~~

~~209.1~~ **211.1 Top-Fill or Bottom-Fill** ~~Tanks~~**:** 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.

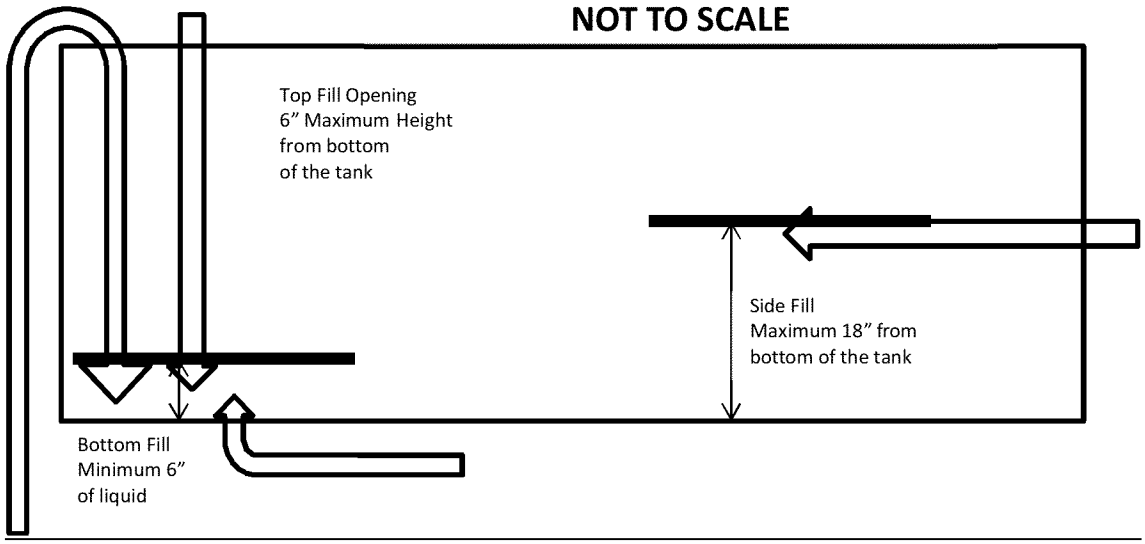
~~209.2~~ **211.2** **Side-Fill:** At its highest point within the storage tank, ~~The~~ the end of the discharge pipe or nozzle is totally submerged when the liquid level is eighteen (18) inches (46 cm) from the bottom of the tank.

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:

a. Is kept completely submerged, including when the roof rests on its legs, except when the tank is being emptied completely and refilled; and

b. Is designed and installed according to the API Standard 650.

Submerged Fill Diagram
NOT TO SCALE



~~210~~ **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.

~~211~~ **215** **VAPOR LOSS CONTROL** ~~DEVICE~~ **SYSTEM:** ~~Any piping, hoses, equipment, and devices which are used to collect, store and/or process organic vapors at a bulk terminal, bulk plant, service station or other operation handling gasoline and/or other organic liquids.~~ 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.

~~212~~ **216** **VAPOR TIGHT:** A condition ~~where no organic vapor leak reaches or exceeds 100 percent of the lower explosive limit at a distance of one inch (2.5 cm) from a leak when measured with a combustible gas detector or an organic vapor analyzer, both calibrated with propane~~ 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):** ~~No person shall install or use a stationary storage tank with a capacity greater than 250 gallons (946 l) for storing organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or more unless such a tank meets the following requirements:~~ 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.

301.1 **b.** The 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.

Note[2]

301.2 **c.** Each fixed roof stationary storage The tank has a pressure/vacuum valve that complies with both Section 301.1(c)(1) and (c)(2) of this rule. which is set within ten percent of the tank's maximum, safe working pressure. 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.

302 GASOLINE STORAGE TANKS BETWEEN 250 AND 40,000 GALLONS (946 - 151,400 L): No person shall store gasoline in a stationary storage tank with a capacity less than 40,000 gallons (151,400 l) but greater than 250 gallons (946 l) unless the tank is equipped with a vapor recovery system which collects and returns displaced vapors to the delivery vessel using vapor-tight fittings and lines; or such tank uses at least one of the vapor loss control methods in Sections 306, 307, or 308 of this rule.

303 **301.2 Organic Liquid Stationary Storage Tanks with a Capacity of 20,000 Gallons (75,700L)** Through 39,999 Gallons Capacity (946 L- 151,396L) **to Less Than 40,000 Gallons (151,400 L):** No person shall store organic liquids with a true vapor pressure (TVP) of 1.5 psia through 11.0 psia (77.5 mm 569 mm Hg) in a stationary tank with a capacity from 20,000 through 39,999 gallons (75,700 - 151,396 l) unless the tank is equipped with a vapor recovery system which collects and returns displaced vapors to the delivery vessel using vapor-tight fittings and lines; or such tank uses at least one of the vapor loss control methods specified in Sections 306, 307, or 308 of this rule. 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 ($26 \geq$ mmHg ≤ 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.

304 **301.3 Organic Liquid Stationary Storage Tanks with a Capacity Equal to or Greater than** Of **40,000 Gallons (151,400 L)** or More**:** No person shall place, store or hold in any stationary storage tank having a capacity of 40,000 gallons (151,400 L) or more, any gasoline or organic liquid having a true vapor pressure of 1.5 or greater 1.5 through 11.0 psia (77.5 mm Hg - 569 mm Hg) under actual storage conditions, unless such storage tank is equipped with at least one of the vapor loss control devices specified in Sections 306, 307, or 308. 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 ($26 \geq$ mmHg ≤ 569) in a stationary storage tank meeting all of the following requirements, unless such stationary storage tank is

[2] This note is not part of Rule 350, but is provided for the reader's convenience. The requirement of subsection 301.2 for a pressure/vacuum valve is not applicable to floating roof tanks.

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.

~~305~~ **301.4 Organic Liquid Stationary Storage Tanks Storing Liquids Having ~~Vapor Pressures~~ a TVP ~~Exceeding~~ Greater Than 11 PSIA:** ~~No person shall place, store, or hold in a stationary tank having a capacity over 250 gallons (946 l) organic liquid(s) with a true vapor pressure above 11.0 psia (569 mm Hg) unless such a tank is either a pressure tank maintaining working pressure sufficient at all times to prevent organic vapor/gas loss to the atmosphere or is equipped with a vapor collection/processing system specified in Section 308 of this rule.~~ 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≥ psia <1.5 (26≥ mm Hg <77.5)	1.5≥ psia ≤11.0 (77.5≥ mm Hg ≤569)	~~(□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 ≥40,000 gallons	Section 301.1	Sections 301.1 and Section 301.3	Section 301.4

302 **VAPOR LOSS CONTROL SYSTEM:**

~~306~~ **302.1 External Floating Roof Stationary Storage Tanks:** ~~This vapor loss control device is an uncovered floating roof consisting of either a pontoon type or a double-deck type roof. It must rest on and be supported by the surface of the liquid contents, be equipped with a continuous primary seal to close the space between the roof eave and tank wall, except as provided in subsection 309.1 and 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 following requirements:~~ 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:

~~306.1~~ (1) The secondary seal is to be i n s t a l l e d 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 ~~subsection 306.2~~ Section 302.1(d)(2) of this rule. ~~Storage tanks constructed after July 13, 1988, shall have a secondary seal that is rim-mounted. Except for tanks having metallic shoe primary seals onto which secondary seals were installed prior to July 13, 1988, by October 6, 1993 no person shall operate an external floating roof tank subject to the provisions of this rule unless a secondary seal extends from the roof to the tank shell (a rim-mounted seal) and is not attached to the primary seal.~~

~~306.2~~ (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 cm^2 per meter) of tank diameter. Determinations of gap area shall only be made at the point(s) where the gaps exceed ~~1/8~~ one eighth (1/8) inch (3 mm). The width of any portion of any gap shall not exceed ~~1/2~~ 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.

~~306.3 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.~~

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 cm^2 ~~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.

~~307~~ **302.2 Internal Floating Roof Stationary Storage Tanks with Fixed Covering:** ~~This vapor loss control device is a covered tank with an internal floating roof resting on the contained liquid. This~~ An internal floating roof stationary storage tank and its appurtenances shall meet the applicable requirements as follows:

302.1 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.

~~307.1~~ **b.** ~~Bulk terminal tanks~~ 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.

~~307.2~~ **c.** All stationary storage tanks not subject to ~~subsection 307.1~~ Section 302.2(b) of this rule must comply with one of the following:

(1) ~~Comply with~~ Sections of 40 CFR Part 60, Subpart Kb~~, notwithstanding the type of facility and the date of tank construction, reconstruction or modification~~ 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 ~~subsection 309.1~~ 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 cm^2 ~~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.

~~308~~ **302.3** **Vapor Collection/Processing System:** This vapor loss control ~~device~~ 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.

~~308.1~~ **b.** The vapor processing subsystem shall be ~~gas-tight~~ vapor-tight except for the designated exhaust.

~~308.2~~ **c.** Any tank gauging or sampling device on a tank, vented to such a vapor ~~collection/processing~~ loss control system, shall be equipped with a ~~gas-tight~~ vapor-tight cover which shall be closed at all times except during gauging or sampling procedures.

~~308.3~~ **d.** All pressure-vacuum vent valves shall be constructed and maintained in a ~~gas tight~~ 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.

~~309 ADDITIONAL REQUIREMENTS:~~

~~309.1 Prohibition - Floating Roof Openings: Floating roof tanks subject to the provisions of Section 306 or 307 of this rule shall have no visible holes, tears or other openings in the seal or in any seal fabric. The accumulated area of gaps between a tank's wall and primary seal shall not exceed 10 square inches per foot of tank diameter (212 cm^2 per meter) and the width of any portion of any gap shall not exceed 1½ inches (3.8 cm). Where applicable, all openings except drains shall be equipped with a cover seal or lid. The cover seal or lid shall be in a closed position at all times, except when the device is in actual use. Automatic bleeder vents shall be closed at all times, except when the roof is floated off or landed on the roof leg supports. 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.~~

~~309.2 Tanks and all required emission control equipment shall be properly installed, properly maintained and be properly operating.~~

~~310 EXEMPTIONS:~~

~~310.1 A pressure tank maintaining working pressure sufficient at all times to prevent organic vapor or gas loss to the atmosphere is exempt from Sections 301, 302, 303, and 304 of this rule.~~

~~310.2 During the following periods a floating roof is exempt from the requirement that its 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.~~

~~310.3 A horizontal filling nozzle at its highest point within a floating roof tank exceeding 2,000,000 gallons (7,580,000 l) capacity may be up to 39.4 inches (1 meter) above~~

~~the tank bottom if: except when the tank is emptied completely, the nozzle is kept completely submerged, including when the roof rests on its legs.~~

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

~~401 ANNUAL INSPECTIONS OF EXTERNAL FLOATING ROOF STATIONARY STORAGE TANKS: The owner or operator of any tank which uses an external floating roof to meet the vapor loss control 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 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.~~

~~402 ANNUAL INSPECTIONS OF INTERNAL FLOATING ROOF TANKS: The owner or operator of any tank which uses an internal floating roof to meet the vapor loss control requirements of this rule shall make the entire tank including the internal floating roof available for inspection prior to filling. It shall be made available for visual inspection through the manholes or roof hatches on the fixed covering on an annual basis.~~

~~403 FIVE-YEAR, FULL CIRCUMFERENCE INSPECTIONS: As of July 13, 1988, the owner or operator of a floating roof tank of 20,000 gallons (75,700 l) or more storing an organic liquid with a TVP of 1.5 psia (77.5 mm Hg) or greater shall make the primary seal envelope available for inspection by the Control Officer for its full length every five years. However, if prior thereto 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 working days prior to removal of the secondary seal. The owner or operator shall perform a complete inspection of the primary seal and floating roof, including measurement of gap area and maximum gap, whenever the tank is emptied for non-operational reasons or at least every five years, whichever is more frequent.~~

~~404 SEMI-ANNUAL INSPECTIONS BY OWNER OR OPERATOR: The owner or operator of any floating roof tank subject to this rule shall inspect the tank and seals at least once every six months to determine ongoing compliance with both the applicable standards of this rule and any permit conditions pertaining to the tank. Determinations of secondary seal gap area on external floating roofs need be made only once per year. Records of these inspections shall be maintained and shall be made available to the Control Officer upon request.~~

~~405 COMPLIANCE SCHEDULE: By October 6, 1992, any person subject to Section 300 who does not comply with all its provisions shall submit to the Control Officer for approval an emission control plan describing the method(s) to be used to achieve full compliance by October 6, 1993. This plan shall specify dates for completing increments of progress, such as the contractual arrival date of new control equipment. The Control Officer may require a person submitting such an emission control plan to submit subsequent reports on progress in achieving compliance.~~

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 cm^2 (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 cm^2 (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 VAPOR PRESSURE RECORDS: A person whose tanks are subject to the provisions of this rule shall keep accurate records of liquids stored in such tanks including either the true or the Reid vapor pressure ranges of each such liquid. The temperature of the contents of each affected tank located at bulk terminals shall be recorded at least weekly and the true vapor pressure of each shall be recorded at least once each month. These records shall be kept a minimum of three years.~~

~~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 determined by any of the applicable test methods constitutes a violation of this rule.~~

~~Determination Of Vapor-Tight Condition: Applicable procedures of Rule 351, Section 501.~~

~~Emission Rates And Control Device Efficiency: EPA Reference Methods 2A, 2B, 18 and 25A.~~

~~Gaseous Leak Detection And Determination Of Gas-Tight Condition: EPA Method 21.~~

~~Reid Vapor Pressure: Reid vapor pressure shall be determined by ASTM Method D323-82 or by ASTM Method D-5191.~~

~~True Vapor Pressure: True vapor pressure shall be determined by ASTM Method 2879-83 and by temperature measurement under actual conditions using an instrument accurate to within ± 1 degree Fahrenheit or ± 0.5 degree Celsius. For purposes of recording and reporting, the Reid vapor pressure and the foregoing temperature determination may be used in conjunction with the method of American Petroleum Institute Bulletin 2517,February, 1980, to determine true vapor pressure, unless the Control Officer specifies ASTM Method 2879-83.~~

501 MONITORING FOR LEAKS

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.

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 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.

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.

An owner or operator shall keep accurate records of organic liquids stored in each stationary storage tank subject to this rule.

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.

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:

The owner or operator shall sign the log at the completion of each monthly inspection for equipment leaks.

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.

Each monthly inspection log shall include any maintenance that occurred.

Each annual inspection log shall include any maintenance that occurred.

These records shall be kept a minimum of five (5) years.

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.

~~502~~ **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 Isoteniscope.

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).

NOTICE OF FINAL RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 351: LOADING OF ORGANIC LIQUIDS
PREAMBLE

1. **Rule affected** — **Rulemaking action**

Rule 351: Loading of Organic Liquids — Amended

2. **Statutory authority for the rulemaking:**

Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. **The effective date of the rule:**

Date of adoption: November 2, 2016

4. **List of public notices addressing this rulemaking:**

Notice of Briefing to Maricopa County Manager: May 2015
Notice of Stakeholder Workshops: June 30, 2015, September 14, 2015, and February 22, 2016
Notice of Maricopa County Board of Health Meeting: April 25, 2016
Notice of Proposed Rulemaking: 22 A.A.R. 1224, May 13, 2016

5. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name: Cheri Dale or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, Arizona 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

6. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary: Rule 351 limits the emission of volatile organic compounds (VOCs) from organic liquids under actual loading conditions. The rule is applicable to the transfer of organic liquids having a true vapor pressure of 1.5 psia or greater under actual loading conditions. The rule regulates the transfer of organic liquids from a stationary storage tank located at a bulk plant or bulk terminal into and out of delivery vessels. Rule 351 applies to both the organic liquid (non-gasoline) and the gasoline industries.

Rule 351 was last revised over twenty-five years ago. Technologies have changed over time. The gasoline industry and the organic liquid (non-gasoline) industry and use different terminology, definitions and methods of operation. Revisions in Rule 351 included the separation of gasoline requirements from the organic liquids (non-gasoline). The organic liquid (non-gasoline) transfer requirements are included in Rule 350 (Storage of Organic Liquids at Bulk Plants and Bulk Terminals). The gasoline storage requirements currently in Rule 350 were moved to Rule 351. These rule revisions updated and clarified the county regulatory requirements and authority for the both the gasoline industry and the organic liquid (non-gasoline) industry. In addition, the revisions to Rule 351 addressed the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS).

In addition, the amendments corrected typographical or other clerical errors; made minor grammatical changes to improve readability or clarity; modified the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or made various other minor changes of a purely editorial nature. As these changes did not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 17 of this notice.

Background: As early at the 1960's, the Maricopa County Health Department (as the department was then called), Air Pollution Control regulations, Section IV, Handling of Materials, Regulation 1, required "Material such as…gasoline or other volatile compounds…be kept, processed, used, and transported in such a manner and by such means that they will not unreasonably leak, escape, evaporate or be otherwise discharged into the ambient air so as to cause or contribute to air pollution…"[1] This early rulemaking established

the basis for the current Rule 351. In 1970, the passage of the Clean Air Act established federal air quality standards.

Congress established the basic structure of the Clean Air Act (CAA) in 1970. The CAA requires the U.S. Environment Protection Agency (EPA) to establish national ambient air quality standards (NAAQS) for common and widespread pollutants based on the most current science available. For areas that were determined to be in nonattainment of the NAAQS, the state was required to adopt federally enforceable state implementation plans (SIP) in order to achieve and maintain air quality and meet the federally established air quality standards (the NAAQS)[2]. The states were responsible for developing and implementing rules that require reasonably available control technology (RACT) for sources of VOCs located in the designated ozone nonattainment areas. Local air agencies were required to establish RACT for source categories not already covered by EPA's Control Techniques Guidelines (CTGs) as well as tighten RACT for source categories for which RACT had already been defined in the NAAQS[3]. EPA defined RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility" (44 FR 53762; September 17, 1979).

In the 1970's, using the EPA NAAQS and CTGs to identify the established RACT standards, the Maricopa County Bureau of Air Pollution Control (as the department was then called) revised and renumbered the county air pollution rules and regulations. The revised county rules established specific requirements for petroleum products in Regulation III, Rule 33: Storage and Handling of Petroleum Products[4]. This rule established requirements to control vapor loss during storage; submerged filling of tanks; loading dock requirements; and leak proof fill pipe connections.

On March 3, 1978, EPA promulgated a list of ozone nonattainment areas under the provisions of the Clean Air Act, as amended in 1977 (1977 CAA or pre-amended Act). Maricopa County was included on such list 43 FR 8964, March 3, 1978). On February 24, 1984, EPA notified the Governor of Arizona, that the Maricopa County Air Pollution Control District's ((MCAPCD), as the department was then called) portion of the Arizona SIP was inadequate and requested that deficiencies in the existing SIP be corrected (EPA's SIP-Call, 49 FR 18827, May 3, 1984). The department was in the process of revising Rule 33 to create Rules 350, 351, 352, and 353 to address the RACT requirements when EPA again notified the Governor of Arizona (May 26, 1988) that MCAPCD's portion of the Arizona SIP was inadequate and requested that deficiencies relating to VOC controls and the application of RACT in the existing SIP be corrected (EPA's second SIP-Call, 53 FR 34500, September 7, 1988).

On November 15, 1990, the Clean Air Act Amendments of 1990 were enacted. In an amended section of the CAA, Congress statutorily adopted the requirement that nonattainment areas fix their deficient RACT rules and established a deadline of May 15, 1991 for states to submit corrections of those deficiencies. The department further revised Rules 350, 351, 352, and 353 to meet the RACT standards. Rule 350 (Storage of Organic Liquids at Bulk Plants), revised July 13, 1988, and April 6, 1992, was approved by the EPA effective October 5, 1995 (60 FR 46024). Rule 351(Loading Organic Liquids) revised July 13, 1988 and November 16, 1992, was approved effective October 5, 1995 (60 FR 46024). Rule 352 (Gasoline Delivery Vessel Testing and Use), revised July 13, 1988, and November 16, 1992, was approved effective October 5, 1995, (60 FR 46024). Rule 353 (Transfer of Gasoline into Stationary Dispensing Tanks) revised July 13, 1988, and April 6, 1992, was approved effective March 4, 1996 (61 FR 3578).

More recently, EPA developed national emission standards for hazardous air pollutants (NESHAPS) for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities (73 FR 1933, Jan. 10, 2008); a NESHAP for Gasoline-Dispensing Facilities (73 FR 1945, Jan. 10, 2008); and the NESHAP for Organic Liquid Distribution (non-gasoline) (69 FR 5063, Feb. 3, 2004). These NESHAPS are often referred to as the maximum achievable control technology (MACT) standards since they were developed to reflect the maximum achievable degree of hazardous air pollutant (HAP) emission reduction. New MACT standards required additional or new emissions testing requirements reflecting the new technologies. New and revised test methods and leak detection methods were required in these MACT standards. Although the MACT standards typically apply to large sources, there are test methods and other good practices that are or may be applicable to small area sources of VOC emissions.

Rule 351 Background: The department originally adopted Rule 351(Loading of Organic Liquids) and Rule 350 (Storage of Organic Liquids at Bulk Plants and Terminals) to be inclusive of both gasoline and non-gasoline organic liquids. The purpose of the rules was to

control the emission of volatile organic compounds (VOCs) from all organic liquids. These rules were required in order for the county to comply with the reasonably available control technology (RACT) documents and other policy statements published by the U.S. Environmental Protection Agency (EPA). Since that time, the gasoline industry and the organic liquid (non-gasoline) have evolved into two distinct industries. The use of different terminology, definitions and methods of operation have created confusion in the applicability of Rule 351 to each industry. In this rulemaking, the department drafted rules specific to the gasoline storage and distribution industry and for the organic liquid (non-gasoline) storage and distribution industry. This rulemaking did not propose new rules for the industries but rather revisions to current rules that improved the clarity and enforceability of the regulatory requirements for each industry.

The revisions included the separation of the gasoline requirements and the organic liquid (non-gasoline) requirements in Rule 351. The gasoline storage requirements from Rule 350 and the gasoline loading requirements in Rule 351 were combined and included into one rule, Rule 351. The organic liquid (non-gasoline) loading requirements in Rule 351 were moved into Rule 350. Along with separation of the two industry requirements, the department retitled the rule to reflect the rule revisions.

On May 19, 1993, the department issued technical guidance #TG-003 to address a Stakeholder concern that Section 301.2 of Rule 350 requiring a tank to have a pressure vacuum valve set to within 10% of the tank's maximum, safe working pressure. The Stakeholder provided documentation stating the design working pressure should not exceed 1 psig and recommended applying the ½ psia operating pressure as CARB required. Revisions to Rule 351 provided the owner or operator the option of either setting the pressure/vacuum valve on fixed roof tanks within 10% of the tank's maximum working pressure or at 0.5 psia, as included in revised Section 302(c) of Rule 351. The department rescinded #TG-003 (May 19, 1993) with this rule revision.

A second technical guidance, #TG98-002, was issued on March 11, 1998, addressing the requirement of pressure/vacuum (P/V) valves on both fixed roof and floating roof tanks. Per the discussion in the document:

> Both floating-roof tanks and pressure-tanks are designed and engineered to control vapor emissions without the use of pressure/vacuum valves. The use of such a valve would not produce additional emissions control. The rule's authors had no intention of requiring P/V valves on floating roof tanks or pressure tanks, but failed to recognize that the way they constructed the rule would result in this unintended and erroneous interpretation.

The guidance concluded "The subsection 301.2 requirement to have a pressure/vacuum valve does not apply to floating roof tanks or pressure tanks." The department revised Rule 351, Section 302.2(c) to require pressure/vacuum valves on "Each fixed roof stationary storage tank…" This rule revision corrected the error in the previous rule. The department rescinded #TG98-002 with this rule revision.

Other revisions included the relocation of any exemptions to Section 100; the deletion of definitions and terms specific to the organic liquid (non-gasoline) industry; the inclusion of definitions specific to the gasoline industry and in line with terms defined in 40 CFR 63.11100 (Gasoline Distribution Bulk Terminal, Bulk Plants and Pipeline Facilities NESHAP); clarified the regulatory requirements for storing and loading gasoline at bulk plants and bulk terminals; added monthly equipment leak inspection requirement; and added optical gas imaging as an alternative work practice to monitor and identify leaking equipment. The department also included the recommendations set forth in the Maricopa Environmental Quality, Air Pollution Control Division, Technical Guidance #TG-003 and TG-003, to clarify the vapor vent/vacuum valve requirements at bulk plants and bulk terminals.

Issues Raised and Discussed During This Rulemaking Process:

The department held three Stakeholder workshops: June 29, 2015, September 14, 2016, and February 22, 2016. Stakeholders included representatives from APS, Caljet, CDM Smith, Cemex, City of Glendale, City of Mesa, City of Phoenix, Coastal Transport, EnCore Consulting, Envirosure Solutions, Kiewit, Kinder Morgan, Luke Air Force Base, Pinal County, Ping, Polar Services, SRP, Tamura Environmental, Washington Elementary School, and EPA.

Rule 351 is applicable to the storage of gasoline and the loading of gasoline at bulk plants and bulk terminals. Stakeholders questioned if the rule was only applicable to gasoline. Per one Stakeholder the proposed rule does rule did not take into account other petroleum products such as denatured ethanol and transmix, a mixture of refined petroleum products such as

gasoline, diesel, and/or jet fuel. There is a wide variety of other petroleum products. The department defined gasoline in the rule as having a Reid vapor pressure between 4.0 and 14.7 psi and used as a fuel for internal combustion engines. If a petroleum product meets the definition of gasoline as defined in the rule, then the rule is applicable.

The terms VAPOR COLLECTION/PROCESSING SYSTEM and VAPOR LOSS CONTROL DEVICE were used inconsistently within the rule. A vapor balance system is different than a vapor loss control system. A vapor balance system is a system that is designed to capture the VOC emissions that occur during the loading of gasoline cargo tanks. No destruction of the VOC emissions occurs during this type of loading process. A vapor loss control system is a system that collects the VOC emissions and uses an abatement device to reduce the VOC emissions. The department deleted the definitions of VAPOR COLLECTION/PROCESSING SYSTEM and VAPOR LOSS CONTROL DEVICE; added the definitions of VAPOR BALANCE SYSTEM and VAPOR LOSS CONTROL SYSTEM; and revised sections throughout the rule that referred to VAPOR COLLECTION/PROCESSING SYSTEM and VAPOR LOSS CONTROL DEVICE.

The current definitions of BULK TANK and BULK TERMINAL were confusing. Stakeholders recommended clarification and applicability of terms to be consistent throughout the department's rules pertaining to gasoline. The department revised the terms to be consistent with other department rules pertaining to gasoline.

Stakeholders requested the addition or revision of numerous definitions to reflect the rule applicability to the gasoline industry, specifically to include definitions for LEAK or LEAK FREE and PURGING. A request was made to clarify the definitions VAPOR TIGHT and GAS TIGHT. The department revised the definitions in the rule.

In Section 400, the owner or operator "shall make the primary seal envelope available for inspection by the Control Officer for its full length every five years." Stakeholders questioned if it was Maricopa County's intention to perform the inspection when the tank is in service or out of service? Did this requirement apply to internal floating roof tanks as well? Per discussions with the Stakeholder, the primary seal envelope can be inspected when the tank is "in-service." The department will not require the floating roof tank to be emptied prior to each five-year inspection if the primary seal envelope is available for inspection by the Control Officer. The department clarified the section to reflect the requested requirements.

Stakeholders questioned the intent of the weekly monitoring requirement under vapor pressure records. Monitoring the product temperature on a weekly basis for a facility that has more than 70 tanks requires a great deal of manpower and coordination. TVP of products stored in storage tanks operated at ambient temperature are typically calculated using meteorological data provided in the EPA TANKS 4.0 database. Stakeholders requested that the department reduce the monitoring requirement from weekly to monthly. The requirement for weekly monitoring of temperature came from Rule 350, Section 501. Reducing the temperature monitoring to once a month may be considered a relaxation of current rule; therefore, the department did not reduce the frequency of the current weekly requirement. The department did add an option to use the maximum local monthly average ambient temperature as reported by the National Weather Service and record monthly for each storage tank in Section 503.1.b(2).

The department originally proposed to remove the "horizontal fill" pipe maximum height of 39" from the rule. Per Stakeholder comment, at least one terminal has multiple bulk gasoline storage tanks with side fill pipes that would exceed the originally proposed maximum height of 18". These tanks were built between the 1950's and the 1990's. The Stakeholder suggested referencing the American Petroleum Institute storage tank design specifications API Standard 650, Welded Tanks for Oil Storage, 12th Edition, 2013. The department deleted the "horizontal fill pipe" requirements and wording from the rule. To accommodate fill pipes that are over 18" from the bottom of the tank, the department added an option for the gasoline storage tank to be API Standard 650 Compliant.

Description of Amendments:

Amended the following throughout the rule:

- Revised the title of the rule to: STORAGE AND LOADING OF GASOLINE AT BULK GASOLINE PLANTS AND BULK GASOLINE TERMINALS
- Deleted references to organic liquid loading and storage
- Deleted the term "transfer" and replaced with the term "loading"
- Changed the term "delivery vessel" to "gasoline cargo tank"
- Deleted the word "person" and inserted the words "owner or operator"
- Deleted past compliance dates

- Added or revised specific rule section references

Amended the following in Section 100:

- Revised Section 101 (Purpose) to include the storage and loading of gasoline
- Revised Section 102 (Applicability) to apply to the bulk storage and loading of gasoline
- Added Section 103 (Exemptions)

Amended the following in Section 200:

- Deleted the definition BULK PLANT
- Added the definition AVIATION GASOLINE (AVgas)
- Added the definition BULK GASOLINE PLANT
- Revised the definition BULK TANK
- Revised the definition BULK TERMINAL
- Deleted the definition DELIVERY VESSEL
- Revised the definition DISPENSING TANK
- Revised the definition EXCESS ORGANIC LIQUID DRAINAGE
- Added the definition EXTERNAL FLOATING ROOF STATIONARY STORAGE TANK
- Deleted the definition FUGITIVE LIQUID LEAK
- Revised the definition GASOLINE
- Added the definition GASOLINE CARGO TANK
- Revised the definition GASOLINE DISPENSING OPERATION
- Revised the definition LOADING FACILITY
- Added the definition INTERNAL FLOATING ROOF STATIONARY STORAGE TANK WITH FIXED ROOF COVERING
- Added the definition LEAK FREE
- Deleted the definition OFFSET FILL LINE
- Added the definition PURGING
- Revised the definition STATIONARY STORAGE TANK
- Revised the definition SUBMERGED FILL PIPE
- Revised the definition SWITCH LOADING
- Deleted the definition TRUE VAPOR PRESSURE
- Added the definition VAPOR BALANCE SYSTEM
- Deleted the definition VAPOR COLLECTION/PROCESSING SYSTEM
- Deleted the definition VAPOR LOSS CONTROL DEVICE
- Added the definition VAPOR LOSS CONTROL SYSTEM
- Revised the definition VAPOR TIGHT

Amended the following in Section 300:

- Deleted Section 301: General Requirements for Loading Facilities
- Deleted Section 302: Operating Requirements for Vapor Loss Control Devices
- Deleted Section 303: Repair and Retesting Requirement
- Deleted Section 304: Equipment Maintenance and Operating Practices
- Deleted Section 305: Exemptions
- Added Section 301: Federal Standards of Performance for Bulk Gasoline Plants and Bulk Gasoline Terminals
- Added Section 302: Gasoline Stationary Storage Tank Standards
- Added Section 302.1: Submerged Fill
- Added Section 302.2: Gasoline Stationary Storage Tanks with a Capacity Between 250 Gallons (946 l) and 40,000 Gallons (151,400 L)
- Added Section 302.3: Gasoline Storage Tanks with a Capacity Equal to or Greater than 40,000 Gallons (151,400 L)
- Added Section 303: Vapor Loss Control
- Added Section 303.1: External Floating Roof Storage Tanks
- Added Section 303.2: Internal Floating Roof Stationary Storage Tank with Fixed Roof Covering
- Added Section 303.3: Vapor Balance System
- Added Section 303.4: Vapor Loss Control System
- Added Section 303.5: Equipment Maintenance, Operation and Repair
- Added Section 304: General Requirements for The Loading of Gasoline
- Added Section 304: General Requirements for the Loading of Gasoline
- Added Section 304.1: Loading of Gasoline into Stationary Storage Tank
- Added Section 304.2: Loading of Gasoline into Cargo Tankers
- Added Section 304.3: Loading of Gasoline at a Bulk Gasoline Plant

- Added Section 304.4: Loading of Gasoline at Bulk Gasoline Terminal
- Added Section 305: Operating Requirements for Vapor Loss Control Devices

Amended the following in Section 400:

- Revised Section 401: Equipment Leaks
- Deleted Section 402: Compliance Schedule
- Added Section 402: Gasoline Storage Tank Inspections
- Added Section 402.1: Semi-Annual Inspection by an Owner or Operator
- Added Section 402.2: Inspection of External Floating Roof Stationary Storage Tank
- Added Section 402.3: Inspection of Internal Floating Roof Stationary Storage Tanks with a Fixed Roof Covering
- Added Section 403: Performance Testing
- Added Section 404: Gasoline Storage Tank Inspections-Availability to Control Officer
- Added Section 404.1 Annual Inspections of External Floating Roof Tanks
- Added Section 404.2 Annual Inspections of Internal Floating Roof Stationary Storage Tanks with a Fixed Roof Covering
- Added Section 404.3 Five-Year, Full Circumference Inspections
- Added Section 405: Other Agency's Requirements

Amended the following in Section 500:

- Revised Section 500: Monitoring and Records
- Deleted Section 501: Leak Detection-Test Procedure
- Deleted Section 501.1: Pressure
- Added Section 501: Monitoring for Leaks
- Added Section 501.1: Combustible Gas Detector or Organic Vapor Analyzer (OVA) – Test Procedure
- Renumbered Section 501.2: Calibration to Section 501.1(a)
- Renumbered Section 501.3: Probe Distance to Section 501.1(b)
- Renumbered Section 501.4: Probe Movement to Section 501.1(c)
- Renumbered Section 501.5: Probe Positions to Section 501.1(d)
- Renumbered Section 501.6: Wind to Section 501.1(e)
- Renumbered Section 501.2: Data Recording to Section 501.1(f)
- Added Section 501.2: Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3
- Added Section 501.3: Optical Gas Imaging
- Revised Section 502: Compliance Inspections
- Revised Section 503: Record Retention
- Added Section 503.1: Vapor Pressure Records
- Added Section 503.2: Leak Inspection Records
- Revised Section 504: Compliance Determination-Test Methods
- Deleted Section 504.1: Vapor Collection/Processing System
- Deleted Section 504.2: Vapor Balance and Loading Systems
- Deleted Section 504.3: True Vapor Pressure
- Deleted Section 504.4: Reid Vapor Pressure
- Added Section 504.1 EPA Test Methods
- Added Section 504.2 California Air Resources Board (CARB) Test Procedures:
- Added Section 504.3 ASTM Standards
- Added Section 504.4 American Petroleum Institute Standard API STD 650 Welded Tanks for Oil Storage

6. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.

2. There is credible evidence that the rule, ordinance or other regulation is either;

(a) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.

(b) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.

3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. The County failed to meet 2008 8-hour ozone standard by the marginal area attainment date of July 20, 2015. The EPA issued a final rule, effective June 3, 2016, reclassifying the Maricopa County area to "moderate" (published at 86 FR 26697, May 4, 2016). Further, a portion of the County was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the County to continue to maintain the measures and requirements that allowed the county to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM_{10} 24-hour standard. This is the only serious PM_{10} nonattainment area in Arizona. Revisions to Rule 350 addressed the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The amendments in Rule 351 included Reasonably Available Control Technology (RACT).

The department complies with A.R.S. § 49-112(B) in that the amendments to Rule 351 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49; addressed the peculiar local conditions in Maricopa County; are authorized under A.R.S. Title 49, Chapter 3, Article 3; and are not in lieu of a state program.

8. **Documents or studies referenced and/or reviewed for this rulemaking:**

Not applicable

9. **Showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**

Not applicable

10. **Summary of the economic, small business, and consumer impact:**

The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055. The economic summary is based on the number of Title V and Non-Title V permits issued by the Maricopa County Air Quality Department.

An identification of the rulemaking.

This rulemaking revised Rule 351 (Loading of Organic Liquids). The revised Rule will be titled: Storage and Loading of Gasoline at Bulk Gasoline Plants and Bulk Gasoline Terminals.

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.

The persons who are directly affected by and bear the costs of this rulemaking to revised Rule 351 are facilities in Maricopa County that engage in the storage of gasoline in a stationary storage tank at a bulk gasoline plant or bulk gasoline terminal, and 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. The department has issued permits to 27 facilities subject to Rule 351, prior to this rule revision.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**

Because this rulemaking did not impose any new compliance burdens on permitted regulated entities or introduce additional regulatory requirements, the department deemed that none of the revisions have potentially significant economic impacts on permitted sources. It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

The benefits of the rule revision are anticipated to be a result of the following changes:

- Consolidation of the gasoline requirements in Rule 351 while moving the organic liquid loading requirements to Rule 350.
- Deletion of some definitions and the addition of new definitions specific to the gasoline industry and in line with terms defined in 40 CFR 63.11100, the Gasoline Distribution Bulk Terminal, Bulk Plants and Pipeline Facilities NESHAP;
- Clarification of the regulatory requirements for storing and loading gasoline at bulk plants and bulk terminals;
- Addition of monthly equipment leak inspection requirement;
- Addition of optical gas imaging as an alternative work practice to monitor and identify leaking equipment;
- Clarification of the vapor vent/vacuum valve requirements at bulk plants and bulk terminals pursuant to the Maricopa Environmental Quality, Air Pollution Control Division, Technical Guidance TG-003 (May 19, 1993) and TG98-002 (March 11, 1998) addressing the requirement of pressure/vacuum (P/V) valves on both fixed roof and floating roof tanks.

The permitted sources subject to revised Rule 351 already have permits in which these requirements are addressed. Therefore, this revised rule did not impose new requirements on the permitted facilities, and no costs would be incurred for compliance with the rule revisions.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity provided by the Rule 351 revisions will provide a benefit to the regulated community; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision did not impose increased monetary or regulatory costs on individuals so regulated.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions did not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated.

(a) **An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County that engage in the storage of gasoline in a stationary storage tank at a bulk gasoline plant or bulk gasoline terminal, and 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.

(b) **The administrative and other costs required for compliance with the rulemaking.**

This rulemaking updated and clarified existing rule provisions and definitions to be consistent with federal performance standards; and to reduce confusion and improve understanding and readability. The department considered the implications of the

amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**
By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**
This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**
This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**
This rulemaking did not impose any new compliance burdens on regulated entities that are permitted or introduce additional regulatory requirements and did not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated. As such, there are no costs to pass through to consumers, which means there are no impacts on consumers.

A statement of the probable effect on state revenues.
The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.
This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

11. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name:	Cheri Dale or Hether Krause
	Maricopa County Air Quality Department
	Planning and Analysis Division
Address:	1001 N Central Avenue, Suite 125
	Phoenix, AZ 85004
Telephone:	(602) 506-6010
Fax:	(602) 506-6179
E-mail:	aqplanning@mail.maricopa.gov

12. **Description of the changes between the proposed rule, including supplemental notices and final rule:**
Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R 1224), the department made the following amendments:

- Deleted the term "transfer" and inserted the term "loading" in the following sections:
  - Section 103.1
  - Section 303.4(d)
  - Section 303.4(e)
- Deleted the term "person" and inserted the term "owner or operator" in the following sections:
  - Section 211
  - Section 212
  - Section 304.3(a)
  - Section 304.3(b)
  - Section 405
- Deleted proposed new text "under actual storage and loading conditions" from the end-of the sentence in Section 101 (Purpose)
- Added the term "gasoline" to definition in Section 203
- Changed the term "Gasoline Dispensing Operation" to "Gasoline Dispensing Facility" in Section 211

- Deleted the term "organic liquid" and inserted the term "gasoline" in Section 218.3
- Deleted the term "pipe" in Section 302.1 section title
- Revised the title of Section 302.2 per Stakeholder comment
- Moved the second and third sentences in Section 303.1(c)(1) to new Sections 303.1(c)(3) and 303.1(b), respectively
- Clarified, in Section 303.4(d) (Vapor Loss Control System-Bulk Gasoline Terminal), that vapor loss control system must prevent at least 95% by weight of the VOCs escaping into the atmosphere and must reduce emissions of VOC to not more than 0.08 pounds per 1000 gallons of gasoline transferred. The "0.08 pound per 1000 gallons" standard is original text from Section 301.1 (General Requirements for Loading Facilities-Bulk Terminals); standard is a California Air Resources Board (CARB) standard for vapor recovery systems
- Added the term "stationary" to Section 304.1
- Deleted the wording "volatile organic compounds" and inserted "VOC" in Sections 304.3(a) and (b)
- Clarified, in Sections 304.3(a) and (b) (General Requirements for The Loading of Gasoline-Loading of Gasoline At A Bulk Gasoline Plant), that if using a vapor loss control system, then such system must reduce emissions of VOC to not more than 0.6 pounds per 1000 gallons of gasoline transferred. The "0.6 pound per 1000 gallons" standard is original text from Sections 301.2(a) and (b) (General Requirements for Loading Facilities-Bulk Plant Tanks Over 250 Gallons-Transfer To Bulk Plant Tanks and Loading from Bulk Plant Tanks)
- Clarified, in Section 304.4 (General Requirements for The Loading of Gasoline-Loading of Gasoline At A Bulk Gasoline Terminal), that vapor loss control system must prevent at least 95% by weight of the VOCs escaping into the atmosphere and must reduce emissions of VOC to not more than 0.08 pounds per 1000 gallons of gasoline transferred. The "0.08 pound per 1000 gallons" standard is original text from Section 301.1 (General Requirements for Loading Facilities-Bulk Terminals)); standard is a California Air Resources Board (CARB) standard for vapor recovery systems
- Deleted the term "vapor collection/processing unit" and inserted "vapor loss control system" in Section 401.3
- Deleted the wording "or his representative" in Section 401.3
- Moved Section 403 to new Section 501.4 and changed the requirement that pressure be recorded at least once every one (1) minute to every five (5) minutes while a gasoline cargo tank is being loaded during performance testing and added the requirement that the highest instantaneous pressure that occurs during each loading shall be recorded per Stakeholder comment
- Added the acronym "OVA" in Section 501.1
- Underlined the new language where it was not previously identified as new language in the following sections:
  - Section 214
  - Section 500
- Section 501: Changed the title of the section from "Monitoring for Leaks" to "Determining Vapor Tight Status". Changing the title of the section from "Monitoring for Leaks" to "Determining Vapor Tight Status" clarifies the intent of the section. The department deems the phrase "If a determination of vapor tight status is to be made…" to set the parameters as to when a vapor tight status is to be determined.
- Section 504 (Compliance Determination-Test Methods Incorporated By Reference): Included text that allows for the use of alternative test methods to determine compliance with the rule and that allows test methods as approved by the Administrator to be used and clarified the provision regarding when more than one test method is permitted for a compliance determination.

13. **Summary of the comments made regarding the rule and the department response to them:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R. 1224), the department received comments from Kinder Morgan/SFPP. The comments and the department's responses are provided below.

Comment #1: Section 403 (Administrative Requirements-Performance Testing)

What is the basis for the every minute pressure recording? Per 40 CFR Subpart XX, Section 60.503(d)(2), during the performance test the pressure shall be recorded every 5 minutes while a gasoline truck is being loaded and the highest instantaneous pressure that occurs

during each loading shall also be recorded. SFPP proposes to revise the section to delete "The pressure shall be recorded periodically during performance testing at least once every minute" and to add "The pressure shall be recorded every 5 minutes while a gasoline truck 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.
Response #1: Section 403 (Administrative Requirements-Performance Testing)
The department moved Section 403 (Performance Testing) to new Section 501.4 (Determining Vapor Tight Status-Gasoline Cargo Tank Loading Pressure) and changed the requirement for recording pressure every one (1) minute while a gasoline cargo tank is being loaded during performance testing to every five (5) minutes. The five (5) minute requirement is consistent with 40 CFR Subpart XX, Section 60.503(d)(2). The department discussed the comment with Kinder Morgan/SFPP and the U.S. Environmental Protection Agency (EPA) and reviewed the federal requirements. Kinder Morgan/SFPP stated that the back pressure is continuously monitored by the source test contractor while a gasoline truck is being loaded during performance testing and that the instantaneous reading at the five (5)-minute mark and the maximum instantaneous reading during the last five (5) minutes are recorded. The federal requirements (40 CFR Subpart XX Section 60.503(d)(2)) state that during the performance test, the pressure shall be recorded every five (5) minutes while a gasoline truck is being loaded and the highest instantaneous pressure that occurs during each loading shall be recorded. After considering the comments, reviewing the federal requirements, and reviewing the text as proposed in draft Rule 351, the department changed the requirement for recording pressure every one (1) minute while a gasoline cargo tank is being loaded during performance testing to every five (5) minutes to be consistent with the federal requirement in 40 CFR Subpart XX, Section 60.503(d)(2). With this change, the department has determined that Rule 351 is no less stringent than the SIP-approved rule. Rule 351 is clarified to match federal requirements.

14. **Any other matters prescribed by the statute that are applicable to the specific department or to any specific rule or class of rules:**
Not applicable

15. **Incorporations by reference and their location in the rule:**
The following test methods are incorporated by reference in Rule 351, Section 504:
EPA Method 2A - Direct Measurement of Gas Volume through Pipes and Small Ducts
EPA Method 2B- Determination of Exhaust Gas Volume Flow Rate from Gasoline Vapor Incinerators
EPA Method 18 - Measurement of Gaseous Organic Compound Emissions by Gas Chromatography
EPA Method 21 - Determination of Volatile Organic Compound Leaks
EPA Method 25A - Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer
EPA Method 25B - Determination of Total Gaseous Organic Concentration Using a Nondispersive Infrared Analyzer
EPA Method 27 - Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure Vacuum Test
California Air Resources Board (CARB) Test Procedures TP-201.1E Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves, October 8, 2003.
ASTM D323-15a "Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)
ASTM D2879-10 Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope
ASTM D4953-15 "Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method)
ASTM D5191-15 "Standard Test Method for Vapor Pressure of Petroleum Products (Mini Method)"
ASTM D6420-99 (Reapproved 2004), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry
American Petroleum Institute: API STD 650 Welded Tanks for Oil Storage, Twelfth Edition, Includes Errata 1 (2013), Errata 2 (2014), and Addendum 1 (2014)

16. **Was this rule previously an emergency rule?**
No

17. **Full text of the rule follows:**

MARICOPA COUNTY

AIR POLLUTION CONTROL REGULATIONS

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 351

STORAGE AND LOADING OF ~~ORGANIC LIQUIDS~~ GASOLINE AT BULK GASOLINE PLANTS AND BULK GASOLINE TERMINALS

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~~Revised 07/13/88~~
~~Revised 04/06/92~~
~~Revised 02/15/95~~

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 ~~ORGANIC LIQUIDS~~ GASOLINE AT BULK GASOLINE PLANTS AND BULK GASOLINE TERMINALS

SECTION 100 - GENERAL

101 PURPOSE: To limit emissions of volatile organic compounds (VOCs) ~~from~~ emitted during the storage and ~~the~~ loading of ~~organic liquids~~ gasoline at bulk gasoline plants and bulk gasoline terminals.

102 APPLICABILITY: This rule is applicable to: ~~the transfer of organic liquids having a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under actual loading conditions. It regulates transfers at bulk terminals and bulk plants from stationary storage tanks to delivery vessels and from delivery vessels to stationary storage tanks.~~

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 BULK PLANT - Any loading facility at which gasoline and/or other organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under any actual storage conditions are received from delivery vessels for storage in on-site stationary tanks, and from which such liquids also are transferred to delivery vessels.~~

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.

~~202~~ **203** **BULK GASOLINE TANK:** Any stationary storage tank serving a loading rack which loads ~~delivery vessels~~ gasoline cargo tanks with ~~organic liquids~~ gasoline.

~~203~~ **204** **BULK GASOLINE TERMINAL:** Any ~~primary distributing~~ gasoline storage and gasoline loading facility that meets all of the following: ~~which has ever received in any consecutive 30-day period over 600,000 gallons (2,271,180 l) of gasoline and/or other organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under actual storage conditions; or any loading facility where delivery of such liquids to the facility is primarily by pipeline.~~

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.

~~204 DELIVERY VESSEL - Any vehicular-mounted container such as a railroad tank car, tanker truck, tank trailer or any other mobile container used to transport organic liquids.~~

~~205~~ **205** **DISPENSING TANK:** Any stationary tank which dispenses ~~organic liquid fuel~~ gasoline directly into ~~the fuel tanks of motor vehicles including aircraft.~~ 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). ~~This includes aircraft.~~

~~206~~ **206** **EXCESS** ~~ORGANIC LIQUID~~ **GASOLINE DRAINAGE:** More than 10 milliliters (0.34 fluid ounces or 2 teaspoonsful)~~per disconnect.~~ 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.

~~207~~ ~~FUGITIVE LIQUID LEAK: An organic liquid leak of more than three drops per minute from any single leak source other than the disconnect operation of liquid fill line and vapor line.~~

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 ~~having a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under any actual conditions of storage and handling, and which is~~ 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 ~~and which 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.

~~210~~ **211** **GASOLINE DISPENSING** ~~OPERATION~~ **FACILITY:** All gasoline dispensing tanks and associated equipment located on one or more contiguous or adjacent properties under the control of the same ~~person or persons~~ owner or operator under common control.

~~211~~ **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 ~~organic liquids are transferred or~~ gasoline is loaded into or out of ~~delivery vessels~~ 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 ~~person or persons~~ 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.

~~212~~ ~~OFFSET FILL LINE: Any organic liquid fill line (piping and fittings) which contains one or more bends.~~

~~213~~ **215** **ORGANIC LIQUID:** Any organic compound which exists as a liquid under any actual conditions of use, transport or storage.

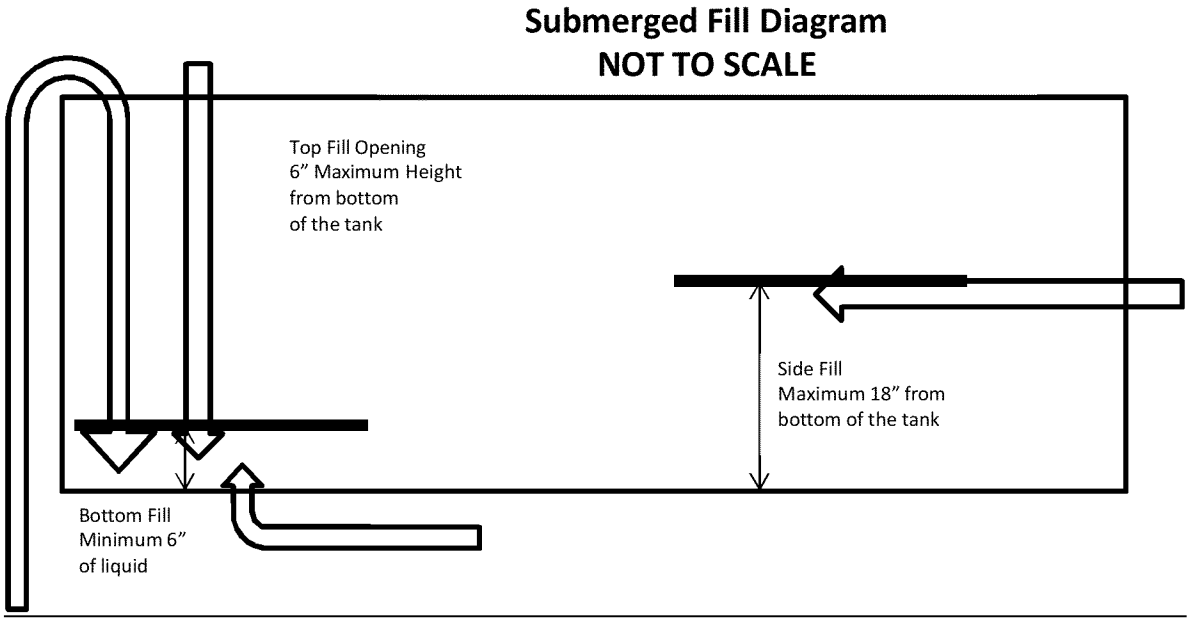
216 **PURGING:** Removing, cleaning, or scouring out gasoline vapors from all or a portion of a gasoline cargo tank by active or passive means and emitting the vapors into the atmosphere.

~~214~~ **217** **STATIONARY STORAGE TANK:** Any tank, reservoir or other container used to store, but not transport, ~~organic liquids~~ gasoline.

~~215~~ **218** **SUBMERGED FILL** ~~PIPE~~**:** ~~Any discharge pipe or nozzle which meets the applicable specification as follows:~~ Any gasoline discharge pipe or nozzle which meets at least one of the applicable specifications:

~~215.1~~ **218.1** **Top-**~~Filled~~ **Fill or Bottom-**~~Filled~~ **Fill** ~~Tanks~~**:** 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.

~~215.2~~ **218.2** **Side-**~~Filled~~ **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.



~~216~~ **219** **SWITCH LOADING:** Loading diesel fuel into a ~~delivery vessel~~ gasoline cargo tank whose previous load was gasoline; or loading any organic liquid not subject to this rule into a ~~delivery vessel~~ gasoline cargo tank whose previous load was ~~an organic liquid~~ gasoline and subject to this rule.

~~210 TRUE VAPOR PRESSURE (TVP): Absolute vapor pressure of a liquid at its existing temperature of storage and handling.~~

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.

~~218 VAPOR COLLECTION/PROCESSING SYSTEM: A vapor loss control device 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.~~

~~219 VAPOR LOSS CONTROL DEVICE: Any piping, hoses, equipment, and devices which are used to collect, store and/or process organic vapors at a bulk terminal, bulk plant, service station or other operation handling gasoline and/or other organic liquids.~~

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.

~~220~~ **222** **VAPOR TIGHT:** A condition ~~where no organic vapor leak reaches or exceeds 100 percent of the lower explosive limit at a distance of one inch (2.5 cm) from a leak when measured with a combustible gas detector or an organic vapor analyzer, both calibrated with propane.~~ 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 GENERAL REQUIREMENTS FOR LOADING FACILITIES: All bulk terminals and plants must have submerged fill pipes in all tanks over 250 gallons (946 l) storing organic liquids, observe designated procedures and be equipped with applicable equipment as follows:~~

~~301.1 Bulk Terminals: No person shall load organic liquids having a TVP of 1.5 psia (77.5 mm Hg) or greater into any delivery vessel from a stationary storage tank at a bulk terminal unless the vessel bears a current pressure test decal issued by the Control Officer and the terminal uses a vapor collection/processing system which reduces the emissions of volatile organic compounds to not more than .08 pounds per 1000 gallons of such liquids transferred (10 grams per 1000 liters). Switch loading shall be subject to this standard. The terminal owner or operator and the operator of the receiving vessel shall act to ensure that the vapor line is connected before such liquids are transferred.~~

~~301.2 Bulk Plant Tanks Over 250 Gallons (>946 L):~~

a.Transfer To Bulk Plant Tanks: No person shall transfer gasoline from a delivery vessel into a bulk plant tank exceeding 250 gallons (946 l) capacity unless the delivery vessel bears a current county pressure test decal and uses a vapor balance system equipped with fittings which are vapor tight; or, alternatively, a vapor loss control system is used which emits to atmosphere less than 0.6 pound of volatile organic compounds per 1000 gallons transferred (72 grams per 1000 liters).
b.Loading From Bulk Plant Tanks: No person shall transfer gasoline from a bulk plant tank exceeding 250 gallons (946 l) into a delivery vessel unless both the loading rack and delivery vessel use a vapor balance system equipped with fittings which are vapor tight; or, alternatively, a vapor loss control system is used which emits to atmosphere less than 0.6 pounds of volatile organic compounds per 1000 gallons loaded (72 grams per 1000 liters).

302 OPERATING REQUIREMENTS FOR VAPOR LOSS CONTROL DEVICES: The owner or operator of a vapor loss control device subject to this rule shall operate the device and organic liquid transfer equipment as follows:

302.1 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 tank truck. Each owner or operator of a facility shall act to ensure that any vapor recovery system required by this Rule 351 is connected between the delivery vessel and the storage tank during all organic liquid transfers.

302.2 Loading shall be accomplished in a manner that prevents overfills, fugitive liquid leaks or excess organic liquid drainage. Owners or operators of bulk plants or operators of delivery vessels shall observe all parts of the transfer and shall discontinue transfer if any leaks are observed. 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 loading or unloading operations, potential leak sources shall be vapor tight as demonstrated by the test procedure described in Section 501 of this rule.

302.3 Loading operations which use vapor collection/processing equipment shall be accomplished in such a manner that the displaced vapor and air will be vented only to the vapor collection/processing 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.

302.4 Vapor transfer lines 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.

303 REPAIR AND RETESTING REQUIREMENT: Except as superseded by Division actions pursuant to the procedures of Rule 100, Section 501 ("Malfunctions"), the owner/operator of a vapor loss control device that exceeds the standards of this rule shall notify the Control Officer and observe the following time schedule in ending such exceedances:

303.1 Concentrations at or above the lower explosive limit must be brought into compliance within 24 hours of detection.

303.2 Leak concentrations exceeding 10,000 ppm but less than 50,000 ppm as methane for vapor collection/processing equipment subject to gas-tight standard shall be brought into compliance within 5 days of detection.

303.3 Except as the Control Officer otherwise specifies, a leak source subject to Sections 303.1 or 303.2 must be tested after presumed leak-correction within 15 minutes of recommencing use; if leak standards are exceeded in this test, the use of the faulty equipment shall be discontinued within 15 minutes until correction is verified by retesting.

304 EQUIPMENT MAINTENANCE AND OPERATING PRACTICES: All equipment associated with delivery and loading operations shall be maintained to be leak free, vapor tight and in good working order. Gasoline shall not be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation to the atmosphere. Purging of gasoline vapors and of JP-4 (jet petrol) vapors is prohibited.

305 EXEMPTIONS:

305.1 Less Than 120,000 Gallons Per 30 Day Period: At bulk plants built before October 2, 1978, vapor loss control specified in Section 301.2b is not required at the outloading rack when all of the following are complied with:

~~a.After April 6, 1992, the bulk plant loads less than 120,000 gallons (454,800l) of gasoline into delivery vessels in any consecutive 30-day period. Any plant that becomes subject to all of the provisions of Section 301.2b by exceeding this threshold will remain subject to these provisions even if its output later falls below the threshold.~~

~~b.Keep current records of amount of gasoline loaded and keep them readily accessible to the Division upon request for at least three (3) years.~~

~~c.Load outgoing gasoline using submerged fill only.~~

~~d.The owners or operators of the bulk plant or the owners or operators of the delivery vessel shall observe all parts of the transfer and shall discontinue the transfer if any leaks are observed.~~

~~305.2 Opening Hatches: When VOC vapors from organic liquids are present within a non-exempt delivery vessel, authorized government agents as well as owners/operators and their contractors may open vapor containment equipment while performing operations required by Division rules 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 onloading is complete or delivery vessel has stopped before opening hatch or other vapor seal.~~

~~b.Reclose hatch or other sealing device within 3 minutes of opening.~~

~~c.Limit windspeed at opened hatch or other opened sealing device to not more than 3 mph (1.34 m/sec).~~

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 BBBBBB- 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 cm^2 ~~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 cm^2 ~~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.

303.2 **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 cm^2 ~~per~~ 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 ~~vapor~~ gasoline is being transferred, for liquid and vapor leaks and for faulty equipment. ~~In these monthly inspections, detection methods incorporating sight, sound, smell and/or touch may be used.~~ 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 ~~loading facility or by a consultant, at the expense of the owner.~~ gasoline plant or bulk gasoline terminal. Testing shallbe done according to procedures in Section ~~501~~ 504 of this rule, except that EPA Method 21 shall be used to test for leaks from a ~~vapor collection/ processing unit~~ 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 ~~504.2~~ 504 of this rule. Prio r to testing, the owner or operator shall notify the Control Officer of the date, time and location of the testing. The Control Officer ~~or his representatives~~ shall at their discretion observe the tests.

~~402 COMPLIANCE SCHEDULE: By September 30, 1995, the owner or operator of any loading facility which requires modification subject to a requirement of Section 300 of this rule shall~~

~~submit to the Control Officer for approval an emission control plan and a schedule for achieving compliance with all requirements by April 30, 1996. The plan shall specify the date of completion of each major step leading to compliance.~~

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 cm^2 (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 cm^2 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.

~~403~~ **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 LEAK DETECTION - TEST PROCEDURE: During loading into or unloading out of delivery vessels, the peripheries of all potential sources of leakage at the loading facility are checked with a combustible gas detector or organic vapor analyzer (OVA) as follows:~~

~~501.1 Pressure: A pressure tap shall be placed in the loading facility's vapor control system, as close as possible to the delivery vessel's tank. The pressure shall be recorded periodically during testing, at least once every minute. Instantaneous maximum pressure shall be recorded either automatically or by visual observation. 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.~~

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:

~~501.2~~ **a. Calibration:** Within four (4) hours prior to monitoring, the ~~combustible gas detector~~ CGD or OVA shall be properly calibrated ~~with 10,600 ppm propane by volume in air for a 50 percent lower explosive limit (LEL) response.~~ for a 20 percent lower explosive limit (LEL) response or to 10,000 ppm with methane.

~~501.3~~ **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.

~~501.4~~ **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 ~~a potential or actual~~ an actual or potential leak source, the probe shall be positioned to locate the point of highest meter response.

~~501.5~~ **d. Probe Position:** The probe inlet shall be positioned in the path of the vapor flow from ~~a~~ 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.

~~501.6~~ **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.

~~501.7~~ **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 ~~delivery vessel~~ gasoline cargo tank vapor collection system, a loading rack's vapor loss control devices, a gasoline loading facility, or a vapor ~~collection/processing~~ 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 ~~three~~ 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.

504 COMPLIANCE DETERMINATION - TEST METHODS INCORPORATED BY REFERENCE: ~~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.~~ 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.

i. 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 Isoteniscope.

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).

~~504.1 Vapor Collection/Processing System: Control efficiency of a vapor collection/-processing system shall be determined according to EPA Reference Method 25A or Method 25B subsequent to the Control Officer's approval of the test protocol. Leak tests to verify a gas-tight state of the equipment associated with the vapor collection/-processing device, including the piping outside of the loading area, shall be conducted according to EPA Reference Method 21. Gas volume flow rates shall be determined by Method 2B for a thermal oxidizer; otherwise, by Method 2A.~~

~~504.2 Vapor Balance And Loading Systems: Vapor tightness shall be determined using the method described in Section 501 of this rule.~~

~~504.3 True Vapor Pressure shall be determined by ASTM Method 2879-83 and by temperature measurement under actual conditions using an instrument accurate to within ±1 degree Fahrenheit or ±0.5 degree Celsius. For purposes of recording and reporting, the Reid vapor pressure and the foregoing temperature determination may be used in conjunction with the method of American Petroleum Institute Bulletin 2517, February, 1980, to determine true vapor pressure, unless the Control Officer specifies ASTM Method 2879-83.~~

~~504.4 Reid Vapor Pressure shall be determined by ASTM Method D 323-82 or by ASTM Method D 5191~~

NOTICE OF PROPOSED FINAL RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS RULE
352: GASOLINE DELIVERY VESSEL TESTING AND USE
PREAMBLE

1. **Rule affected** **Rulemaking action**

Rule 352: Gasoline Delivery Vessel Testing and Use Amended

2. **Statutory authority for the rulemaking:**

Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. **The effective date of the rule:**

Date of adoption: November 2, 2016

4. **List of public notices addressing this rulemaking:**

Notice of Briefing to Maricopa County Manager: May 2015
Notice of Stakeholder Workshops: June 30, 2015, September 14, 2015, and February 22, 2016
Notice of Maricopa County Board of Health Meeting: April 25, 2016
Notice of Proposed Rulemaking: 22 A.A.R. 1242, May 13, 2016

5. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name: Cheri Dale or Hether Krause

Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, Arizona 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

6. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary: Rule 352 (Gasoline Delivery Vessel Testing and Use) limits the emission of volatile organic compounds (VOCs) from gasoline delivery vessels and applies to any gasoline delivery vessel used to receive or deliver gasoline within Maricopa County. Rule 352 also applies to all persons who own, operate, maintain, repair or test the delivery vessel. Maricopa County Air Pollution Control Regulation, Rule 352, was last revised over fifteen years ago. The revisions to Rule 352 updated the rule to use current industry language; updated test methods; and clarified the loading requirements for bulk terminals, bulk plants and gasoline dispensing facilities. In addition, the revisions to Rule 352 addressed the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS).

Background: As early at the 1960's, the Maricopa County Health Department (as the department was then called), Air Pollution Control regulations, Section IV, Handling of Materials, Regulation 1, required "Material such as…gasoline or other volatile compounds…be kept, processed, used, and transported in such a manner and by such means that they will not unreasonably leak, escape, evaporate or be otherwise discharged into the ambient air so as to cause or contribute to air pollution…" This early rulemaking established the basis for the current Rule 350. In 1970, the passage of the Clean Air Act established federal air quality standards.

Congress established the basic structure of the Clean Air Act (CAA) in 1970. The CAA requires the U.S. Environmental Protection Agency (EPA) to establish national ambient air quality standards (NAAQS) for common and widespread pollutants based on the most current science available. For areas that were determined to be in nonattainment of the NAAQS, the state was required to adopt federally enforceable state implementation plans (SIP) in order to achieve and maintain air quality and meet the federally established air quality standards (the NAAQS)[2]. The states were responsible for developing and implementing rules that require reasonably available control technology (RACT) for sources of VOCs located in the designated ozone nonattainment areas. Local air agencies were required to establish RACT for source categories not already covered by EPA's Control Techniques Guidelines (CTGs) as well as tighten RACT for source categories for which RACT had already been defined in the NAAQS[3]. EPA defined RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility" (44 FR 53762; September 17, 1979).

In the 1970's, using the EPA NAAQS and CTGs to identify the established RACT standards, the Maricopa County Bureau of Air Pollution Control (as the department was then called) revised and renumbered the county air pollution rules and regulations. The revised county rules established specific requirements for petroleum products in Regulation III, Rule 33: Storage and Handling of Petroleum Products.

On March 3, 1978, EPA promulgated a list of ozone nonattainment areas under the provisions of the Clean Air Act, as amended in 1977 (1977 CAA or pre-amended Act). Maricopa County was included on such list 43 FR 8964, March 3, 1978). On February 24, 1984, EPA notified the Governor of Arizona, that the Maricopa County Air Pollution Control District's (MCAPCD), as the department was then called) portion of the Arizona SIP was inadequate and requested that deficiencies in the existing SIP be corrected (EPA's SIP-Call, 49 FR 18827, May 3, 1984). The MCAPCD was in the process of revising Rule 33 to create Rules 350, 351, 352, and 353 to address the RACT requirements when EPA again notified the Governor of Arizona (May 26, 1988) that MCAPCD's portion of the Arizona SIP was inadequate and requested that deficiencies relating to VOC controls and the application of RACT in the existing SIP be corrected (EPA's second SIP-Call, 53 FR 34500, September 7, 1988).

On November 15, 1990, the Clean Air Act Amendments of 1990 were enacted. In an amended section of the CAA, Congress statutorily adopted the requirement that nonattainment areas fix their deficient RACT rules and established a deadline of May 15, 1991 for states to submit corrections of those deficiencies. The MCAPCD further revised

Rules 350, 351, 352, and 353 to meet the RACT standards. Rule 350 (Storage of Organic Liquids at Bulk Plants), revised July 13, 1988, and April 6, 1992, was approved by the EPA effective October 5, 1995 (60 FR 46024). Rule 351(Loading Organic Liquids) revised July 13, 1988 and November 16, 1992, was approved effective October 5, 1995 (60 FR 46024). Rule 352 (Gasoline Delivery Vessel Testing and Use), revised July 13, 1988, and November 16, 1992, was approved effective October 5, 1995, (60 FR 46024). Rule 353 (Transfer of Gasoline into Stationary Dispensing Tanks) revised July 13, 1988, and April 6, 1992, was approved effective March 4, 1996 (61 FR 3578).

More recently, EPA developed national emission standards for hazardous air pollutants (NESHAPS) for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities (73 FR 1933, Jan. 10, 2008); a NESHAP for Gasoline-Dispensing Facilities (73 FR 1945, Jan. 10, 2008); and the NESHAP for Organic Liquid Distribution (non-gasoline) (69 FR 5063, Feb. 3, 2004). These NESHAPS are often referred to as the maximum achievable control technology (MACT) standards since they were developed to reflect the maximum achievable degree of HAP emission reduction. New MACT standards required additional or new emissions testing requirements reflecting the new technologies. New and revised test methods and leak detection methods were required in these MACT standards. Although the MACT standards typically apply to large sources, there are test methods and other good practices that are or may be applicable to small area sources of VOC emissions. Both MACT standards included requirements for gasoline cargo tanks, the industry term now used for delivery vessels.

Rule 352 Rulemaking Background: Rule 352 was revised in 1992 and 1999 in order for the county to comply with RACT and other policy statements published by the EPA. In 2013, a limited scope rulemaking clarified the definition of volatile organic compounds within all of the Maricopa County Air Quality rules. In this rulemaking, the Maricopa County Air Quality Department (department) revised rule language to improve the clarity of the gasoline loading requirements and updated the test methods. This rulemaking included revisions to improve the clarity and enforceability of the regulatory requirements for gasoline cargo tanks.

Other revisions included in this rulemaking were the relocation of any exemptions previously found in Section 300 to a new section in Section 100; the inclusion of definitions specific to the gasoline industry and in line with terms defined the Code of Federal Regulations; the clarification of the regulatory requirements for loading gasoline at bulk terminals, bulk plants and gasoline dispensing facilities; increased the amount of notification time in advance of gasoline cargo tank testing; and the addition of the use of optical gas imaging as an alternative work practice to monitor and identify leaking equipment.

Issues Raised and Discussed During this Rulemaking Process:

Prior to Stakeholder workshops, one Stakeholder submitted a written request to the department concerning the notification time for testing of gasoline cargo tanks. Rule 352 requires the owner or operator or tester of a gasoline cargo tank to notify the Control Officer "…no more than 24 hours in advance of [vapor tightness] testing." The Stakeholder expressed concern that gasoline cargo tanks operating in different regulatory jurisdictions require different notification requirements; this presented a challenge for the Stakeholder when conducting vapor tightness testing for gasoline cargo tanks that operate outside of Maricopa County. The department acknowledged this "challenge presented by the inconsistency of our [the department] testing notification periods compared to those required by other jurisdictions." (Department letter to Massey's Truck and Tank Repair, June 11, 2014) At that time, the department conditionally agreed to allow the notification time of up to 72 hours in advance of the gasoline cargo tank testing. This rule revision now allows up to 72 hours notification time prior to gasoline cargo tank testing.

The department held three Stakeholder workshops: June 30, 2015, September 14, 2016, and February 22, 2016. Stakeholders included representatives from APS, Caljet, CDM Smith, Cemex, City of Glendale, City of Mesa, City of Phoenix, Coastal Transport, EnCore Consulting, Envirosure Solutions, Kiewit, Kinder Morgan, Luke Air Force Base, Pinal County, Ping, Polar Services, SRP, Tamura Environmental, Washington Elementary School, and EPA.

The current definitions of "bulk tank" and "bulk terminal" were confusing. Stakeholders recommended clarification of the terms and their applicability to be consistent throughout the department's rules that pertain to gasoline. The department acknowledged the inconsistencies between the "gasoline rules" and revised the rules accordingly.

Stakeholders questioned if non-gasoline cargo tanks were subject to the required pressure testing requirements of Rule 352. The rule did not seem clear if there were any exceptions to

this pressure test requirement. Rule 352, Section 305.1 does provide an exemption from the pressure testing requirements if a gasoline cargo tank meets all of the conditions listed in the section. The rule retains the same exemptions previously located in Section 305.1 and now located in Section 103 (Partial Exemptions). Additional questions were asked concerning the rule's applicability to a cargo tank that only loads aviation gasoline. The MACT standards that include requirements for cargo tanks exempt the following: "…transfer of aviation gasoline within the airport, is not subject to this subpart. (40 CFR 63.11081(d) and 40 CFR 63.11111(g))." Maricopa County included an exemption from Rule 352 for cargo tanks that load only the following fuels: aviation fuel, diesel fuel and liquefied petroleum gas.

Description of Rule 352 Amendments:

Amended the following throughout the rule:

- Changed the term "transfer" to "loading"
- Changed the term "delivery vessel" to "gasoline cargo tank"
- Deleted the word "person" and inset the words "owner or operator"
- Deleted past compliance dates
- Added or revised specific rule section references

Amended the following in Section 100:

- Revised Section 101 (Purpose)
- Revised Section 102 (Applicability)
- Added Section 103 (Exemptions)

Amended the following in Section 200:

- Deleted the definition 2-POINT SYSTEM
- Added the definition AVIATION GASOLINE (AVGAS)
- Added the definition BULK GASOLINE PLANT
- Added the definition BULK GASOLINE TERMINAL
- Added the definition COAXIAL VAPOR BALANCE SYSTEM
- Added the definition DUAL-POINT VAPOR BALANCE SYSTEM
- Revised the definition of EXCESS GASOLINE DRAINAGE
- Revised the definition of GASOLINE
- Deleted the definition GASOLINE DELIVERY VESSEL
- Added the definition GASOLINE CARGO TANK
- Added the definition GASOLINE DISPENSING FACILITY
- Revised the definition of LEAK FREE
- Revised the definition of MARICOPA COUNTY (MC) PRESSURE VAPOR TIGHTNESS TEST
- Revised the definition of PURGING
- Revised the definition of STAGE 1 VAPOR RECOVERY SYSTEM (VR SYSTEM)
- Added the definition SUBMERGED FILL
- Revised the definition of SWITCH LOADING

Amended the following in Section 300:

- Deleted Section 301 PREVENT LEAKS AND SPILLS
- Deleted Section 302 GASOLINE DELIVERY VESSEL LEAK TEST REQUIRED
- Deleted Section 303 DISPLAY A VALID DECAL
- Deleted Section 304 PURGING PROHIBITED
- Deleted Section 305 EXEMPTIONS
- Added Section 301 GASOLINE CARGO TANK REQUIREMENTS
- Added Section 301.1 Gasoline Cargo Tank Integrity
- Added Section 301.2 Maricopa County Air Pollution Vapor Tightness Certification
- Added Section 301.3 Purging
- Added Section 302 LOADING OF GASOLINE
- Added Section 302.1 Loading of Gasoline into a Gasoline Cargo Tank from a Bulk Plant
- Added Section 302.2 Loading of Gasoline at a Bulk Terminal
- Added Section 302.3 Loading of Gasoline into a Stationary Gasoline Storage Tank at a Non-Retail Gasoline Dispensing Facility
- Added Section 302.4 Loading of Gasoline into a Stationary Gasoline Storage Tank at a Retail Gasoline Dispensing Facility

Amended the following in Section 400:

- Revised Section 401 MARICOPA COUNTY AIR POLLUTION VAPOR TIGHTNESS TESTING
- Revised Section 401.1 Notification of Required Testing
- Revised Section 401.2 Registration

- Revised Section 401.3 Expiration
- Revised Section 401.4 Loss, Defaced or Destroyed Maricopa County Vapor Tightness Certification Decal
- Revised Section 402 TIME FRAME FOR INSTALLATION OF CONTROL DEVICE

Amended the following in Section 500:

- Renumbered Section 501 RECORDKEEPING AND REPORTING REQUIREMENTS to Section 502
- Added Section 501 GASOLINE CARGO TANK VAPOR TIGHTNESS TESTING REQUIREMENT
- Renumbered Section 502 MONITORING FOR LEAKS to Section 503
- Added Section 503.1 Combustible Gas Detector or an Organic Vapor Analyzer (OVA)
- Added Section 503.1 Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3
- Added Section 503.3 Optical Gas Imaging
- Renumbered Section 503 COMPLIANCE to Section 504
- Renumbered Section 504 TEST METHODS to Section 505
- Added Section 505.1 Optical Gas Imaging
- Added Section 505.2 EPA Method 21
- Renumbered Section 504.1 EPA Method 27 to Section 505.3
- Renumbered Section 504.2 American Society for Testing Materials…to Section 505.4 and revised
- Renumbered Section 504.3 Test of Internal Vapor Valves to Section 505.5
- Renumbered Section 504.4 Delivery Vessel Vapor Tightness Test to Section 505.6

7. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
   - **(a)** Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
   - **(b)** Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complied with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. The County failed to meet 2008 8-hour ozone standard by the marginal area attainment date of July 20, 2015. The EPA issued a final rule, effective June 3, 2016, reclassifying the Maricopa County area to "moderate" (published at 86 FR 26697, May 4, 2016). Further, a portion of the County was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the County to continue to maintain the measures and requirements that allowed the

county to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM_{10} 24-hour standard. This is the only serious PM_{10} nonattainment area in Arizona. Revisions to Rule 350 addressed the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The amendments in Rule 352 included Reasonably Available Control Technology (RACT).

The department complies with A.R.S. § 49-112(B) in that the amendments to Rule 352 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49; address the peculiar local conditions in Maricopa County; are authorized under A.R.S. Title 49, Chapter 3, Article 3; and are not in lieu of a state program.

8. **Documents or studies referenced and/or reviewed for this rulemaking:**

Not applicable

9. **Showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**

Not applicable

10. **Summary of the economic, small business, and consumer impact:**

The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055. The economic summary is based on the number of Title V and Non-Title V permits issued by the Maricopa County Air Quality Department.

An identification of the rulemaking.

This rulemaking revised Rule 352 (Gasoline Delivery Vessel Testing and Use). Rule 352 was re-titled: Gasoline Cargo Tank Testing and Use.

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.

The persons who will be directly affected by and bear the costs of this rulemaking to revised Rule 352 will be facilities in Maricopa County that have a gasoline cargo tank which is used to load gasoline, and to all persons who own, operate, maintain, repair, or test such a gasoline cargo tank. Revised Rule 352 does not impose new requirements on facilities that provide or receive testing per Rule 352 and no costs would be incurred for compliance with the rule revisions.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**

Because this rulemaking did not impose any new compliance burdens on permitted regulated entities or introduce additional regulatory requirements, the department deemed that none of the revisions have potentially significant economic impacts on permitted sources. It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

The benefits of the rule revision are anticipated to be a result of the following changes:

- Added definitions specific to the gasoline industry and in line with terms defined the Code of Federal Regulations;
- Clarified the regulatory requirements for loading gasoline at bulk terminals, bulk plants and gasoline dispensing facilities;
- Increased the amount of notification time in advance of gasoline cargo tank testing;
- Added optical gas imaging as an alternative work practice to monitor and identify leaking equipment.

Revised Rule 352 did not impose new requirements on facilities that provide testing per Rule 352 and no costs will be incurred for compliance with the rule revisions.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity provided by the Rule 352 revisions will provide a benefit to the regulated community; it will take less time for sources subject to

the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision will not impose increased monetary or regulatory costs on individuals so regulated.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions did not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated.

(a) **An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County that have a gasoline cargo tank which is used to load gasoline, and own, operate, maintain, repair, or test such a gasoline cargo tank.

(b) **The administrative and other costs required for compliance with the rulemaking.**

This rulemaking updated and clarified existing rule provisions and definitions to be consistent with federal performance standards; and to reduce confusion and improve understanding and readability. The department considered the implications of the proposed amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**

By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**

This rulemaking did not impose any new compliance burdens on regulated entities that are permitted or introduce additional regulatory requirements and will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated. As such, there are no costs to pass through to consumers, which means there are no impacts on consumers.

A statement of the probable effect on state revenues.

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

11. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name: Cheri Dale or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, AZ 85004
Telephone: (602) 506-6010

Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

12. **Description of the changes between the proposed rule, including supplemental notices and final rule:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R 1242), the department included the following additional amendments:

- Deleted the term "vessel" or "delivery vessel" and replaced with the words "gasoline cargo tank" to maintain consistency throughout rule. The following sections were revised:
  - Section 103.3
  - Section 208
  - Section 211
  - Section 301.2.b(2)
  - Section 401.2
  - Section 501.1(b)
  - Section 502
  - Section 505.5(a) and (b)
  - Section 506.6
- Changed "solely in another state" to "outside of Arizona" in Section 103.2(b)(1)
- Re-structured Section 103.4(a)(1) to delete "when" at the end of the introductory statement, to add "when" to the beginning of Section 103.4(a)(1)(a) and to change Section 103.4(a)(1)(b) from "A gasoline cargo tank has stopped" to "After a gasoline cargo tank has come to a complete stop"
- Deleted the term "tanks" from Section 215.1
- Deleted Section 215.3 (Definition of "Submerged Fill") text regarding API Standard 650 Compliant, because such provision is applicable to organic liquids not gasoline.
- Changed the text in Section 302.3(i) to be consistent with the text in Section 302.2(e) regarding capturing and collecting spilled gasoline
- Added new Section 302.3(j) to be consistent with the text in Section 302.4(b) regarding the conditions under which a stationary gasoline storage tank shall be loaded with gasoline
- Changed the text in Section 302.4(a) to be consistent with the text in Section 302.2(a) regarding verifying and maintaining the gasoline cargo tank integrity
- Changed the title of the application for a Maricopa County Vapor Tightness Certification decal.
- Deleted the phrase "or a designee of the Control Officer," in Section 502.1
- Added "the gasoline cargo tank unit number" to Section 502.2(a) regarding information that must be included in the "Maricopa County Vapor Tightness Certification Decal Application"
- Included text in Sections 504 and 505 that allows for the use of alternative test methods to determine compliance with the rule and that allows test methods as approved by the Administrator to be used and clarified the provision regarding when more than one test method is permitted for a compliance determination.
- Deleted Section 504.3 (Test Methods-Test of Internal Vapor Valves) because requirements are in Sections 504.1 (Compliance-Pressure and Vacuum Tests) and 504.2 (Compliance-Test of Internal Vapor Valves)
- Deleted Section 504.4 (Test Methods-Delivery Vessel Vapor Tightness Test) because requirements are in Section 503.1 (Monitoring for Leaks-Combustible Gas Detector or an Organic Vapor Analyzer)

13. **Summary of the comments made regarding the rule and the department response to them:**

No comments were received during the comment period.

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

Not applicable

15. **Incorporations by reference and their location in the rule:**

The following test methods are incorporated by reference in Rule 352, Section 505:

- Optical Gas Imaging: Alternative Work Practice for Monitoring Equipment Leaks, 40 CFR 60.18(g)
- 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)

16. **Was this rule previously an emergency rule?**

No

17. **Full text of the rule follows:**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 352
GASOLINE ~~DELIVERY VESSEL~~ CARGO TANK TESTING AND USE
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~~Revised 07/13/88~~
~~Revised 11/16/92~~
~~Revised 05/05/99~~
~~Revised 09/25/13~~

Revised 07/13/1988; Revised 11/16/1992; Revised 05/05/1999; Revised 09/25/2013; and **Revised 11/02/2016**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 352
GASOLINE ~~DELIVERY VESSEL~~ CARGO TANK TESTING AND USE

SECTION 100 – GENERAL

101 **PURPOSE:** To limit emissions of volatile organic compounds (VOC) from gasoline ~~delivery vessels~~ cargo tanks.

102 **APPLICABILITY:** This rule applies to any gasoline ~~delivery vessel~~ cargo tank which is used to ~~receive or deliver~~ load gasoline within Maricopa County, and to all persons who own, operate, maintain, repair, or test such a ~~vessel~~ 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 2-POINT SYSTEM: A fill pipe and a vapor recovery pipe pair which are in close proximity to one another and are connected directly to and emerge directly above the tank they serve.~~

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.

~~202~~ **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 ~~delivery~~ loading hose,~~;~~ or any quantity of gasoline ~~lost during those processes~~ 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.

~~203~~ **207 GASOLINE:** Any petroleum distillate, petroleum distillate/alcohol blend, petroleum distillate/organic compound blend, or alcohol having ~~or blend of petroleum distillate with other combustible liquid(s), such as alcohol, that is used as a fuel for internal combustion engines and has~~ 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. ~~For the purposes of this rule, liquefied petroleum gas (LPG) is excluded.~~

~~204 GASOLINE DELIVERY VESSEL: Any vehicular-mounted container such as a tanker truck, tank trailer, cargo tank or any other wheel-mounted container used to transport gasoline. This includes any hoses the vessel carries through which deliveries must be made.~~

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.

~~205~~ **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.

~~206~~ **211** **LEAK FREE:** Having no single liquid gasoline leak of more than 3 drops per minute from a gasoline ~~delivery vessel~~ 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.

~~207~~ **212** **MARICOPA COUNTY (MC)** ~~PRESSURE~~ **VAPOR TIGHTNESS TEST:** The complete pressure, vacuum, and vapor-valve testing of a gasoline ~~delivery vessel~~ cargo tank that is performed according to Maricopa County specifications as described in ~~subsection 302.2~~ Section 501 of this rule.

~~208~~ **213** **PURGING:** Removing, cleaning, or scouring out gasoline vapors from all or a portion of a ~~delivery vessel~~ gasoline cargo tank by active or passive means and emitting the vapors into the atmosphere.

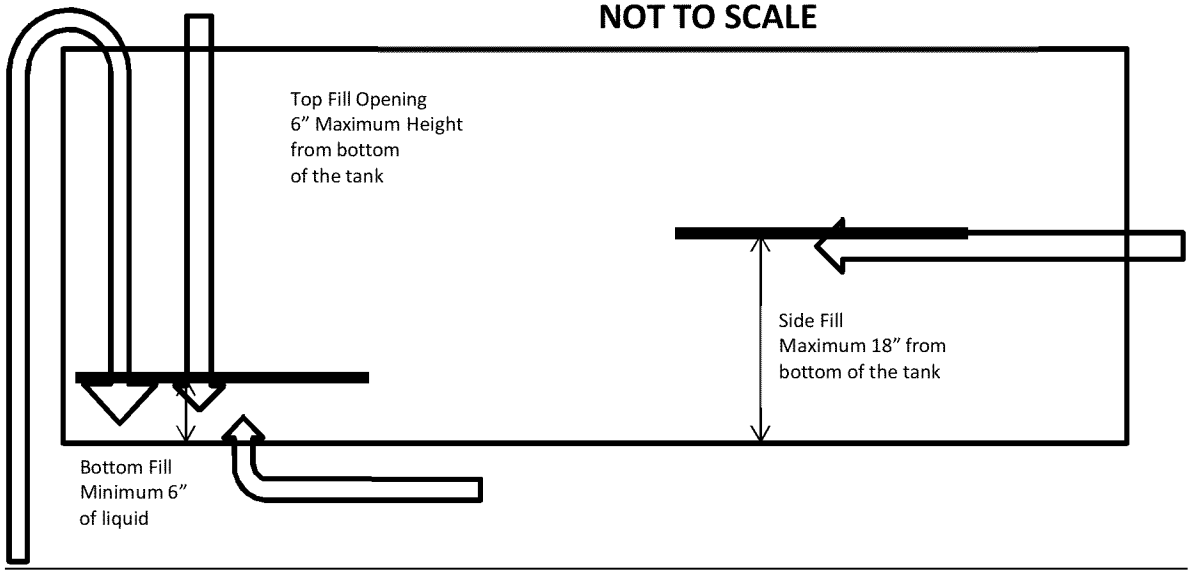
~~209~~ **214** **STAGE 1 VAPOR RECOVERY SYSTEM (VR SYSTEM):** Any piping, hoses, equipment, and/or devices which are used to collect, store, or process gasoline vapors displaced by the ~~delivery~~ loading of gasoline and also by the onloading of gasoline into a vapor laden ~~delivery vessel~~ gasoline 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



~~210~~ **216** **SWITCH LOADING:** Loading diesel fuel into a ~~delivery vessel~~ gasoline cargo tank whose previous load was gasoline; or loading any liquid not subject to this rule into a ~~delivery vessel~~ gasoline cargo tank whose previous load was gasoline.

~~211~~ **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 ~~LEL (lower explosive limit) subsequent to calibration~~ lower explosive limit (LEL) when calibrated with a gas specified by the manufacturer and ~~is~~ used according to the manufacturer's instructions.

SECTION 300 – STANDARDS

~~301 PREVENT LEAKS AND SPILLS:~~

301.1 Vessel Integrity: In Maricopa County, no person shall store or transport gasoline in or otherwise use or operate any gasoline delivery vessel unless such vessel is designed and maintained to be vapor tight and leak free.

301.2 Onloading Measures:

a. At any bulk loading rack, connect a vapor return hose before connecting any loading hose.

b. At a bulk plant, connect an additional vapor hose before connecting any additional loading hose, unless an assisted vapor return system is serving the vapor hose that is already connected.

c. Use a bucket or other effective capture device to catch any liquid dripping during the connection or disconnection of both the loading hose from the truck and the vapor hose from the loading dock's vapor receiving pipe.

(1) Either dispose of the captured liquid in a tank designated for that purpose, or use a receptacle or a material designed to absorb the liquid.

(2) Any gasoline that escapes or spills must be collected and contained.

301.3 Prevent Spills and Excess Drainage: A driver/operator of a gasoline delivery vessel shall:

a. Thoroughly drain a fill hose and a vapor recovery hose into the dispensing tank before disconnecting it from the tank's fittings.

b. Connect and disconnect fill 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.

c. Spills and any gasoline that is deposited in or on an area other than within the dispensing 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.

301.4 Vapor Hose use Required at Retail Gas Stations:

a. A driver/operator shall not deliver gasoline to a dispensing tank at a retail gas station unless a vapor hose is first connected from the vessel to a vapor return-line serving the tank.

b. No delivery shall be made to a retail tank if:

(1) it is not served by a vapor return, or

(2) if it has a locked cap that cannot be removed, or

(3) if broken fittings prevent correct connection of the vapor hose.

301.5 Prevent Vapor Escape During Deliveries: For gasoline dispensing tanks that are equipped with a Stage 1 vapor recovery system (VR System):

a. During delivery, the vessel 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 delivery vessel.

b. Connect a vapor recovery hose before connecting any gasoline delivery hose.

c. Disconnect a delivery hose from a tank before disconnecting the vapor recovery hose.

d. Restriction on Multiple Connection: A delivery vessel shall not simultaneously have more than one gasoline delivery hose connected, unless each delivery hose is connected to a dispensing tank's 2-point system that already has a vapor hose connecting it to the vessel.

301.6 Vapor Recovery Systems Having Remote Vapor Return Lines: If a delivery vessel's vapor hose is connected to a vapor return line that is not part of a 2-point system, then there shall not be more than one gasoline delivery hose connected to the vessel, and no other hoses connected to a fill tube; viz., no more than one compartment of the delivery vessel shall be emptied at a time.

302 GASOLINE DELIVERY VESSEL LEAK TEST REQUIRED: A gasoline delivery vessel shall first pass the MC Pressure Test before delivering or onloading gasoline within Maricopa County, and to continue, must pass the MC Pressure Test each year thereafter. This does not apply to loads that originate solely in another state, nor to loads originating in Maricopa County that are not delivered in Maricopa County.

302.1 Testing: The MC Pressure Test shall be performed according to subsection 302.2.

a. Scheduling and notification of an initial test or annual retest shall be done in accordance with subsection 401.1 and subsection 401.3.

b. A tester shall record the results of a Pressure Test according to the format in subsection 501.2.

c. A valid Maricopa County Air Quality Department decal shall be affixed to the vessel consequent to passing the MC Pressure Test before the vessel may deliver or onload gasoline.

d. An owner or operator of a delivery vessel shall comply with subsection 401.2 registration requirements to obtain a valid Maricopa County Air Quality Department decal after a successful MC Pressure Test.

302.2 MC Pressure Test: A vessel that is being MC Pressure Tested shall pass all 3 of the following pressure subtests, in the following order, and use the same vapor hose during the test as will be used for deliveries by that same unit:

a. Positive Pressure Subtest: 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 504 of this rule; and

b. Vapor Valve Subtest: Lose no more than 5.0 inches (127 mm) of water column in 5.0 minutes, measured in the vapor system after the vessel 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 subsection 503.2 of this Rule 352; and

c. Partial Vacuum Subtest: 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 504 of this rule.

d. Pressure Instability: A subtest is invalidated if during either of the pressure subtests, more than 1/2 inch water pressure is gained, or if during the vacuum test the vacuum is increased by more than minus ½ inch.

302.3 A vessel shall be repaired, retested, and pass all 3 subtests in the same testing period within 15 days of testing if it does not pass all 3 subtests of subsection 302.2 of this rule.

303 DISPLAY A VALID DECAL: Each gasoline delivery vessel shall clearly display a valid Maricopa County Air Quality Department decal that is permanently mounted near the front on the right (passenger) side of the vessel.

304 PURGING PROHIBITED:

304.1 No person shall purge gasoline vapors into the atmosphere from a delivery vessel unless the following conditions are met:

a. 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

b. Such purging shall be done only after all delivery 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.

304.2 An operator of a delivery vessel shall not purge gasoline vapors from such vessel as a passive result of switch loading, except for vessels exempted by subsection 305.1.

305 EXEMPTIONS:

305.1 A delivery vessel is exempt from pressure test requirements of Section 302 if all of the following conditions are met:

a. The vessel was placed in operation before July 13, 1988; and

b. The vessel transported gasoline within Maricopa County before January 1, 1998; and

c. The vessel never loads at a gasoline terminal; and

d. The vessel serves only farm tanks and/or those non-resale dispensing operations having a yearly throughput not exceeding 120,000 gallons of gasoline, verified by monthly records pursuant to subsection 501.1a; and

e. The vessel either has a sticker affixed to it that indicates to a bulk plant operator that the vessel may be loaded in Maricopa County, or has an affidavit signed by an owner or officer of the operating company filed with the Maricopa County Air Quality Department, with a complete copy of the signed affidavit available in the vehicle for inspection by a bulk plant operator or the Control Officer.

305.2 An operator of a delivery vessel exempted by subsection 305.1 is allowed to incidentally purge gasoline vapors from such vessel as a passive result of loading, or briefly when lids/ports must be open for inspection.

305.3 Opening Hatches on Non-Exempt Vessels:

~~a. Required by Rule: Owners/operators, their contractors, and authorized government agents may open vapor containment equipment on a nonexempt gasoline delivery vessel 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 after onloading is complete and after a delivery vessel has stopped before opening its hatch or other vapor seal.~~

~~(2) Reclose hatch or other sealing device within 3 minutes of completing the required procedures.~~

~~(3) Limit windspeed at opened hatch or other opened sealing device to not more than 3 mph (1.34 m/sec), using a barrier if necessary.~~

~~b. Defueling: Hatches of a delivery vessel may be open for monitoring to prevent overflow during the period that the vessel is receiving 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 hose before a gasoline delivery hose do not apply to coaxial VR connection fittings.~~

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 ~~TESTING~~ TEST: Testing required by ~~subsections 302.2a, b, and c~~ Section 301.2 of this rule, shall be conducted by the owner or operator of the ~~delivery vessel~~ gasoline cargo tank., ~~or by a consultant, at the expense of the owner or operator.~~ The Control Officer may at any time observe the tests. An owner or operator shall comply with the following provisions:

Notification of Required Testing: The owner, operator, or tester shall notify the Control Officer as follows for each ~~vessel~~ gasoline cargo tank being tested to meet requirements of ~~Section 302 or subsection 301.2~~ 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; ~~and~~

b. ~~Give~~ 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 ~~24 hours in advance of~~ 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 ~~302~~ 301.2 of this rule requirements, except if the Control Officer gives specific, advance permission for a particular occasion.

Registration: To obtain a Maricopa County Vapor Tightness Certification decal, ~~do~~ the following information shall be submitted to the Control Officer for each ~~vessel~~ gasoline cargo tank that passes the required ~~annual~~ gasoline cargo tank vapor tightness test:

a. ~~Assemble in 1 packet the following 3 items: (1) A properly~~ A completed "~~APPLICATION FOR AIR POLLUTION VAPOR RECOVERY TIGHTNESS CERTIFICATION~~MARICOPA COUNTY VAPOR TIGHTNESS CERTIFICATION DECAL APPLICATION"(~~also calle d "The Application" application), and~~ that includes, at a minimum, all of the following information required by Section 502.2 of this rule.

~~(2)~~ **b.** A ~~properly~~completed copy of the ~~MCESD~~ "Maricopa County Air Quality Department Gasoline Cargo Tank Vapor Tightness ~~"Tank Truck Leak~~ Certification Check List"(checklist), and

~~(3)~~ **c.** The annual fee remittance~~. (The fee amount appears~~ as listed in Rule 280.)

~~b. Send or convey this single packet to the Maricopa County Air Quality Department at the address on the top of the application.~~

~~c.~~ **d.** Upon receipt of ~~these 3 properly completed items~~ the completed application, checklist and fee remittance, a Maricopa County Vapor Tightness Certification decal will be issued by the Control Officer.

Expiration:

a. A Maricopa County Vapor Tightness Certification decal that is issued to a ~~vessel~~ 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 ~~vessel~~ 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. ~~For example, if the test is passed between July 1, 2000, through February 28, 2001, the decal expires on June 30, 2001.~~

~~Loss~~ **Lost, Defaced or Destroyed Maricopa County Vapor Tightness Certification Decal:**

a. An owner or operator shall notify the Control Officer immediately if a valid ~~decal/sticker~~ 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 ~~decal/sticker~~ Maricopa County Vapor Tightness Certification decal, if the Control Officer determines that the Department is not at fault.

402 ~~TIME FRAME FOR~~ **INSTALLATION OF CONTROL DEVICE:** An owner or operator of a ~~vessel~~ gasoline cargo tank testing operation who chooses to comply with the Section ~~304~~ 301.3 of this rule purging provisions through the use of a control device shall submit ~~by August 1, 1999~~, an application for a Maricopa County Air Pollution Control Permit and an Operation and Maintenance Plan for the control device. ~~The device shall be fully functioning by May 1, 2000.~~

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.

~~501~~ **502 RECORDKEEPING AND REPORTING REQUIREMENTS:**

502.1 The owner or operator of a gasoline ~~delivery vessel~~ 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, ~~or a designee of 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.

502.2 The records of the gasoline cargo tank vapor tightness certification testing required by Section ~~302~~ 301.2 of this rule, must be recorded in both of the following documents: ~~the "Application for Air Pollution Vapor Recovery Certification"~~ "Maricopa County Vapor Tightness Certification Decal Application" and the "Maricopa County Air Quality Department Gasoline Cargo Tank Vapor Tightness~~"Tank Truck Leak~~ 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 ~~"Application for Air Pollution Vapor Recovery Certification"~~ "Maricopa County Vapor Tightness Certification Decal Application":

(1) Owner's name and address.

(2) ~~Tank ID number, the location of the test, the time of the test, and the date of the test.~~ The manufacturer's ~~Tank ID~~ 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.

~~(3)~~ **(7)** For the pressure ~~subtest~~ test, ~~2~~ two (2) readings: the change in pressure (in inches ~~H2O~~ of water) for Run 1 and the change in pressure for Run 2.

~~(4)~~ **(8)** For the vapor-valve loss test ~~subtest (subsection 302.2b), 1~~ one (1) reading: the total change in pressure during the test.

~~(5)~~ **(9)** For the vacuum test, ~~2~~ 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 ~~"Tank Truck Leak~~ Certification Check List" ~~(or its successor document)~~ shall contain at least the following information:

(1) ~~The same information required in subsections a(1) and a(2) of this subsection 501.2; and~~

(2) ~~The time the subtest began, the initial pressure of the subtest, the finish time, the final pressure of the subtest, and the pressure change between the start and end of the subtest; the vessel's unit number, manufacturer's serial number, the tank capacity, whether the tank was purged of gasoline vapors, and the date of the next leakage test if the set of 3 subtests are not all passed.~~

(3) ~~If the initial pressure test was not passed, one set of readings in the row "Initial Test", also giving the elapsed time if the pressure reached zero before 5 minutes. For example, the row marked "Initial Test" will normally contain the results of the initial failed subtest if any repairs were made subsequent to any pressurization or evacuation of the tank.~~

(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.

~~502~~ **503** **MONITORING FOR LEAKS:** The Control Officer may at any time monitor a ~~delivery vessel~~ gasoline cargo tank, including the vapor collection system, for vapor and liquid leaks to ascertain if it is vapor tight and leak free. ~~Leakage of vapor exceeding 1/5 of the lower explosive limit, or 10,000 ppm as methane, when performed according to subsection 504.4, shall be an exceedance of the vapor tight standard of subsection 301.1.~~ The Control Officer shall follow the test procedure in Section 503.1 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.

~~503~~ **504 COMPLIANCE:** ~~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 **Pressure and Vacuum Tests:** The tests to determine compliance with ~~subsection 302.2a and subsection 302.2c~~ 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 352~~ rule.

504.2 **Test of Internal Vapor Valves:** The tests to determine compliance with ~~subsection 302.2b~~ Section 501.1 of this rule, shall be performed immediately after successfully passing the pressure subtest ~~(pursuant to subsection 302.2a)~~, without performing any intervening maintenance or repair on the vapor valves.

504.3 Confirmation of a vapor leak detected on a ~~vessel~~ gasoline cargo tank during ~~onloading~~ loading shall be determined by properly deploying a pressure tap adapter that conforms to Method 27 provisions, and demonstrating the leak according to ~~subsection 504.4~~ 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 ~~American Society for Testing and Materials (ASTM) Method D 323-90~~ ASTM D323 - 15a: Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).

~~504~~ **505** **TEST METHODS INCORPORATED BY REFERENCE:** ~~The EPA test method as it exists in the Code of Federal Regulations (CFR) (July 1, 1998), as listed below, is 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 504 are available at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, Arizona 85004.~~ 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.

505.1 **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 21to monitor for equipment volatile organic compound leaks.

505.2 EPA Method 21 – Determination of Volatile Organic Compound Leaks.

505.3 EPA Method 27 ~~("~~Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure-Vacuum Test.~~") in 40 CFR 60, Appendix A.~~

505.4 ~~American Society for Testing and Materials (ASTM) Method D 323-90, 1990 (Reid vapor pressure).~~ ASTM D323 - 15a: Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).

~~Test of Internal Vapor Valves:~~

a. ~~Pressurize the delivery vessel to 18 inches (45.7 cm) of water column, using the first 2 procedures of the "Pressure Test" section of EPA Method 27.~~
b. ~~Close all the vessel's internal valves, including the internal vapor valves, thereby isolating the vapor system (vapor return line plus vapor manifold) from the compartments.~~
c. ~~Relieve the pressure in the vapor return line (to atmospheric pressure).~~
d. ~~Seal the vapor return line and after 5.0 minutes record the pressure present in the vapor system.~~

~~Delivery Vessel Vapor Tightness Test: A vapor tight condition will be determined for vessels by the following method:~~

a. ~~Calibration: Within 4 hours prior to monitoring, the combustible gas detector or organic vapor analyzer shall be suitably calibrated for a 20 percent LEL response, or to 10,000 ppm with methane.~~
b. ~~Probe Distance: The probe inlet shall be 1 inch (2.5 cm) or less from the potential leak source when searching for leaks. The probe inlet shall be 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 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 a potential or actual 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 a leak such that the central axis of the probe tube inlet shall be positioned coaxially with the path of the most concentrated vapors.~~

e. ~~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.~~

NOTICE OF FINAL RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 353: GASOLINE IN STATIONARY DISPENSING TANKS
PREAMBLE

1. **Rule affected** **Rulemaking action**

Rule 353: Gasoline in Stationary Dispensing Tanks — Amended

2. **Statutory authority for the rulemaking:**

Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. **The effective date of the rule:**

Date of adoption: November 2, 2016

4. **List of public notices addressing this rulemaking:**

Notice of Briefing to Maricopa County Manager: May 2015
Notice of Stakeholder Workshops: June 30, 2015, September 14, 2015, and February 22, 2016
Notice of Maricopa County Board of Health Meeting: April 25, 2016
Notice of Proposed Rulemaking: 22 A.A.R. 1257, May 13, 2016

5. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name: Cheri Dale or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, Arizona 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-Mail: aqplanning@mail.maricopa.gov

6. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary: Rule 353 (Gasoline in Stationary Dispensing Tanks) limits the emission of volatile organic compounds (VOCs) from gasoline stored in stationary dispensing tanks and from gasoline delivered into such tanks. Revisions to Rule 353 addressed the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS).

The Maricopa County Air Quality Department (department) revised Rule 353 to be consistent with current gasoline industry terms and definitions, clarified the storage and loading requirements of an underground storage tank and an above ground storage tank, updated test methods to be consistent with state and federal test methods, and clarified the inspection requirement for gasoline dispensing facilities that receive gasoline less than once per week. In addition, the amendments corrected typographical or other clerical errors; made minor grammatical changes to improve readability or clarity; modified the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or made various other minor changes of a purely editorial nature. As these changes do not alter the sense, meaning, or effect of the rules, they are not described in detail

here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 17 of this notice.

Background: In the early 1970's, the United States Environmental Protection Agency (EPA) issued transportation control plans that included requirements to control VOC emissions during the loading of gasoline into a storage tank. In 1978, the EPA followed up by issuing a Control Techniques Guideline (CTG) for the "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems." The purpose of this CTG was to "...define leak tight conditions and related test procedures for vapor collection systems and tank trucks while loading and unloading ..." The CTG represented the reasonably available control technology (RACT) that could be applied to existing facilities. The CTG was issued to provide a guideline for areas of nonattainment for the NAAQS.

The Clean Air Act Amendments (CAAA) of 1990 required ozone nonattainment areas to implement RACT to control VOC emissions. This RACT determination for the associated industry was to be incorporated into the SIP. RACT is defined by the EPA as "The lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." (44 FR53761, September 17, 1979) To assist state and local agencies in determining RACT, the EPA issues CTGs for specific sources. A CTG describes the "presumptive norm" for RACT and includes a review of current knowledge, technology and costs of a variety of emission control techniques. These guidelines provide state and local environmental agencies a guide in establishing RACT regulations for gasoline dispensing operations. The state or local agency can then use the presumptive norm for RACT or develop more stringent measures to meet the established ozone standards.

On January 10, 2008, the EPA issued the National Emission Standards for Hazardous Air Pollutant (NESHAP) for Source Category: Gasoline Dispensing Facilities (73 FR 1945). The NESHAP set forth national emission limits and identified management practices for the gasoline dispensing facilities. Most importantly, the NESHAP did not exclude any gasoline storage tank from the management practices, no matter what the gasoline storage tank capacity.

Rule 353 Rulemaking Background: Maricopa County drafted the first county-wide air quality rules pertaining to the storage and loading of gasoline in the 1970's. Rule 33 put into rule requirements for the storage and handling of petroleum products. In the 1980's, Rule 33 was broken into specific sections to address bulk loading facilities, delivery vessels, and loading into stationary storage tanks. Rule 33.3 (Loading into Stationary Storage Containers) specifically addressed the control of VOC emissions from gasoline service stations (now referred to as gasoline dispensing facilities). Rule 33.3 was submitted for inclusion in the 1982 Arizona State Implementation Plan (SIP). The rule included requirements for loading to include the use of submerged fill and the capture of at least 90% of the gasoline vapors displaced during the loading of gasoline. Gasoline storage tanks that were used "exclusively for the fueling of implements of normal cultural farm practices..." were exempted from the rule. Partial exemptions provided for storage tanks with under 1,000 gallon capacity; non-resale gasoline storage tanks; and tanks installed prior to specific dates. In 1985, Rule 33.3 was again submitted to the EPA for inclusion into the SIP. Per the department evaluation on February 11, 1986, Rule 33.3 was consistent with the requirements in the Clean Air Act and 40 CFR 51.22.

The department again revised Rule 33 in order to submit the rules as part of the NAAQS SIP. On July 13, 1988, the Maricopa County Board of Supervisors adopted revisions to Rule 33.3 to include the renumbering of Rule 33.3 to Rule 353 (Transfer of Gasoline into Stationary Storage Tanks); and the reformatting of the rule.

In 1992, the department revised Rule 353 to be consistent with the RACT guidance documents issued by the EPA in 1978. These revisions included the incorporation of EPA policy statements that were issued after the promulgation of the RACT guidance documents. The 1999 revisions by the department clarified the responsibility of owners and operators of gasoline dispensing facilities with respect to vapor recovery equipment. The fill pipe and vapor recovery return provisions were expanded. A dual point vapor recovery system was required to be installed in each new gasoline storage tank or when a major modification occurred. California Air Resources Board (CARB) certified equipment was required for Stage I vapor recovery systems. The installation of poppetted valves was required. Standards were included for spill containment devices. Leak detection test procedures were spelled out in detail. Record retention was expanded to five years. These revisions currently are in place.[7]

A limited scope revision to Rule 353 was drafted in 2013 (19 A.A.R. 3636, November 22, 2013) to delete the definition of non-precursor organic compound. The department relocated the list of EPA recognized "non-precursor organic compounds" (40 CFR 51.100(s)) into Maricopa County Air Pollution Control Regulations, Appendix G (Incorporated Materials) to provide a means to expeditiously update any revisions to the EPA definition of VOC.

Issues Raised and Discussed During this Rulemaking Process:

The department held three Stakeholder Workshops: June 30, 2015, September 14, 2015, and February 22, 2016. Stakeholders included representatives from APS, Caljet, CDM Smith, Cemex, City of Glendale, City of Mesa, City of Phoenix, EnCore Consulting, Envirosure Solutions, Kiewit, Pinal County, SRP, Washington Elementary School, and the EPA.

The department revised Rule 353 definitions for consistency with current gasoline industry terms and definitions; clarified the storage and loading requirements of an underground storage tank and an above ground storage tank; updated test methods to be consistent with state and federal test methods; and clarified the inspection requirement for gasoline dispensing facilities that receive gasoline less than once per week.

Previously (December 20, 2000) the department had issued a technical guidance, #TG00-002, addressing the issue of inspection of gasoline dispensing tanks that receive a load of gasoline once per week. Per the discussion in the document, "The intended purpose of requiring inspections…is to assure both that the fill and vapor return assemblies are fit to receive gasoline and that the integrity of these assemblies is maintained so as to prevent gasoline evaporation between deliveries." The guidance concluded that if gasoline was loaded at a frequency of less than once per week, that the inspection and recording of the inspection could be conducted at the time of each gasoline delivery. The department incorporated the inspection frequency for less than weekly gasoline deliveries into Section 401.2(b) of this rule and rescinded #TG00-002.

The department revised the rule title to "Storage and Loading of Gasoline at Gasoline Dispensing Facilities" to clarify the specific site activities that this rule applies to. In addition, the purpose and applicability sections were revised to further add clarification in the rule.

Current rule language and definitions were not consistent between the county rules relating to gasoline nor with the federal language for gasoline dispensing facilities. The department revised rule language and definitions to be consistent with other Maricopa County rules and federal rule language. This provides consistency between regulatory agencies and between rules to provide clear and consistent definitions and terms for Stakeholders. At the workshops, it was discussed as to how many terms used in the federal regulations should or are reasonable to include in local rules. The Stakeholders and department staff recommended that definitions that are applicable to the county should be included but not necessarily all the federal definitions.

During the initial phase of the Rule 353 rulemaking process, the department initially proposed to consolidate Rule 352 (Gasoline Delivery Vessel Testing and Use) and Rule 353. At the workshops, Stakeholders expressed confusion and questioned the reasoning as to why the two rules should be combined. The department initially felt that combining the two rules would clarify the responsibilities of the cargo tank operators especially when loading gasoline into and out of stationary gasoline storage tanks. Further discussions with Stakeholders and department staff indicated the proposed consolidation of the two rules added confusion rather than clarified responsibilities. The department agreed and revised Rule 352 and Rule 353 as separate rules.

Prior to the opening of the rule for revisions, Stakeholders were questioning the specific requirements for an above ground storage tank. Questions centered around the requirement and use of a spill containment receptacle for the fill pipe on an above ground storage tank. To clarify all the requirements for both the above ground storage tanks and the underground storage tanks, the department drafted separate rule sections for each.

The department revised Section 503.4 to require records to be made available to the Control Officer within 24 hours upon verbal or written request. This provides a specific time frame for the owner or operator of a gasoline dispensing facility to remotely access records stored off-site. This also provides consistency within the department when requesting records. There was no discussion brought up at any of the Stakeholder Workshops on this revision.

The department defined "submerged fill" to be consistent throughout the gasoline rules. The department included a graphic depicting the types of fill piping in the definition. Stakeholders agreed the graphic added value to the definition and recommended including it in the rule.

Description of Proposed Amendments:

Amended the following throughout the rule:

- Deleted the wording "stationary dispensing operation" and replaced with "gasoline dispensing facility"
- Deleted the word "transfer" and replace with "load"
- Deleted the wording "2-Point" and replace with "dual-point"
- Deleted the word "person" and replace with "owner or operator"
- Deleted past compliance dates
- Added or revised specific rule section references
- Added "stationary" to describe the type of storage tank

Amended the following in Section 100:

- Revised Section 101 (Purpose) to include the storage and loading of gasoline at gasoline dispensing facilities
- Revised Section 102 (Applicability) to apply to an owner or operator of a gasoline dispensing facility
- Added Section 103 (Exemptions)

Amended the following in Section 200:

- Added the definition AVIATION GASOLINE (AVGAS)
- Revised the definition CARB-CERTIFIED
- Added the definition COAXIAL VAPOR BALANCE SYSTEM
- Deleted the definition DISPENSING TANK
- Added the definition DUAL-POINT VAPOR BALANCE SYSTEM
- Revised the definition EXCESS GASOLINE DRAINAGE
- Revised the definition GASOLINE
- Deleted the definition GASOLINE DELIVERY VESSEL
- Added the definition GASOLINE CARGO TANK
- Deleted the definition GASOLINE DISPENSING OPERATION
- Added the definition GASOLINE DISPENSING FACILITY
- Deleted the definition INSTALLER
- Added the definition MARICOPA COUNTY (MC) VAPOR TIGHTNESS TEST
- Deleted the definition OFFSET FILL LINE
- Revised the definition POPPETTED DRY BREAK
- Added the definition PURGING
- Deleted the definition SIDE FILL PIPE
- Revised the definition STAGE I VAPOR RECOVERY
- Added the definition STATIONARY GASOLINE DISPENSING TANK
- Added the definition SUBMERGED FILL
- Deleted the definition TOP FILL or VERTICAL FILL PIPE
- Revised the definition VAPOR LOSS CONTROL DEVICE
- Revised the definition VAPOR TIGHT

Ameded the following in Section 300:

- Deleted Section 300 (Standards-Vapor Loss Control Measures Required)
- Deleted Section 301 (Basic Tank Integrity)
- Deleted Section 302 (Fill Pipe Requirements)
- Deleted Section 303 (Vapor Recovery System)
- Deleted Section 304 (Equipment Maintenance and Use Required)
- Deleted Section 305 (Exemptions)
- Added Section 300 (Standards)
- Added Section 301 (Manufacturers, Suppliers and Owner or Operator)
- Added Section 302 (General Housekeeping Requirements)
- Added Section 303 (Gasoline Storage Equipment and Operation Requirements)
- Added Section 303.1 (Underground Storage Tank (UST))
- Added Section 303.2 (Above Ground Storage Tank (AST))
- Added Section 304 (Loading of Gasoline)
- Added Section 305 (Control of VOC Vapors)
- Added Section 305.1 (Gasoline vapors displaced…)
- Added Section 305.2 (Stage 1 Vapor Recovery System Configuration)
- Added Section 305.3 (Equipment Maintenance and Use Required)

Amended the following in Section 400:

- Deleted Section 401 (Tanks that Lost Their Exemption)
- Added Section 401 (Inspections)
- Revised Section 402.1 (Proving Exempt Status)
- Revised Section 402.2 (Providing Proof of Equipment Compliance)

- Revised Section 403 (CARB Decertification)
- Revised Section 404 (Other Agencies Requirements)

Amended the following in Section 500:

- Renumbered Section 501 (Compliance Inspections) to Section 502
- Added Section 501 (Determining Vapor Tight Status)
- Added Section 501.1 (Combustible Gas Detector or Organic Vapor Analyzer - Test Procedure)
- Added Section 501.2 (Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3)
- Added Section 501.3 (Optical Gas Imaging)
- Renumbered Section 502 (Recordkeeping) to Section 503 (Gasoline Dispensing Facility Recordkeeping) and Revised
- Renumbered Section 503 to Section 504 and Revised
- Renumbered Section 503.1 to Section 504.1 and Revised
- Renumbered Section 503.2 to Section 504.2 and Revised
- Renumbered Section 503.3 to Section 504.3 and Revised
- Deleted Section 503.4
- Renumbered Section 504 (Test Methods) to Section 505 and Revised
- Renumbered Section 504.1 (EPA Test Methods) to Section 505.1 and Revised
- Renumbered Section 505.2 (Gasoline Vapor Pressure) and Renumbered Section 505.2 (ASTM Standards) and Revised
- Deleted Section 504.3 (Leak Detection Test Method)
- Renumbered Section 504.4 to Section 505.3 (CARB Certification and Test Procedures for Gasoline Vapor Recovery Systems) and Revised
- Added Section 505.5 (Additional Test Methods)

7. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
   - **(a)** Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
   - **(b)** Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. The County failed to meet 2008 8-hour ozone standard by the marginal area attainment date of July 20, 2015. The EPA issued a final rule, effective June 3, 2016, reclassifying the Maricopa County area to "moderate" (published at 86 FR 26697, May 4, 2016). Further, a portion of the County was

classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the County to continue to maintain the measures and requirements that allowed the County to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM_{10} 24-hour standard. This is the only serious PM_{10} nonattainment area in Arizona. Revisions to Rule 353 addressed the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The amendments in Rule 353 include Reasonably Available Control Technology (RACT).

The department complies with A.R.S. § 49-112(B) in that the amendments to Rule 353 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49, address the peculiar local conditions in Maricopa County, are authorized under A.R.S. Title 49, Chapter 3, Article 3, and are not in lieu of a state program.

8. **Documents or studies referenced and/or reviewed for this rulemaking:**

Not applicable

9. **Showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**

Not applicable

10. **Summary of the economic, small business, and consumer impact:**

The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

An identification of the rulemaking.

This rulemaking revised Rule 353 (Gasoline in Stationary Dispensing Tanks). The revised rule is titled: Storage and Loading of Gasoline at Gasoline Dispensing Facilities.

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.

The persons who will be directly affected by and bear the costs of this rulemaking to revised Rule 353 will be facilities in Maricopa County that own or operate a gasoline dispensing facility, including those located at airports. The department has issued a Title V or a Non-Title V permit to 165 facilities subject to Rule 353. The economic summary is based on the number of Title V and Non-Title V permits issued by the Maricopa County Air Quality Department.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**

Because this rulemaking did not impose any new compliance burdens on permitted regulated entities or introduce additional regulatory requirements, the department deemed that none of the revisions have potentially significant economic impacts on permitted sources. It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

The benefits of the rule revision are anticipated to be a result of the following changes:

- Clarification of the storage and loading requirements of an underground storage tank and an above ground storage tank;
- Updated test methods to be consistent with state and federal test methods;
- Clarification of the inspection requirement for gasoline dispensing facilities that receive gasoline less than once per week;
- Correction of typographical or other clerical errors and made minor grammatical changes to improve readability or clarity;
- Modification of the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules.

The sources subject to revised Rule 353 already have permits in which these requirements are addressed. Therefore, this revised rule does not impose new requirements on the permitted facilities, and no costs would be incurred for compliance with the rule revisions.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions do not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity provided by the Rule 353 revisions will provide a benefit to the regulated community; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision did not impose increased monetary or regulatory costs on individuals so regulated.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions did not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated.

(a) **An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County that own or operate a gasoline dispensing facility.

(b) **The administrative and other costs required for compliance with the rulemaking.**

This rulemaking updated and clarified existing rule provisions and definitions to be consistent with federal performance standards; and to reduce confusion and improve understanding and readability. The department considered the implications of the proposed amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions had potentially significant economic impacts.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**

By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**

This rulemaking did not impose any new compliance burdens on regulated entities that are permitted or introduce additional regulatory requirements and will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated. As such, there are no costs to pass through to consumers which means there are no impacts on consumers.

A statement of the probable effect on state revenues.

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

11. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name: Cheri Dale or Hether Krause
Maricopa County Air Quality Department

Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, AZ 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-Mail: aqplanning@mail.maricopa.gov

12. **Description of the changes between the proposed rule, including supplemental notices and final rule:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R 1257), the department is made the following additional amendments:

- Throughout the rule, included both English and metric units of measure for consistency.
- Section 101 (Purpose): Made the purpose statement more succinct by deleting "from gasoline".
- Section 102 (Applicability): Retained original text regarding Rule 353 applying to stationary gasoline dispensing tanks with a capacity of more than 250 gallons.
- Section 103.5: Revised the wording from "…shall remain subject to such provisions even if annual emissions " to "…shall remain subject to such provisions even if the annual amount of gasoline received…" The 120,000 gallon threshold is a quantity of gasoline delivered and not an emission threshold.
- Section 202: The original definition of a DISPENSING TANK was added and struck out because the definition was deleted. In Section 215, added the definition of STATIONARY GASOLINE DISPENSING TANK, now shown as new language and underlined. The Notice of Proposed Rulemaking indicated that Section 202 was "moved" to Section 215. Since the strikeout of Section 202 occurred later in Section 200, it appeared that numbering was out of sequence. To avoid any confusion as to what happened to the original Section 202 DISPENSING TANK definition, Section 202 DISPENSING TANK definition was re-inserted in sequential order and struck out as deleted. Section 215 was added to indicate a new definition and now is underlined. There were no revisions between the definition found in the Notice of Proposed Rulemaking and the definition in this document.
- Section 213 (Renumbered to 214): Deleted the term "delivery vessel" and inserted the term "gasoline cargo tank" to be consistent throughout rule.
- Section 216.3: Deleted, in definition of "Submerged Fill", text regarding API Standard 650 Compliant, because such provision is applicable to organic liquids not gasoline.
- Section 208: Added the acronym (GDF) to the definition of a GASOLINE DISPENSING FACILITY since the acronym is used in Section 300.
- Section 215: Added the word "GASOLINE" to the definition of a STATIONARY GASOLINE DISPENSING TANK for consistency throughout rule.
- Section 216: Deleted the word "tanks" from "Top-Fill or Bottom-Fill" definition.
- Section 303.1: Revised the wording to clarify the size of gasoline storage tank the section applies to. The revised wording of Section 303.1: "Underground Storage Tank (UST): An UST with a capacity more than 250 gallons (946 l) must meet all of the following conditions …" The revision will maintain consistency throughout the rule with the applicable standards. This also maintains the previous Rule 353 gasoline storage tank capacity; therefore, there is no rule relaxation or additional requirement with this revision.
- Section 404 (Other Agencies' Requirements): Struck out the wording "Arizona Department of Weights and Measures." The Arizona Department of Weights and Measures name was changed to "Arizona Department of Agriculture, Weights and Measures Services Division" on July 1, 2016.
- Section 501: The title was revised from MONITORING FOR LEAKS to DETERMINING VAPOR TIGHT STATUS to clarify the intent of the section is not to monitor for vapor leaks but to provide a means of determining if a vapor leak is occurring. The owner or operator or the Control Officer is the person or persons that determine the vapor tight status.
- Section 501.1: Added the acronyms for combustible gas detector (CGD) and organic vapor analyzer (OVA)
- Section 503.4: Retained original text regarding records having to be made available without delay instead of having to be made available within 24 hours.
- Sections 504 and 505: Included text in Sections 504 and 505 that allows for the use of alternative test methods to determine compliance with the rule and that allows test

methods as approved by the Administrator to be used and clarified the provision regarding when more than one test method is permitted for a compliance determination.
- Section 505.4(a): The text in this section was not shown as new text (underlined); this has been corrected.

13. **Summary of the comments made regarding the rule and the department response to them:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R. 1257), the department received comments from the Arizona Public Service Company (APS) and the U.S. Environmental Protection Agency (EPA). The comments and the department's responses are provided below.

Comment #1: Section 103.4 (Exemptions-Stationary Gasoline Dispensing Tanks for Farm Operations)

The EPA commented that the exemption for stationary gasoline dispensing tanks for farm operations should be removed from the rule.

Response #1: Section 103.4 (Exemptions-Stationary Gasoline Dispensing Tanks for Farm Operations)

For stationary gasoline dispensing tanks for farm operations, the department is retaining the exemption. Based upon information provided by the Arizona Farm Bureau, annual gasoline throughput has been estimated to be approximately 180,000 gallons per year (i.e., 150 250-gallon tanks with 100 gallons per month throughput). A loading loss emission factor of 0.909 lbs VOC/1000 gallons was calculated using the equation provided in Section 5.2.2.1.1 of AP-42. In addition, a breathing and emptying emission factor of 1.0 lbs VOC/1000 gallons was obtained from Table 5.2-7 of AP-42. Combining these two emission factors with the annual gasoline throughput of the agricultural tanks results in annual VOC emissions of 344 lbs/year (or 0.172 tons/year). These data are included in a spreadsheet dated July 3, 2016 named "AST fuel estimates.xlsx". The spreadsheet also includes emissions for displacement and spillage; these are Stage II emission sources which are not covered under Rule 353. Also, the 2014 National Emissions Inventory (NEI) emissions used for comparison only included Stage I emission sources. Therefore, the displacement and spillage emissions were excluded from this analysis. For comparison purposes, the Maricopa County gasoline station VOC emissions (i.e., total Stage I and tank breathing and emptying) are 1,781.6 tons in the 2014 National Emissions Inventory (NEI). Thus, the VOC emissions from the agricultural gasoline tanks are less than 0.01 percent of the VOC emissions from gasoline stations. Compared to the gasoline station (and overall inventory) VOC emissions, VOC emissions from the agricultural gasoline tanks are negligible. The VOC emissions from the agricultural gasoline tanks are 0.0005% of the annual VOC emissions for all area sources in Maricopa County per the draft 2014 Periodic Emissions Inventory for Ozone Precursors.

Comment #2: Section 501(Determining Vapor Tight Status)

APS commented that it is unclear whether monitoring requirements found in Section 501 are required to be completed by the owner/operator and if so, how frequently.

Response #2: Section 501 (Determining Vapor Tight Status)

Sections 303.1 and Section 303.2 (Standards-Gasoline Storage Equipment and Operation Requirements) both include provisions for the storage tanks to be maintained to prevent vapors from escaping into the atmosphere. Section 401 (Administrative Requirements-Inspections) addresses the inspections and frequency of such inspections. Section 503 (Gasoline Dispensing Facility Recordkeeping) addresses the recordkeeping requirements for the inspection records. The purpose of Section 501 in Rule 353 is to provide easy methods for owners, operators and the Control Officer to quickly identify if a component is leaking vapors into the atmosphere. A component may be leaking vapors into the atmosphere but still be considered "vapor tight" per the definition in Section 200 of the rule. For a component to be vapor tight, by definition, the component cannot "leak" 10,000 ppmv or more than 1/5 the lower explosive level of vapor. Basically, a component may have a vapor leak and still be considered vapor tight. Providing additional methods for the identification of any type of vapor leak (the optical gas imaging and the soapy solution spray) allows for the quick identification and location of a vapor leak without the expense and time it takes to calibrate and check for leaks using a combustible gas detector (CGD) or organic vapor analyzer (OVA). If the optical gas imaging or soapy water methods do not identify any potential "vapor leaks" there is no need to check for leaks using an CGD or OVA, but the option is still is available. To determine the "vapor tight" status of a component, a CGD, OVA, or a calibrated optical gas imaging device operated by a certified operator can be used to identify how much vapor is escaping, answering the question if the component is vapor tight. The title

of Section 501 "Monitoring for Leaks" is somewhat misleading and implies that one is required to check for leaks using at least one of the three vapor leak detection procedures listed in the rule, thus APS's question/comment. To clarify the intent Section 501 to apply to the determination of a vapor tight status, the department added an introductory statement in Section 501 to read: "If a determination of vapor tight status is to be made on a VR System or spill containment equipment at a stationary gasoline dispensing facility or on 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". Changing the wording from "Monitoring for Leaks" to "Determining Vapor Tight Status" clarifies the intent of the section. The department deems the phrase "If a determination of vapor tight status is to be made…" to set the parameters as to when a vapor tight status is to be determined. Through the required periodic inspections and recordkeeping requirements specified in Sections 401 and 503, the owner or operator will be able to identify any leaks, both liquid and vapor, in a timely manner to prevent gasoline vapors from escaping. If there is a question as to how much a component is leaking, at that time a determination of the vapor tight status should be made. If the component is leaking vapors that are above the limits identified in the definition of "Vapor Tight" then the component is not vapor tight. If a component is leaking vapors but is under the limits specified in the definition, then the component does have a vapor leak but is considered vapor tight.

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

Not applicable

15. **Incorporations by reference and their location in the rule:**

The following EPA Test Methods are incorporated by reference in Rule 353, Section 504:

- 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
- EPA Method 25 ("Determination of Total Gaseous Nonmethane Organic Emissions as Carbon") and its submethods (40 CFR 60, Appendix A)
- EPA Method 27 ("Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure-Vacuum Test") in 40 CFR 60, Appendix A
- 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 21to monitor for equipment volatile organic compound leaks
- ASTM D323-15a "Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)
- ASTM D4953-15 "Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method)
- San Diego County Air Pollution Control District Test Procedure TP-96-1, March 1996, Third Revision, Air Pollution Control District, 9150 Chesapeake Drive, San Diego, CA 92123-1096
- California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1B, Static Torque of Rotatable Phase 1 Adaptors
- 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
- CARB Test Procedure TP-201.1A - "Determination of Efficiency of Phase I Vapor Recovery Systems of Dispensing Facilities with Assist Processors"
- California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1E, Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves
- California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1C, Leak Rate of Drop Tube/Drain Valve Assembly
- California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1D, Leak Rate of Drop Tube Overfill Protection Devices and Spill Container Drain Valves
- 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
- Bay Area Air Quality Management District Source Test Procedure ST-30—Static Pressure Integrity Test—Underground Storage Tanks

16. **Was this rule previously an emergency rule?**
No

17. **Full text of the rule follows:**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 353
STORAGE AND LOADING OF GASOLINE ~~IN STATIONARY DISPENSING TANKS~~ AT GASOLINE DISPENSING FACILITIES
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~~Revised 07/13/88~~
~~Revised 04/06/92~~
~~Revised 06/16/99~~
~~Revised 09/25/13~~

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 ~~IN STATIONARY DISPENSING TANKS~~ AT GASOLINE DISPENSING FACILITIES

SECTION 100 – GENERAL

101 PURPOSE: To limit ~~VOC (volatile organic compound)~~ emissions of volatile organic compounds (VOCs) ~~from gasoline stored in stationary dispensing tanks and from gasoline delivered into such tanks.~~ during storage and loading of gasoline at gasoline dispensing facilities.

102 APPLICABILITY: This rule applies to an owner or operator who operates a ~~is applicable to gasoline stored in or transferred into any stationary dispensing tank with a capacity of more than 250 gallons (946 l). This includes gas stations and other~~ 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 Faicilities: 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.

~~201~~ **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. ~~Such orders are included in CARB's publication, "Gasoline Facilities - Phase I & II", which is available as set forth in subsection 503.4.~~

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.

~~202 DISPENSING TANK: Any stationary tank which dispenses gasoline into a motorized vehicle's fuel tank that directly fuels its engine(s). This includes aircraft.~~

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.

~~203~~ **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 ~~tube's~~ pipe's spill containment receptacle.

~~204~~ **206 GASOLINE:** Any petroleum distillate ~~or blend of petroleum distillate with other combustible liquid(s), such as alcohol, that~~, 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. ~~and has a vapor pressure between 4.0 and 14.7 psi (200–760 mm Hg.), as determined by the applicable method pursuant to subsections 503.2 and 504.2. For the purposes of this rule, liquefied petroleum gas (LPG) is excluded.~~

~~205 GASOLINE DELIVERY VESSEL: Any vehicular-mounted container such as a tanker truck, tank trailer, cargo tank or any other wheel-mounted container used to transport gasoline. This includes any hoses the vessel carries through which deliveries must be made.~~

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.

~~206 GASOLINE DISPENSING OPERATION : All gasoline dispensing tanks and associated equipment located on one or more contiguous or adjacent properties under the control of the same person (or persons under common control).~~

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.

~~207~~ **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.

~~208 INSTALLER: The person, as defined in Rule 100, that installs VOC control equipment at a dispensing facility.~~

~~209~~ **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.

~~210 OFFSET FILL LINE: Any dispensing tank's gasoline fill line (piping and fittings) which contains one or more bends.~~

~~211~~ **212** **POPPETTED DRY BREAK:** A ~~Stage 1 vapor recovery device~~ 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 ~~return~~ 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.

~~212~~ ~~SIDE FILL PIPE: A fill pipe that enters a dispensing tank through the tank's side.~~

~~213~~ **214** **STAGE 1 VAPOR RECOVERY SYSTEM (VR SYSTEM):** At a ~~gasoline dispensing facility~~ stationary GDF, the use of installed vapor recovery equipment designed to reduce by at least ~~90%~~ 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 ~~delivery vessel~~ gasoline cargo tank. This reduction may be done either by capturing the displaced vapors within the ~~delivery vessel~~ gasoline cargo tank, and or by processing the vapors on site with an emission processing device. ~~(such as a VOC oxidizer).~~

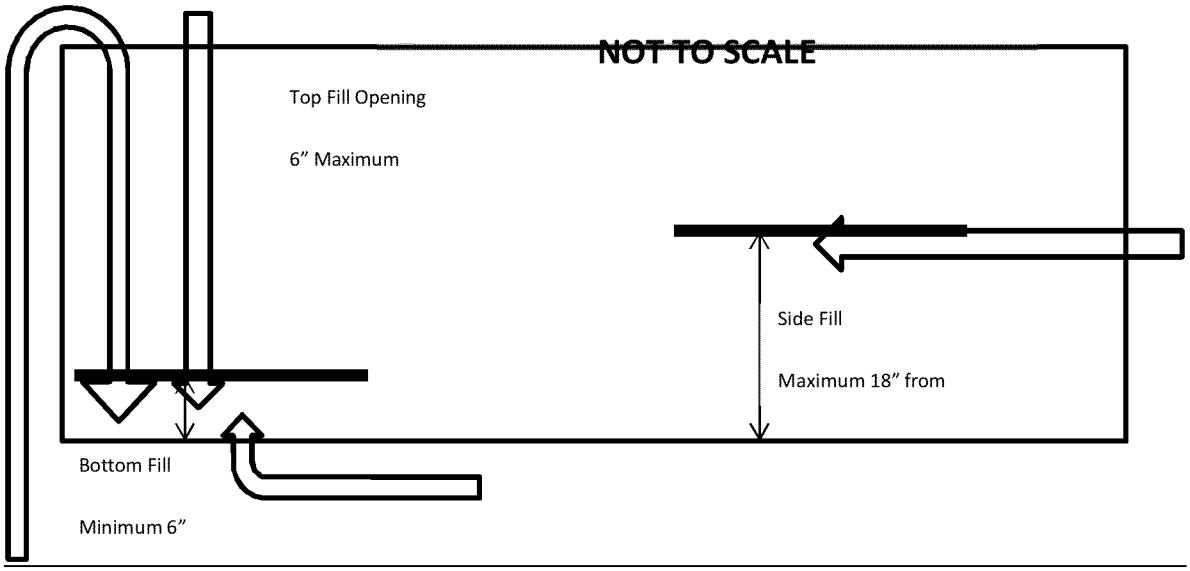
215 **STATIONARY GASOLINE DISPENSING TANK:** Any stationary tank which dispenses gasoline directly into a motorized vehicle's fuel tank, dispenses gasoline into an aircraft's fuel tank, or dispenses gasoline into a watercraft's fuel tank that directly fuels its engine(s).

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



~~214~~ **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.

~~215~~ ~~TOP FILL OR VERTICAL FILL PIPE: A fill pipe that enters a dispensing tank through its top.~~

~~216~~ **218** **VAPOR LOSS CONTROL** ~~DEVICE~~ **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 ~~operation.~~ facility.

~~217~~ **219** **VAPOR TIGHT:** ~~A condition in which an organic vapor analyzer (OVA) or a combustible gas detector (CGD) at a potential VOC leak source shows either less than 10,000 ppm when calibrated with methane, or less than 1/5 of the lower explosive limit, when prepared according to the manufacturer and used according to subsection 504.3 of this rule.~~ 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–VAPOR LOSS CONTROL MEASURES REQUIRED: No person shall transfer or permit the transfer of gasoline from any delivery vessel into any stationary dispensing tank located above or below ground with a capacity of more than 250 gallons (946 l) unless the following conditions are met:~~

~~301 BASIC TANK INTEGRITY: No vapor or liquid escapes are allowed through a dispensing tank's outer surfaces, nor from any of the joints where the tank is connected to pipe(s), wires, or other system.~~

~~301.1 VOC Emission Standard:~~

~~a. Gasoline delivery operations shall be vapor-tight, as defined in Section 218, except for tanks exempted by Section 305 from Stage 1 vapor recovery requirements.~~

~~b. Tanks and their fittings shall be vapor-tight except for the outlet of a pressure/vacuum relief valve on a dispensing tank's vent pipe. Specifically, this means that at a probe tip distance of 1 inch (2.5 cm) from a surface, no vapor escape shall exceed 1/5 of the lower explosive limit. This applies to tanks containing gasoline regardless of whether they are currently being filled, and to caps and other tank fittings.~~

~~301.2 Leakage Limits–Liquid Leaks and Spills:~~

~~a. Gasoline storage and receiving operations shall be leak-free. Specifically, no liquid gasoline escape of more than 3 drops per minute is allowed. This includes leaks through the walls of piping, fittings, fill hose(s), and vapor hose(s).~~

~~b. There shall be no excess gasoline drainage from the end of a fill hose or a vapor hose. Specifically, not more than 2 teaspoonsful of gasoline shall be lost in the course of a connect or disconnect process.~~

~~301.3 Spill Containment Equipment: The entire spill containment system including gaskets shall be kept vapor-tight.~~

~~a. The Spill Containment Receptacle:~~

~~(1) The outer surface of the spill containment receptacle shall have no holes or cracks and shall allow no vapors to pass from the dispensing tank through it to the atmosphere.~~

~~(2) Spill containment receptacles shall be kept clean and free of foreign material at all times.~~

~~(3) Spill containment receptacles shall be inspected at least weekly. Records of inspection and cleaning shall be kept according to subsection 502.2.~~

~~b. If the spill containment is equipped with a passageway to allow material trapped by the containment system to flow into the interior of the dispensing tank:~~

~~(1) The passageway shall be kept vapor-tight at all times, except during the short period when a person opens the passageway to immediately drain material trapped by the containment system into the tank.~~

~~(2) The bottom of the receptacle shall be designed and kept such that no puddles of gasoline are left after draining through the passageway has ceased.~~

~~c. The dispensing tank owner/operator is responsible for assuring that before a delivery vessel leaves the premises after a delivery:~~

~~(1) Any gasoline in a dispensing tank's spill containment receptacle has been removed.~~

~~(2) Any gasoline that a person has taken out of a spill receptacle, as a free liquid or as absorbed into/onto other material removed from the receptacle, shall be contained in such a way that VOC emission is prevented; disposal in conformance with applicable hazardous waste rules is sufficient to meet this requirement.~~

~~(3) Any plunger/stopper assembly is unimpeded and sealing correctly.~~

~~d. Criteria Of Violation/Exceedance for Spill Containment Receptacles: A reading on a CGD or OVA exceeding 1/5 LEL (10,000 ppm as methane) is an exceedance. The procedure for performing a determination is set forth in subsection 504.3.~~

~~302 FILL PIPE REQUIREMENTS:~~

~~302.1 Each fill line into a stationary dispensing tank shall be equipped with a permanent submerged fill pipe that has a discharge opening which is completely submerged when the liquid level is 6 inches above the tank bottom.~~

a. Threads, gaskets, and mating surfaces of the fill pipe assembly shall be designed and maintained tight. There shall be no liquid or vapor leakage at the joints of the assembly.

b. An owner/operator is responsible to assure that external fittings of a fill pipe assembly shall be inspected weekly to assure that cap, gasket, and piping are intact and are not loose.

(1) A record of the inspection shall be made according to subsection 502.2.

(2) An owner/operator shall act to prevent driver/deliverers from connecting the delivery hose coupling to a fill pipe coupling with so much twisting force that the fill pipe assembly is loosened. One method of complying is to have a CARB-certified swivel coupling as part of the fill pipe assembly (reference subsection 503.4 for CARB).

302.2 Fill Pipe Caps:

a. The cap shall have a securely attached, intact gasket.

b. The cap and its gasket shall always function properly, latch completely so that it cannot then be easily twisted by hand, and have no structural defects.

c. The cap of a gasoline fill pipe shall always be fastened securely on the fill pipe except immediately before, during, and immediately after:

(1) "Sticking" the tank to measure gasoline depth.

(2) Delivering gasoline into the tank.

(3) Doing testing, maintenance or inspection on the gasoline/vapor system.

d. Do not unfasten or remove a fill pipe cap unless every other fill pipe is either securely capped or connected to a delivery hose, except as otherwise needed for testing, maintenance, or inspection.

302.3 Restrictions on Multiple Fill Pipes:

a. A tank installed after December 31, 1998, shall not be equipped with more than one fill pipe unless more than one fill pipe is specifically allowed in the Air Pollution Permit and there is a 2-point system having a properly installed vapor return pipe close to each fill pipe.

b. Restriction on Concurrent Delivery: An owner/operator of a dispensing tank fitted with more than 1 fill pipe shall prevent concurrent delivery of gasoline by a gasoline delivery vessel to more than 1 fill pipe of the tank by locking additional fill pipes shut or by using other permanent means, unless:

(1) Concurrent delivery is specifically allowed in the facility's Air Pollution Permit; and

(2) All fill pipes in use are part of a 2-point vapor recovery system; and

(3) Before making a concurrent delivery through a tank's second fill pipe, an additional vapor return hose from the delivery vessel must first be attached to the vapor return line associated with the second fill pipe.

302.4 Fill Pipe Obstructions:

a. Any type of screen and/or other obstructions in fill pipe assemblies shall be permanently removed by November 1, 1999, unless it is specifically allowed by an Air Pollution Permit or is CARB-certified, as referenced in subsection 503.4.

b. A screen or other obstruction, allowed by Air Pollution Permit or CARB, shall be temporarily removed by the owner/operator of a dispensing tank prior to inspection by the Control Officer to allow measurements pursuant to this rule.

302.5 Overfill Protection Equipment: Overfill prevention equipment shall be 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.

303 VAPOR RECOVERY SYSTEM:

303.1 Gasoline vapors displaced from a dispensing tank by gasoline being delivered shall be handled by a Stage Vapor Recovery System, unless the tank is exempted by Section 305.

303.2 Stage 1 Vapor Recovery System Configuration (Reference subsection 503.4 for identification of CARB-certified components):

a. Replacement: After June 16, 1999, no part of a vapor recovery system for which there is a CARB specification shall be replaced with anything but CARB-certified components.

b. Vapor Valves:

(1) All vapor return lines from dispensing tanks shall be equipped with CARB-certified, spring-loaded, vapor-tight, poppetted dry break valves.

(2) Vapor valves shall be inspected weekly to determine if closure is complete and gaskets are intact; a record shall be made pursuant to subsection 502.2.

c. Above Ground Systems: After June 16, 1999, an above ground dispensing tank shall have CARB certified fittings wherever CARB so specifies.

d. New Systems: Each new gasoline tank installation shall use CARB-certified fittings exclusively wherever CARB so specifies, and:

(1) Shall have its own separate, functioning 2-point vapor return line;

(2) Is allowed to have a combination vapor recovery system that in addition to having a separate 2-point Stage 1 vapor return line, also has stage 1 vapor piping/fittings linking it to one or more (other) gasoline dispensing tanks.

e. New Coaxial Prohibited:

(1) No coaxial fill pipes shall be installed after June 16, 1999, in new installations; and

(2) No coaxial fill pipes shall be reinstalled after June 16, 1999, in major modifications in which the top of the tank is exposed and the vapor port bung is pre-configured to accept vapor recovery piping.

304 EQUIPMENT MAINTENANCE AND USE REQUIRED: All vapor loss control equipment shall be installed as required, operated as recommended by the manufacturer, and maintained leak-free, vapor-tight and in good working order.

304.1 Both the owner/operator of a dispensing tank and the driver/operator of a delivery vessel delivering gasoline to the fuel dispensing tank equipped with vapor recovery shall have responsibility to assure that vapor recovery equipment (if required by this rule) is properly connected and in use at all times while gasoline is actively being dropped/delivered.

304.2 The owner/operator of a fuel dispensing tank not exempted by Section 305 shall refuse delivery of gasoline from a delivery vessel which does not bear a current pressure test certification decal issued by the Control Officer. This provision does not apply during times when the facility is unattended or there is only one person under control of the dispensing facility present.

304.3 Coaxial Systems: Both spring-loaded and fixed coaxial fill tubes shall be maintained according to the standards of their manufacturer(s) and be operated so that there is no obstruction of vapor passage from the tank to the delivery vessel.

305 EXEMPTIONS:

305.1 Dispensing Tanks for Farm Operations: Any stationary gasoline dispensing tank used exclusively for the fueling of implements of normal farm operations is exempt from this rule, except for cap, spills, and liquid leak-age provisions in Section 301.

305.2 The Vapor Recovery Provisions of Section 303 of this Rule Shall Not Apply to the Following Stationary Gasoline Dispensing Tanks:

a. Non-Resale Dispensing Operations From Non-Farm Tanks: Any stationary gasoline dispensing operation receiving less than 120,000 gallons of gasoline in any 12 consecutive calendar months, dispensing no resold gasoline, and having each gasoline dispensing tank equipped with a permanent submerged fill pipe pursuant to subsection 302.1, is exempt from Section 303. However, any operation shall become subject to the provisions of Section 303 of this rule by exceeding the 120,000 gallon threshold or not abiding by the restrictions, and shall remain subject to such provisions even if annual emissions later fall below this threshold.

b. Dispensing Tanks Of 1000 Gallons Or Less: Any stationary 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. 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 6 inches of the tank bottom.

c. Dispensing Tanks with Offset Fill Lines: Any stationary dispensing tank installed prior to October 2, 1978, where the fill line between the fill connection and tank is offset.

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 gaoline 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 poppetted 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 poppetted 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 overfill 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 TANKS THAT LOST THEIR EXEMPTION: Tanks that were formerly exempt from a provision prior to June 16, 1999, shall come into compliance by December 1, 1999.~~

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 poppetted dry break shall be:

(1) Equipped with a vapor tight seal;

(2) Covered with a gasketed cap that fits securely onto the poppetted 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 ~~applicant~~ owner or operator. ~~Persons~~ 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: ~~a.~~ It is the responsibility of the ~~installer of vapor control equipment~~ owner or operator, ~~when so required by the Control Officer,~~ to provide proof, when requested by the Control Officer, that a vapor recovery system or its modifications meet the requirements of this Rule 353.

~~b. If the owner/operator or the equipment supplier voluntarily provides such proof, the Control Officer has the option to waive the subsection 402.2a requirement that the installer provide this proof.~~

403 CARB DECERTIFICATION: ~~A person~~ An owner or operator shall not install or reinstall a component related to vapor recovery that has been decertified by CARB. ~~in "Gasoline Facilities - Phase I & II" publication, referenced in subsection 503.4.~~

404 OTHER AGENCIES' REQUIREMENTS: Compliance with this rule does not relieve or otherwise affect ~~a person's~~ 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 Weights and Measures,~~ Arizona Department of Agriculture, Weights and Measures Services Division; local fire department codes,; ~~and~~ 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 coaxiallywith 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.

~~501~~ **502** **COMPLIANCE INSPECTIONS:** Any ~~dispensing tank~~ stationary gasoline dispensing tank required by this rule to be equipped with ~~vapor loss control devices~~ 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.

~~502~~ **503** **GDF RECORDKEEPING:** The owner or operator of each ~~gasoline dispensing facility~~ stationary GDF in Maricopa County shall maintain records as follows:

503.1 The total amount of gasoline received each month shall be recorded by the end of the following month.

503.2 The owner or operator of a ~~gasoline dispensing facility~~ stationary GDF shall ~~cause weekly records of fill tube, vapor valve and spill containment inspection to be kept. The findings of such weekly inspections shall be permanently entered in a record or log book by the end of Saturday of the following week .~~ 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.

503.3 These records and any reports or supporting information required by this rule or by the Control Officer shall be retained for at least ~~5~~ five (5) years.

503.4 Records of the past ~~12~~ 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.

~~503~~ **504** **COMPLIANCE DETERMINATION:** ~~The test methods referenced in Section 503 shall be used in the ways given in the subsections that immediately follow. 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. For routine information collection, the Control Officer may accept a manufacturer's data sheet (MSDS), data certified by an officer of the supplying company, or test data for the product of inquiry.~~

504.1 Control efficiency of vapor ~~recovery systems~~ loss control equipment and vapor collection/ processing systems shall be determined according to EPA Method 2A and either EPA Method 25A or 25B ~~(Section 504 and subsection 504.1)~~, or by CARB- approved test methods ~~(Section 504 and subsection 504.4)~~. EPA Method 2B shall be used for vapor incineration devices.

504.2 Vapor pressure of gasoline ~~(reference Section 204)~~ shall be determined using ~~American Society for Testing and Materials (ASTM) Method D323-94~~ ASTM D323-15a Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method) or ASTM ~~Method D4953-93~~ D4953-15, Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method). ASTM ~~Method D323-94~~ D323-15a shall be used for gasoline either containing no oxygenates or MTBE (methyl tertiary butyl ether) as the sole oxygenate. ~~Method D4953-~~93 ASTM 4953-15 shall be used for oxygenated gasoline.

504.3 Vapor Leaks:

a. If a determination of ~~leak~~ vapor tight status is to be made on ~~Stage I~~ a VR system or spill containment equipment at a ~~gasoline dispensing facility~~ stationary GDF or on a ~~delivery vessel~~ gasoline cargo tank at the station, ~~the method in subsection 504.3~~ at least one of the test method's listed in Section 501 of this rule shall be used.

b. ~~Subsection 504.3~~ Section 501.1 of this rule probe distance and movement parameters not with-standing, 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 ~~5~~ five (5) seconds, and the probe is either consistently further than ~~1~~ one (1) inch from the source and/or the probe is consistently being moved faster than ~~4 cm~~ four centimeters (4 cm) per second.

c. The Control Officer may count it as a failure to perform weekly inspections pursuant to ~~subsection 301.3~~ 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 ~~10~~ ten (10) days.

~~The CARB publication, "Gasoline Facilities - Phase I & II", pursuant to sections 41954 through 41962 of the California Health and Safety Code, is adopted by reference, as it exists on June 16, 1999. This publication is available for reference at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, AZ, 85004. This publication is available for purchase at the (California) Air Resources Board, PO Box 2815, 2020 L Street, Sacramento, CA, 95812-2815; (916) 323-0255 or (916) 322-2886.~~

~~504~~ **505** **TEST METHODS INCORPORATED BY REFERENCE:** ~~The EPA test methods as they exist in the Code of Federal Regulations (CFR) (July 1, 1998 Date of rule adoption), as listed below, are adopted by reference. The CARB test methods as they exist in Stationary Source Test Methods, Volume 2, on April 8, 1999, as listed in subsection 504.4 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 504 are available at the Maricopa County~~

~~Air Quality Department, 1001 N. Central Ave., Phoenix, AZ, 85004.~~ 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.

505.1 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"). ~~Both of the foregoing methods are in~~ 40 CFR60, 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

~~b.~~ **d.** EPA Method 25 ("Determination of Total Gaseous Nonmethane Organic Emissions as Carbon") and its submethods (40 CFR60, Appendix A).

e. EPA Method 27 ("Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure-Vacuum Test") in 40 CFR60, Appendix A.

f. Optical Gas Imaging: Alternative Work Practice for Monitoring Equipment Leaks, 40 CFR60.18(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.

505.2 ~~Gasoline Vapor Pressure:~~ **ASTM Standards:**

a. ~~American Society for Testing and Materials (ASTM) Method D323-94 (1994)~~ ASTM D323-15a "Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).

b. ~~American Society for Testing and Materials (ASTM) Method D4953-93 (1993)~~ ASTM D4953-15 "Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method)

~~Leak Detection Test Method:~~

a. ~~Calibration: Within four hours prior to monitoring, the CGD or OVA shall be suitably calibrated in a manner and with the gas specified by the manufacturer for 20 percent LEL response, or calibrated with methane for a 10,000 ppm response.~~

b. ~~Probe Distance: The probe inlet shall be one inch (2.5 cm) or less from the potential leak source when searching for leaks. The probe inlet shall be one 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 inch (2.5 cm) of an actual or potential leak source, the closest practicable probe distance greater than 1 inch 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 a potential or actual 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 a leak, such that the central axis of the probe tube inlet shall be positioned coaxially with the path of the most concentrated vapors.~~

e. ~~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.~~

505.3 CARB Certification and Test Procedures for Gasoline Vapor Recovery Systems:

a. ~~CARB Test Method CP-201, "Certification Procedure for Vapor Recovery Systems of Dispensing Facilities".~~

b. ~~CARB Test Procedure TP-201.1 - "Determination of Efficiency of Phase I Vapor Recovery Systems of Dispensing Facilities without Assist Processors".~~

c. ~~CARB Test Procedure TP-201.1A - "Determination of Efficiency of Phase I Vapor Recovery Systems of Dispensing Facilities with Assist Processors".~~

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 Overfill 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.

505.4 **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.

Maricopa County
Air Quality Department

State Implementation Plan Revision For The Maricopa County Air Quality Department Ozone Rules Contained In The Arizona SIP December 5, 2016

APPENDIX 3: MARICOPA COUNTY BOARD OF SUPERVISORS' CERTIFIED AGENDA ITEM AND ACTION TAKEN ON NOVEMBER 2, 2016

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COUNTY OF MARICOPA
State of Arizona

Office of the Clerk
Board of Supervisors

State of Arizona ***) ss.***
County of Maricopa ***)***

I, ***Fran McCarroll,*** *Clerk of the Board of Supervisors, do hereby certify that the following is a true and correct statement of agenda items and the action taken by the* ***Board of Supervisors*** *at their meeting held on* ***November 2, 2016****.*

Air Quality

8. NINE (9) RULE REVISIONS TO ADDRESS THE REQUIREMENTS OF THE STATE IMPLEMENTATION PLAN (SIP) FOR "MODERATE" NONATTAINMENT FOR THE 2008 EIGHTHOUR OZONE NATIONAL AMBIENT AIR QUALITY STANDARD (NAAQS)

Pursuant to A.R.S. §§ 49-479(b), convene the scheduled public hearing, to solicit comments and consider the adoption of Maricopa County Air Pollution Control Regulations: Rule 322 (Power Plant Operations), Rule 323 (Fuel Burning Equipment From Industrial/Commercial/Institutional Sources), Rule 324 (Stationary Internal Combustion (IC) Engines), Rule 336 (Surface Coating Operations), Rule 342 (Coating Wood Furniture And Fixtures), Rule 350 (Storage Of Organic Liquids At Bulk Plants And Bulk Terminals), Rule 351 (Loading Of Organic Liquids), Rule 352 (Gasoline Delivery Vessel Testing And Use), Rule 353 (Gasoline In Stationary Dispensing Tanks). The Board is requested to authorize the Maricopa County Air Quality Department to submit the amended rules as a revision to the (Arizona) State Implementation Plan. Upon Board approval, this item will become effective November 2, 2016.

Volatile organic compounds (VOCs) and nitrogen oxides (NOx) are precursors of ozone. Since Maricopa County has been reclassified to "moderate" nonattainment for the 2008 eight-hour ozone NAAQS, the Clean Air Act requires Maricopa County to implement reasonably available control technology (RACT) to control VOC and NOx emissions.

The following six rules are being revised to address RACT for VOCs:
AQ-2015-005-Rule 336 (Surface Coating Operations)
AQ-2015-006-Rule 342 (Coating Wood Furniture And Fixtures)
AQ-2015-008-Rule 350 (Storage Of Organic Liquids At Bulk Plants And Bulk Terminals)
AQ-2015-008-Rule 351 (Loading Of Organic Liquids)
AQ-2015-008-Rule 352 (Gasoline Delivery Vessel Testing And Use)
AQ-2015-008-Rule 353 (Gasoline In Stationary Dispensing Tanks)

The following three rules are being revised to address RACT for NOx:
AQ-2015-002-Rule 322 (Power Plant Operations)
AQ-2015-003-Rule 323 (Fuel Burning Equipment From Industrial/Commercial/Institutional Sources)
AQ-2015-004-Rule 324 (Stationary Internal Combustion (IC) Engines)

Permit fees are not changing due to this action. (C-85-17-009-M-00)

Motion to approve by Supervisor Chucri, seconded by Supervisor Barney

Ayes: Kunasek, Chucri, Barney, Gallardo
Absent: Hickman

9. AQ-2013-002 RULE 345 (VEHICLE AND MOBILE EQUIPMENT COATING)
Pursuant to A.R.S. §49-479(b), convene the scheduled public hearing, to solicit comments and consider the adoption of Maricopa County Air Pollution Control Regulations:Rule 345 (Vehicle And Mobile Equipment Coating). Upon Board approval, this item will become effective November 2, 2016.
Rule 345 limits emissions of volatile organic compounds (VOCs) from motor vehicle and mobile equipment coating and surface preparation operations. The purpose of this rulemaking is to update requirements and work practices for vehicle coating operations that emit VOCs.
Permit fees are not changing due to this action. (C-85-17-010-M-00)

Motion to approve by Supervisor Chucri, seconded by Supervisor Barney

Ayes: Kunasek, Chucri, Barney, Gallardo
Absent: Hickman

10. AQ-2016-001-INCORPORATION BY REFERENCE 2015-2016
Pursuant to A.R.S. §49-479(b), convene the scheduled public hearing, to solicit comments and consider the adoption of Maricopa County Air Pollution Control Regulations: Rule 321 (Municipal Solid Waste Landfills), Rule 360 (New Source Performance Standards), Rule 370 (Federal Hazardous Air Pollutant Program), Rule 371 (Acid Rain), and Appendix G (Incorporated Materials). Upon Board approval, this item will become effective November 2, 2016.
The Maricopa County Air Quality Department (department) is proposing to revise Rules 321, 360, 370, 371, and Appendix G by incorporating federal regulations and documents promulgated by the U.S. Environmental Protection Agency (EPA): New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), Acid Rain and other parts of Title 40 Code of Federal Regulations. The proposed action will include amending the incorporation by reference date from July 1, 2015, to July 1, 2016, in each of the rules and appendix to remain current with federal regulations. The adoption of the proposed amendments to Maricopa County Air Pollution Control Regulations Rules 321, 360, 370, 371 and Appendix G is necessary prior to requesting the EPA's delegation of authority to the department for the implementation and enforcement of the federal regulations and documents.
These amendments should not have an economic impact on businesses in Maricopa County and should not impose additional costs on the regulated community, small businesses, political subdivisions, and members of the public beyond that already incurred by reason of federal or state rule or law. The costs of compliance with these rules have already occurred and were considered when the federal and state rule or law was proposed and adopted.
Permit fees are not changing due to this action. The department did not receive any public comments during the public comment period. (C-85-17-011-M-00)

Motion to approve by Supervisor Chucri, seconded by Supervisor Barney

Ayes: Kunasek, Chucri, Barney, Gallardo
Absent: Hickman

IN WITNESS WHEREOF, *I have hereunto set my hand and affixed the Official Seal of the County of Maricopa. Done at Phoenix, the County Seat, on November 30, 2016.*

Clerk of the Board of Supervisors

CC: File
Maricopa County Air Quality Department

Maricopa County
Air Quality Department

Revisions To The State Implementation Plan Revision For The Maricopa County Air Quality Department Ozone Rules Contained In The Arizona SIP

Originally Dated December 5, 2016
Originally Submitted To The EPA On Decmeber 19, 2016
June 16, 2017

APPENDIX 3A: MARICOPA COUNTY BOARD OF SUPERVISORS' CERTIFIED AGENDA ITEM AND ACTION TAKEN ON MAY 24, 2017

COUNTY OF MARICOPA

State of Arizona

Office of the Clerk

Board of Supervisors

State of Arizona ***) ss.***
County of Maricopa ***)***

I, ***Fran McCarroll,*** *Clerk of the Board of Supervisors, do hereby certify that the following is a true and correct statement of the agenda item and the action taken by the* ***Board of Supervisors*** *at their meeting held on* ***May 24, 2017****.*

7. REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT) STATE IMPLEMENTATION PLAN (SIP) AND NEGATIVE DECLARATIONS

Pursuant to A.R.S. §49-479(b), convene the scheduled public hearing, to solicit comments and consider the adoption of the submittal of the RACT SIP and negative declarations to the U.S. Environmental Protection Agency (EPA) as a revision to the (Arizona) SIP. Following the public hearing, the Board is requested to approve the submittal of the RACT SIP and negative declarations to the EPA as a revision to the (Arizona) SIP. Upon Board approval, this item will become effective May 24, 2017.

The RACT SIP is an analysis made by the Maricopa County Air Quality Department (MCAQD) that concludes that the MCAQD has fulfilled the requirements of RACT, as applicable to the 2008 eight-hour ozone national ambient air quality standards (NAAQS) for all Control Techniques Guidelines (CTG) source categories and for all major sources of volatile organic compounds (VOCs) and nitrogen oxides (NOx). RACT is the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. CTGs, issued by the EPA, are intended to provide States information that should assist them in determining RACT for source categories. In instances where either there were no sources in Maricopa County meeting a CTG source category or where the number of sources or the amount of emissions were de minimis, the MCAQD made a negative declaration regarding such CTG source category; negative declarations are included in the RACT SIP. Permit fees are not changing due to this action. (C-85-17-018-M-00)

Motion to approve by Supervisor Gates, seconded by Supervisor Hickman

Ayes: Chucri, Gates, Hickman, Gallardo
Absent: Barney

IN WITNESS WHEREOF, *I have hereunto set my hand and affixed the Official Seal of the County of Maricopa. Done at Phoenix, the County Seat, on May 24, 2017.*

Clerk of the Board of Supervisors

File

Maricopa County
Air Quality Department

State Implementation Plan Revision For The Maricopa County Air Quality Department Ozone Rules Contained In The Arizona SIP December 5, 2016

APPENDIX 4: ARIZONA REVISED STATUTES

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§§49-112, 49-471.09, 49-474, 49-479, And 49-480

49-112. County regulation; standards

A. When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.

2. There is credible evidence that the rule, ordinance or other regulation is either:

(a) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.

(b) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulations.

3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

B. When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

C. If a county has adopted rules, ordinances or other regulations pursuant to subsection B of this section and at any time cannot comply with subsection B of this section, the county shall give notice of noncompliance to the director. The county shall file that notice with the secretary of state for publication in the next issue of the Arizona administrative register at no cost to the county. If the county does not comply with subsection B of this section within one year after publication of the notice in the Arizona administrative register, the director shall provide written notice to and assert regulatory jurisdiction over those persons and entities subject to the affected county rules, ordinances or other regulations.

D. Except as provided in chapter 3, article 3 of this title, before adopting or enforcing any rule, ordinance or other regulation pursuant to subsection A or B of this section, the county shall comply with all of the following:

1. File with the secretary of state a written statement including a summary of the proposed rule, ordinance or other regulation and a demonstration of the grounds and evidence of compliance with subsection A or B of this section. The summary shall provide the name of the person with the county to contact with questions or comments. The secretary of state shall publish the written statement in the next issue of the Arizona administrative register at no cost to the county. The county shall

publish notice of the availability of the complete summary and the demonstration in other newspapers as may be required by this title and shall make the text of any proposed environmental rule, ordinance or other regulation available to the public at the same time it files the written summary of the environmental rule, ordinance or other regulation with the secretary of state as provided in this paragraph.
2. Provide at least thirty days' opportunity for comment by the public after publication of the summary as prescribed by paragraph 1 of this subsection. The county shall accept written comments on the proposed rule, ordinance or regulation and the written demonstration.
3. Respond in writing and make available to the public for a reasonable cost the county's responses to the written comments submitted by the public pursuant to paragraph 2 of this subsection.
4. Provide for a public hearing at the request of the authorized county officer or if there is sufficient public interest. The county shall publish the notice of any public hearing at least twenty days prior to the hearing. The county shall submit the notice of the public hearing to the secretary of state for publication in the next issue of the Arizona administrative register at no cost to the county. The county shall publish notice of any public hearing required pursuant to this paragraph in any newspaper as prescribed by this title or county ordinance. The county shall select a time and location for the public hearing that affords a reasonable opportunity for the public to participate.
E. A county is not required to comply with subsection D, paragraphs 2, 3 and 4 of this section before it adopts or enforces a rule, ordinance or other regulation if the rule, ordinance or other regulation only adopts by reference an existing state or federal rule or law that provides greater regulatory flexibility for regulated parties and otherwise satisfies the requirements prescribed in subsection B of this section.
F. Until June 30, 1995, a person may file with the clerk of the board of supervisors for that county a petition challenging a county rule, ordinance or other regulation adopted before July 15, 1994 for compliance with the criteria set forth in subsection A or B of this section. The petition shall contain the grounds for challenging the specific county rule, ordinance or other regulation. Within one year after the petition is filed, the board of supervisors shall review the challenged rule, ordinance or other regulation and make a written demonstration of compliance with the criteria set forth in subsection A or B of this section and challenged in the petition. Any rules, ordinances or other regulations that have been challenged and for which the board of supervisors has not made the written demonstration within one year of the filing of the petition required by this section become unenforceable as of that date. If a county has already made a written demonstration under section 49-479, subsection C, for a rule, ordinance or regulation, the person filing the petition shall state the specific grounds in the petition why that demonstration does not meet the requirements of this section.
G. A rule, ordinance or other regulation adopted pursuant to subsection A of this section may not be invalidated subsequent to its adoption on the grounds that the economic feasibility analysis is insufficient or inaccurate if a county makes a good faith effort to comply with the economic feasibility requirement of subsection A, paragraph 2, subdivision (a), of this section and has explained in the written statement, made public pursuant to subsection D of this section, the methodology used to satisfy the economic feasibility requirement.
H. This section shall not apply to any rule, ordinance or other regulation adopted by a county pursuant to:
1. Title 36 for which the state has similar statutory or rule making authority in this title.

2. Section 49-391.
3. Chapter 3, article 8 of this title.
4. Chapter 4, article 3 of this title and section 49-765.
5. Nonsubstantive rules relating to the application process which have a de minimis economic effect on regulated parties.

49-471.09. County rule or ordinance making record
A. A control officer shall maintain for public inspection an official rule or ordinance making record for each proposed rule or ordinance for which a notice is published in the register and each final rule or ordinance filed with the office of the secretary of state.
B. The county rule or ordinance making record shall contain all of the following:
1. Copies of all publications in the register with respect to the rule or ordinance.
2. All written petitions, requests, submissions and comments received by the county and all other written materials considered or prepared by the control officer in connection with the rule or ordinance.
3. Any official transcript of oral presentations made in the proceeding on which the rule or ordinance is based, and any tape recording or stenographic record of those presentations, and any memorandum summarizing the contents of those presentations.
4. A copy of any materials submitted to the board of supervisors.
5. A copy of the final rule or ordinance adopted by the board of supervisors and the preamble, concise explanatory statement and response to comments.

49-474. County control boards
The board of supervisors of each county may authorize the board of health or health department of their respective counties in cooperation with the department of environmental quality to:
1. Study the problem of air pollution in the county.
2. Study possible effects on adjoining counties.
3. Cooperate with chambers of commerce, industry, agriculture, public officials and all other interested persons or organizations.
4. Hold public hearings if in their discretion such action is necessary.
5. The board of supervisors by resolution may establish an air pollution control district.

49-479. Rules; hearing
A. The board of supervisors shall adopt such rules as it determines are necessary and feasible to control the release into the atmosphere of air contaminants originating within the territorial limits of the county or multi-county air quality control region in order to control air pollution, which rules, except as provided in subsection C shall contain standards at least equal to or more restrictive than those adopted by the director. In fixing such standards, the board or region shall give consideration but shall not be limited to:
1. The latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on health and welfare which may be expected from the presence of an air pollution agent, or combination of agents in the ambient air, in varying quantities.
2. Atmosphere conditions and the types of air pollution agent or agents which, when present in the atmosphere, may interact with another agent or agents to produce an adverse effect on public health and welfare.

3. Securing, to the greatest degree practicable, the enjoyment of the natural attractions of the state and the comfort and convenience of the inhabitants.
B. No rule may be enacted or amended except after the board of supervisors first holds a public hearing after twenty days' notice of such hearing. The proposed rule, or any proposed amendment of a rule, shall be made available to the public at the time of notice of such hearing.
C. A county may adopt or amend a rule, emission standard, or standard of performance that is as stringent or more stringent than a rule, emission standard or standard of performance for similar sources adopted by the director only if the county complies with the applicable provisions of section 49-112.
D. All rules enacted pursuant to this section shall be made available to the public at a reasonable charge upon request.

49-480. Permits; fees
A. The board of supervisors may adopt a program for the review, issuance, revision, administration and enforcement of permits and for public review of proposed permits for sources that are subject to section 49-426, subsection A, that are not under the jurisdiction of the state pursuant to section 49-402 and that are not otherwise exempt pursuant to section 49-426, subsection B and subsection K of this section. This program shall include provisions for administration, inspection and enforcement of general permits issued pursuant to section 49-426, subsection H and subsection J of this section.
B. Procedures for the review, issuance, revision and administration of permits issued pursuant to this section and required to be obtained pursuant to title V of the clean air act including sources that emit hazardous air pollutants shall be substantially identical to procedures for the review, issuance, revision and administration of permits issued by the department under this chapter. Such procedures shall comply with the requirements of sections 165, 173 and 408 and titles III and V of the clean air act and implementing regulations for sources subject to titles III and V of the clean air act. Procedures for the review, issuance, revision and administration of permits issued pursuant to this section and not required to be obtained pursuant to title V of the clean air act shall impose no greater procedural burden on the permit applicant than procedures for the review, issuance, revision and administration of permits issued by the department under sections 49-426 and 49-426.01 and other applicable provisions of this chapter.
C. Upon adoption of a permit program by the board of supervisors pursuant to this section, no person may begin actual construction, operate or make a modification to any source subject to the permit program without complying with the requirements of that program.
D. Permits issued pursuant to a program adopted under this section are subject to payment of a reasonable fee to be determined as follows:
1. For any source required to obtain a permit under title V of the clean air act, the board of supervisors shall establish by rule a system of fees consistent with and equivalent to that prescribed under section 502 of the clean air act. Such system shall prescribe procedures for increasing the fee each year by the percentage, if any by which the consumer price index for the most recent calendar year ending before the beginning of such year exceeds the consumer price index for the calendar year 1989.
2. For any facility subject to the permitting requirements of this chapter but not required to obtain a permit under title V of the clean air act, the board of supervisors shall determine a permit fee based on all reasonable direct and indirect costs required to administer the permit, but not exceeding twenty-five thousand dollars.

The board of supervisors shall establish an annual inspection fee, not to exceed the average cost of services.
E. Funds received for permits issued pursuant to this section shall be deposited in a special public health fund and shall be used by the control officer to defray the costs of implementing this article.
F. Permits issued pursuant to this section for a source required to obtain a permit under title V of the clean air act shall, and for a source that is not required to obtain a title V permit may, contain all of the following:
1. Conditions reflecting all applicable requirements of this article and rules adopted pursuant to this article.
2. Enforceable emission limitations and standards.
3. A schedule for compliance, if applicable.
4. The requirement to submit at least every six months the results of any required monitoring.
5. Any other conditions that are necessary to assure compliance with this article and the clean air act, including the applicable implementation plan.
G. The control officer may refuse to issue any permit to any source subject to the requirements of title V of the clean air act if the administrator objects to its issuance in a timely manner as prescribed under title V of the act.
H. In the case of a permit with a term of three or more years issued pursuant to the requirements of title V of the clean air act to a major source, the control officer shall require revisions to the permit to incorporate applicable standards and regulations adopted by the administrator pursuant to the clean air act after the issuance of the permit. The control officer shall require any revisions as expeditiously as practicable but not later than eighteen months after the promulgation of such standards and regulations. No permit revision shall be required if the effective date of the standards and regulations is after the expiration of the permit. Any permit revision required pursuant to this subsection shall be treated as a permit renewal.
I. Except as provided in section 49-426, subsection B and subsection A of this section, any person burning used oil, used oil fuel, hazardous waste or hazardous waste fuel in any machine, incinerator or device shall first obtain a permit from the control officer. Any permit issued by the control officer under this subsection shall contain, at a minimum, conditions governing:
1. Limitations on the types, amounts and feed rates of used oil, used oil fuel, hazardous waste or hazardous waste fuel which may be burned.
2. The frequency and types of fuel testing to be conducted by the person.
3. The frequency and type of emissions testing or monitoring to be conducted by the person.
4. Requirements for record keeping and reporting.
5. Numeric emission limitations expressed in pounds per hour and tons per year for air contaminants to be emitted from the facility burning used oil, used oil fuel, hazardous waste or hazardous waste fuel.
J. The board of supervisors may authorize by rule the control officer to issue a general permit for a defined class of facilities if that class of facilities has not been issued a general permit by the director for sources in that county pursuant to section 49-426, subsection H. The criteria for issuance of a general permit are those applicable to the director pursuant to section 49-426, subsection G.
K. The board of supervisors may identify by rule sources or classifications of sources for which a permit is not required and pollutant-emitting activities and emissions units at permitted sources that are not subject to inclusion in the permit. The criteria

for exemptions granted pursuant to this subsection are those applicable to exemptions granted by the director pursuant to section 49-426, subsection B.

L. In determining whether a permitting threshold established pursuant to this section applies to an existing source, the control officer shall exclude particulate matter that is not subject to a national ambient air quality standard under the clean air act.

M. The board of supervisors may adopt a rule or ordinance that establishes less burdensome permit procedures and requirements for permits that are not required to be obtained pursuant to title V of the clean air act. Until the effective date of a rule or ordinance adopted by a board of supervisors pursuant to this section, the control officer, either on the control officer's own initiative or on the request of a permit applicant, may waive requirements that are not appropriate for non-title V sources.

Maricopa County
Air Quality Department

State Implementation Plan Revision For The Maricopa County Air Quality Department Ozone Rules Contained In The Arizona SIP December 5, 2016

APPENDIX 5: NOTICES OF PROPOSED RULEMAKING

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NOTICE OF PROPOSED RULEMAKING
MARICOPA COUNTY AIR POLLUTION C3ONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 322: POWER PLANT OPERATIONS
PREAMBLE

1. **Rule affected** **Rulemaking action**

Rule 322: Power Plant Operations — Amend

2. **Statutory authority for the rulemaking:**

Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. **List of public notices addressing the rulemaking:**

Notice of Briefing to Maricopa County Manager: May 2015
Notice of Stakeholder Workshops: June 29, 2015, September 3, 2015, and February 24, 2016

4. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name: Johanna M. Kuspert or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, Arizona 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

5. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary:

Rule 322 (Power Plant Operations) limits the discharge of nitrogen oxides (NO_x), sulfur oxides, particulate matter and carbon monoxide emissions into the atmosphere from stationary fossil-fuel-fired equipment at power plants and cogeneration plants. Revisions to Rule 322 are being proposed to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The proposed amendments in Rule 322 include Reasonably Available Control Technology (RACT) for NO_x.

In addition, the proposed amendments correct typographical or other clerical errors; make minor grammatical changes to improve readability or clarity; modify the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or make various other minor changes of a purely editorial nature. As these changes do not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 14 of this notice.

Issues Raised and Discussed During this Rulemaking Process:

Stakeholders expressed a general understanding for the need for rule revisions based on the department's nonattainment status; however, Stakeholders were concerned about the emission limitations and what is considered "RACT" and what is considered "beyond RACT". Stakeholders requested comparisons to comparable agencies to see how they have managed to achieve RACT. In addition, questions were raised regarding the following:

- The stringency of Rule 322 compared to the stringency in the Arizona Department of Environmental Quality's (ADEQ's) rules
- Cost effectiveness and its relationship to RACT and the impact on sources
- Most Achievable Control Technology (MACT) standards and the application to the boiler standards
- The compliance schedule and the timing of when sources must show compliance with the proposed emission limitations
- The phrase "owner and/or operator" and the implications of responsibility and liability
- Exemptions for equipment operating hours and during startup and shutdown

- The requirements for continuous emission monitoring systems and allowances for alternative methods

Description of Proposed Amendments:

Regarding Applicability:

- Section 102 (Applicability): Rule 322 is proposed to no longer apply only to equipment for which construction commenced prior to May 10, 1996. Rule 322 is proposed to apply to all equipment, except for equipment that was built or modified after May 10, 1996 that is already subject to more stringent federally enforceable standards. This revision will make the rule comply with RACT, while also recognizing that sources that are complying with more stringent federally and/or locally enforceable standards are complying with RACT and are therefore in compliance with this rule. Rule 322 is proposed to include new Section 102.4 (per the U.S. Environmental Protection Agency's (EPA's) comment) a provision that states that facilities subject to Rule 322 may be subject to New Source Performance Standards (NSPS) and/or National Emission Standards for Hazardous Air Pollutants (NESHAP).
- Section 104 (Partial Exemptions): Rule 322 is proposed to include a partial exemption for equipment that operates less than or equal to 10 percent annual capacity factor per calendar year. This revision would make the rule comply with RACT, while also recognizing that if equipment operates below the specified rate then such equipment would not be expected to discharge into the atmosphere nitrogen oxides in excess of the limits specified in the rule and would therefore be in compliance with this rule. Also, Rule 322 is proposed to include the definition of "annual capacity factor" in Section 200; definition is similar to definition used in 40 CFR Part 63, Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters)
- Section 104.1(c) (Partial Exemptions): Rule 322 is proposed to be revised to clarify the partial exemption for military training facilities. The EPA commented that the term "military training facility" is unclear in this rule, especially as distinguished from other facilities such as "garrisons". The EPA suggested that this exemption should focus on the specific types of activities at these facilities that reasonably require exemptions, rather than the facilities themselves. The EPA suggested using Imperial County Air Pollution Control District, Rule 800, Section E(6) (General Requirements for Control of Fine Particulate Matter (PM10)) as an example. The text proposed in Section 104.1(c) is from Imperial County Air Pollution Control District, Rule 800, Section E(6) (General Requirements for Control of Fine Particulate Matter (PM10)).
- Sections 104.2 and 104.3 (Partial Exemptions): Rule 322 is proposed to be revised to include source specific limitations on emergency fuel use that is or will be incorporated in a source permit. The EPA commented that engines and fuel use allow alternative emission limits from normal operating conditions; this is generally allowable but must also include appropriate limits on the length of the emergency condition and alternative emergency emission limits. EPA asked that the department revise this section.

Regarding Definitions:

- Section 235 (Definition of "Steady State"): Rule 322 is proposed to include a definition of "steady state"; the text of the definition is proposed by one of the Stakeholders/sources subject to Rule 322 – Arizona Public Service (APS). The EPA commented that Rule 322 uses the term "steady state operation" without further description.

Regarding Limitations for Particulate Matter:

- Sections 301.1 and 301.2: The limitations for particulate matter-fuel type and testing are proposed to be deleted. Stakeholders commented in January 2016 that Sections 301.1 and 301.2 might not be needed because equipment cannot use anything other than natural gas for non-emergency purposes.

Regarding Limitations for Nitrogen Oxides (NO_x):

- Section 305.1: The NO_x limitation when burning gaseous fossil fuel is proposed to be changed from "155 ppmv" to "42 ppmdv". The EPA has advised that this limitation is considered RACT for NO_x; this limitation is similar to limits in Imperial County's (CA) RACT SIP for the 1997 ozone standard for turbines (Rule 400.1 adopted 2010).
- Section 305.2: The NO_x limitation when burning liquid fossil fuel is proposed to be changed from "230 ppmv" to "65 ppmdv". The EPA has advised that this limitation is considered RACT for NO_x; this limitation is similar to limits in Imperial County's (CA) RACT SIP for the 1997 ozone standard for turbines (Rule 400.1 adopted 2010).

Regarding Alternative Monitoring Methods:

- Section 200 (Definitions): The definitions of "low mass emissions (LME)" and "predictive emissions monitoring system (PEMS)" are proposed to be added to Rule 322. The text for the definition of "LME" is from 40 CFR Part 75 (Acid Rain) and the text for the definition of "PEMS" is from the EPA.
- Section 301 (Good Combustion Practices for Turbines): Rule 322 is proposed to include a provision that if CEMS or another approved monitoring method is used, good combustion practices for turbines are considered to have been met.
- Section 301.1 (Good Combustion Practices for Turbines): Rule 322 is proposed to include text regarding the frequency of monitoring temperature differential across the combustion burners. The EPA commented that the frequency of differential temperature measurement should be defined and that continuous monitoring of this differential should be required.
- Section 307.1 (Requirements for Emission Control System (ECS) Monitoring Equipment): Rule 322 is proposed to include a provision that allows for installing an approved combustion control system (as an alternative to installing an emission control system (ECS)), in order to comply with the standards of the rule. Not all "approved combustion control systems" are "emission control systems"; however, approved combustion control systems should be designed and operated in accordance with good engineering practices to reduce emissions (which matches the definition of "emission control system").
- Section 307.3(d) (Operation and Maintenance (O&M) Plan Required for ECS): Rule 322 is proposed to be clarified to include text that the department inserts into Title V permit renewals, which requires facilities to comply with O&M Plan revisions upon submittal not department approval.
- Section 307.4 (Continuous Emission Monitoring Systems): Rule 322 is proposed to include other methods (other than CEMS) for measuring nitrogen oxides.

Regarding Administrative Requirements:

- Sections 401 (In Existence and In Compliance) and 402 (In Existence and Non-Compliant): Rule 322 is proposed to include compliance schedules for equipment that is in existence and in compliance and in existence and non-compliant.
- Section 403 (Emergency Standby Units): Rule 322 is proposed to include a compliance schedule for emergency standby units.

Regarding Compliance Determinations:

- Section 504 (Compliance Determination-Test Methods Incorporated By Reference): Rule 322 is proposed to include a provision that allows for the use of alternative test methods to determine compliance with the rule and to clarify the provision regarding when more than one test method is permitted for a compliance determination.
- Section 504.12 (Compliance Determination-Test Methods Incorporated By Reference): Rule 322 is proposed to delete the text method "American Society of Testing Materials, ASTM Method D1266-98, ("Standard Test Method for Sulfur in Petroleum Products - Lamp Method"), 1998". The EPA commented that the test method may not be appropriate; its range is 0.01-0.4% which will not be able to verify compliance with the definition of ultra low sulfur diesel fuel at <0.0015%.

6. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
   - **(a)** Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
   - **(b)** Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes

or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.

3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. While currently classified as a "marginal" ozone nonattainment area, the county recently failed to meet 2008 8-hour ozone standard by the marginal area attainment date and anticipates EPA will issue a notice proposing to re-classify the area to "moderate". Further, a portion of the county was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the county to continue to maintain the measures and requirements that allowed the county to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM_{10} 24-hour standard. This is the only serious PM_{10} nonattainment area in Arizona. Revisions to Rule 322 are being proposed to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The proposed amendments in Rule 322 include Reasonably Available Control Technology (RACT) for NO_x.

The department complies with A.R.S. § 49-112(B) in that the proposed amendments to Rule 322 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49, address the peculiar local conditions in Maricopa County, are authorized under A.R.S. Title 49, Chapter 3, Article 3, and are not in lieu of a state program.

7. **Documents and/or studies referenced and/or reviewed for this rulemaking:**

Not applicable

8. **Showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**

Not applicable

9. **Preliminary summary of the economic, small business, and consumer impact:**

The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

An identification of the rulemaking.

This rulemaking is proposing to revise Rule 322 (Power Plant Operations).

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.

The persons who will be directly affected by and bear the costs of this rulemaking will be facilities in Maricopa County that operate the following types of equipment built or modified before May 10, 1996, that burn fossil fuel:

- Electric utility steam generating unit or cogeneration steam unit sued to generate electric power that has a heat input of equal to or greater than 100 MMBtu/hour (20 MW);
- Electric utility stationary gas turbine with a heat input at peak load equal to or greater than 10 MMBtu/hour (2.9 MW) based upon the lower heating value of the fuel;
- Cooling towers associated with these types of equipment.

The department has issued permits for 5 facilities that are subject to this rule as revised.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**

It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

The benefits of the rule revision are anticipated to be a result of the following changes:

- Changing the NO_x limitation when burning gaseous fossil fuel from "155 ppmv" to "42 ppmdv" to conform to federal performance standards;
- Changing the NO_x limitation when burning liquid fossil fuel from "230 ppmv" to "65 ppmdv" to conform to federal performance standards;
- Exempting a source from the NO_x limitations and continuous emissions monitoring system requirements if the source submits a Reasonable Available Control Technology (RACT) evaluation to the Control Officer if such RACT evaluation if incorporated into the source's permit;
- Making minor changes of a purely editorial nature, e.g., correct typographical or other clerical errors; make minor grammatical changes to improve readability;
- Modifying the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules.

The entities with sources subject to revised Rule 322 have submitted a RACT evaluation for their subject units, and have stated that they will not incur costs for compliance with the rule revisions. In their RACT evaluation, these entities determined that the most cost-efficient method to meet the RACT NO_x limitations is to limit the hours of operation for particular power plant units. The entities already have similar limitations in their Title V permits, and as such, there will be no additional burden on them to comply with the new RACT-based hourly limits.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity provided by the Rule 322 revisions will provide a benefit to the regulated community; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision will not impose increased monetary or regulatory costs on individuals so regulated.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated.

(a) **An identification of the small businesses subject to the rulemaking.**

There are no small businesses subject to this rulemaking.

(b) **The administrative and other costs required for compliance with the rulemaking.**

This rulemaking updates and clarifies existing rule provisions and definitions to be consistent with federal performance standards, and to reduce confusion and improve understanding and readability. The department considered the implications of the proposed amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**

There are no small businesses subject to this rulemaking.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**

This rulemaking will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated. As such, there are no costs to pass through to consumers which means there are no impacts on consumers.

A statement of the probable effect on state revenues.

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

10. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name: Johanna M. Kuspert or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, AZ 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

11. **Time, place, and nature of the proceedings for the rulemaking:**

Written oral proceeding requests or written comments or both will be accepted until the record is closed on June 13, 2016, 5:00 p.m. Written oral proceeding requests or written comments or both may be mailed, e-mailed, or hand delivered to the department (see Item #4 of this notice). An oral proceeding will be scheduled only upon receipt of a written request before the record is closed on June 13, 2016, 5:00 p.m. Written comments received during the comment period and before the record is closed on June 13, 2016, 5:00 p.m. will be considered formal comments to the Notice of Proposed Rulemaking and will be responded to in the Notice of Final Rulemaking.

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

Not applicable

13. **Incorporations by reference and their location in the rule:**

The department incorporated by reference sections of the Code of Federal Regulations in the following sections of the rule:
Section 219 (Definition of "Low Mass Emissions (LME))
Section 307.4 (Continuous Emission Monitoring Systems)
Section 504 (Compliance Determination-Test Methods Incorporated By Reference)

14. **Full text of the rule follows:**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS
RULE 322
POWER PLANT OPERATIONS
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~~Revised 10/17/07~~

Adopted 07/02/2003; Revised 10/17/2007; **Revised xx/xx/xxxx**

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 equipment at ~~existing power plants and existing cogeneration plants~~ electric utility stationary gas turbines, electric utility steam generating units or cogeneration steam generating units and to limit particulate matter emissions from cooling towers associated with this equipment.

102 **APPLICABILITY:** This rule applies to any of the following types of equipment that burn fossil fuel ~~for which construction commenced prior to May 10, 1996,~~ except for equipment that was built or modified after May 10, 1996 that is already subject to more stringent federally and/or locally enforceable standards:

102.1 Each electric utility steam generating unit or cogeneration steam generating unit used to generate electric power that has a heat input of equal to or greater than 100 million (MM) Btu/hour (29 megawatts (MW)).

102.2 Each electric utility stationary gas turbine with a heat input at peak load equal to or greater than 10 MMBtu/hour (2.9 MW) based upon the lower heating value of the fuel.

102.3 Each cooling tower associated with the type of equipment listed in ~~subsections 102.1 and 102.2~~ 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 equipment.

104 **PARTIAL EXEMPTIONS:**

104.1 ~~Stationary gas turbines that meet any of the following criteria listed below are exempt from Sections 304 and 305 and subsections 301.1, 301.2, 306.4, and 501.4 of this rule:~~

~~a. Used for fire-fighting; or~~

~~b. Used for flood control; or~~

~~c. Used in the military at military training facilities or military gas turbines for use in other than a garrison; or~~

~~d. Engaged by manufacturers in research and development of equipment for either gas turbine emission control techniques or gas turbine efficiency improvements.~~

104.2 ~~All equipment listed in Section 102 fired with an emergency normally fired with natural gas is exempt from Sections 304 and 305 and subsections 301.1, 301.2, and 306.4, 501.4 of this rule.~~

104.3 ~~All equipment listed in Section 102 shall be exempt from Sections 304 and 305 and subsections 301.1, 301.2, and 306.4 306.6, of this rule for 36 cumulative hrs. of firing emergency fuel per year, per unit for testing, reliability, training, and maintenance purposes.~~

104.1 Stationary gas turbines that meet any of the criteria listed below are exempt from Sections 305, 306, 307.4, and 501.4 of this rule:

a. Used for fire-fighting

b. Used for flood control

c. Used in the following military training activities conducted by the Department of Defense: (1) military tactical training or (2) maintenance, repair, and removal of targets and munitions associated with military tactical training

d. Engaged by manufacturers in research and development of equipment for either gas turbine emission control techniques or gas turbine efficiency improvements

104.2 Any equipment listed in Section 102 of this rule fired with an emergency fuel but normally fired with natural gas and that is or will be incorporated in a permit issued by the Control Officer for that source, is exempt from Sections 305, 306, 307.4, and 501.4 of this rule.

104.3 Any equipment listed in Section 102 of this rule that fires emergency fuel for 36 cumulative hours per year or less, per unit for testing, reliability, training, and maintenance purposes and that is or will be incorporated in a permit issued by the Control Officer for that source, is exempt from Sections 305, 306, 307.4 of this rule.

104.4 Any equipment listed in Section 102 of this rule that operates less than or equal to 10 percent annual capacity factor per calendar year and that is or will be incorporated in a permit issued by the Control Officer for that source, is exempt from Sections 305, 306, and 307.4 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.~~ 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 boiler or process heater from the fuels burned during a calendar year and the potential heat input to the boiler or process heater had it been operated for 8,760 hoursduring a year at the maximum steady state design heat input capacity.

~~201~~ **202** **COGENERATION STEAM GENERATINGUNIT:** A steam or hot water generatingunit that simultaneously produces both electrical (or mechanical) and thermal energy (suchas heat or steam) from the same primaryenergy source and supplies more than one-third of its potential electric output to any utility power distribution system for sale.

~~202~~ **203** **COMBINED CYCLE GAS TURBINE:** A type of stationary gas turbine wherein heat from the turbine exhaust is recovered by a steam generating unit to make steam for use in a steam-electric turbine.

~~203~~ **204** **CONTINUOUS EMISSIONMONITORINGSYSTEM (CEMS):** The total equipment required to sample and analyze emissions or process parameters such as opacity, nitrogen oxide, and oxygen or carbon dioxide, and to provide a permanent data record.

~~204~~ **205** **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.

~~205~~ **206** **CORRECTIVE ACTIONPLAN (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 ECSoperating practices, possible operational changes, and progressreports.

~~206~~ **207** **DISTILLATE OIL:** A petroleum fraction of fuel oil produced bydistillation that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-01, "Standard Specification for Fuel Oils."

~~207~~ **208** **DRIFT:** Water droplets, bubbles, and particulate matter that escape from cooling tower stacks.

~~208~~ **209** **DRIFT ELIMINATOR:** Device used to remove drift from cooling tower exhaust air, thus reducing water loss byrelying 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~~ **210** **DRIFT RATE:** Percentage (%) of circulating water flow rate that passes through a drift eliminator on a coolingtower.

~~210~~ **211** **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. Both simple and combined cycle gas turbines are types of electric utility stationarygas turbines.

~~211~~ **212** **ELECTRIC UTILITY STEAM GENERATINGUNIT:** Anysteam electric generating unit that uses fossil fuel and is constructed for the purpose of supplying more than one-third of its potential electric output capacityand more than 25 MW electric output to any utility power distribution system for sale.

~~212~~ **213** **EMERGENCY FUEL:** Fuel fired onlyduring circumstancessuch as natural gas emergency, natural gas curtailment, or breakdownof deliverysystem 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.

214 **EMERGENCY STANDBY UNIT:** Astationarygas turbine that is limited by permit condition to be operated only as a mechanical or electrical power source for a facility when the primary power source for a facility has been rendered inoperable due to failure beyond the reasonable control of the operator, except due to power interruption pursuant to an interruptible power supplyagreement. Electricity generated by sucha unit cannot be sold.

~~213~~ **215** **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.

~~214~~ **216** **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~~ **217** **FUEL SWITCHING STARTUP PROCESS:** The act of changing from one type of fuel to a different type of fuel.

~~216~~ **218** **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~~ **219** **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.

220 **LOW MASS EMISSIONS (LME):** The methodology from 40 CFR Part 75.19(c) that units, which meet the definition of low emissions unit in 40 CFR Part 72.2, may use in lieu of continuous emission monitoring systems.

~~218~~ **221** **LOW SULFUR OIL:** Fuel oil containing less than or equal to 0.05% by weight of sulfur.

~~219~~ **222** **LOWER HEATING VALUE (LHV) OR NETHEATINGVALUE:** The amount ofhea t 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~~ **223** **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:

~~220.1~~ **223.1** 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

~~220.2~~ **223.2** A natural disaster; or

~~220.3~~ 223.3 The natural gas is curtailed pursuant to governing state, federal or local agency rules or orders; or

~~220.4~~ 223.4 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.

~~221~~ **224** **OPACITY:** A condition of the ambient air, or any part thereof, in which an air contaminant partially or wholly obscures the viewof an observer.

225 **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.

~~222~~ **226** **PARTICULATE MATTER EMISSIONS:** Any and all particulate matter emitted to the ambient air as measured by applicable state and federal test methods.

~~223~~ **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).

~~224~~ **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 **PREDICTIVE EMISSION MONITORING SYSTEM (PEMS):** The total equipment necessary for the determination of a gas concentration or emission rate using process or control device operating parameter measurements and a conversion equation, a graph, or computer program to produce results in units of the applicable emission limitation or standard.

~~225~~ **230** **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.

~~226~~ **231** **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.

~~227~~ **232** **RESIDUAL OIL:** The heavier oils that remain after the distillate oils and lighter hydrocarbons are distilled off in refinery operations. This includes crude oil or fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05 % by weight, and all fuel oil numbers 4, 5, and 6, as defined by the American Society of Testing and Materials in ASTM D396-01, "Standard Specifications for Fuel Oils."

~~228~~ **233** **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, or that does not recover heat from the gas turbine exhaust gases to heat water or generate steam.

~~229~~ **234** **STATIONARY GAS TURBINE:** Any simple cycle gas turbine, regenerative gas turbine or any gas turbine portion of a combined cycle gas turbine that is not self-propelled or that is attached to a foundation.

235 **STEADY STATE:** A safe, stable megawatt load at which a unit is capable of being held for an extended period oftime, without creating an unsafe or unstable operating condition.

~~230~~ **236** **SULFUR OXIDES (SO_x):** The sum of the oxides of sulfur emitted from the flue gas from a combustion unit that aredirectl y dependent upontheamoun t ofsulfu r in the fuel used.

~~231~~ **237** **THIRTY (30) DAY ROLLING AVERAGE:** An arithmetic mean or average of all hourly emission rates for 30 successive combustion equipment operating days and calculated by a CEMS every hour.

~~232~~ **238** **THREE (3) HOUR ROLLING AVERAGE:** An arithmetic mean or average of the most recent three one (1) hour tests, or an arithmetic mean or average over a period of three hours which is newly calculated with each hourly measurement.

~~233~~ **239** **TOTAL DISSOLVED SOLIDS (TDS):** The amount of concentrated matter reported in milligrams/liter(mg/l) or parts per million (ppm) left after filtration of a well-mixed sample through a standard glass fiber filter. The filtrate is evaporated to dryness in a weighed dish and dried to constant weight at 180□C and the increase in dish weight represents the total dissolved solids.

~~234~~ **240** **UNCOMBINED WATER:** Condensed water containing no more than analytical trace amounts of other chemical elementso r compounds.

SECTION 300 – STANDARDS

~~301 LIMITATIONS – PARTICULATE MATTER:~~

~~301.1 Fuel Type: An owner or operator of any combustion equipment listed in Section 102 shall burn only natural gas except when firing emergency fuel per subsections 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, demonstrated and documented through performance testing of this alternate fuel using Test Method 5. This usage of different fuels other than natural gas shall be approved by the Control Officer prior to usage.~~

~~301.2 Particulate Matter Testing: A backhalf analysis shall be performed, using Reference Method 202 referenced in subsection 504.6, each time a compliance test for particulate matter emissions to meet the standard in subsection 301.1 of this rule is performed using Test Method 5.~~

~~301.3~~ **301** **GOOD COMBUSTION PRACTICES FOR TURBINES:** ~~An~~ During steady state operations, an owner or operator of any stationary gas turbine listed in ~~subsection 102.2~~ Section 102.2 of this rule, regardless of fuel type, shall use operational practices recommended by the manufacturer and parametric monitoring to ensure good combustion control as listed below. One of the following procedures may be used. For the purposes of this rule, if a CEMS or another approved monitoring method is used, good combustion practices for turbines are considered to have been met.

~~a.~~ **301.1** Monitor the maximum temperature differentialacross thecombustion burnerso r 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 across the burners to demonstrate good combustion practices shall be measured from at least one minute data point during a complete steady state operating hour. If a valid maximum 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; or

~~b.~~ **301.2** If the manufacturer recommends that the maximum numerical temperature differential to ensure good combustion is a temperature that is greater than 100°F, then proof of this maximum alternate temperature shall be submitted to the Control Officer. The procedure to measure the maximum temperature differential

listed ~~above~~ in ~~subsection 301.3a~~ Section 301.1 of this rule shall then be followed using this alternaterecommende d maximum temperaturedifferential after approval by the Control Officer.

~~c.~~ **301.3** If the frequency of failure to meet the proper temperature differential of 100°F or to meet the alternate temperature differentialrecommende d by the manufacturer reflects a pattern that the turbine is not being operated in a manner consistent with good combustion practices, then the Control Officer mayrequire the owner or operator to submit a Corrective Action Plan (CAP).

~~301.4~~ **302** **COOLING TOWERS:** An owner or operator of a cooling tower associated with applicable units listed in Section 102 of this rule shall:

a. **302.1** Equip the cooling tower with a drift eliminator. The drift eliminator shall not be manufactured out of wood.

b. **302.2** The concentration of Total Dissolved Solids (TDS) multiplied by the percentage of drift rate shall not exceed the maximum numerical limit of 20.

c. **302.3** Visually inspect the drift eliminator on a monthly basis only if the drift eliminator can be viewed safely and does not require an owner or operator to walk into the tower. If the drift eliminator cannot be safely inspected monthly then ~~subsection 301.4d~~ Section 302.4 of this rule shall apply:

d. **302.4** Visually inspect the drift eliminator for integrity during a regularly scheduled outage when the cooling tower is not operating, if it cannot be inspected on a monthly basis. This visual inspection shall be no less than once per year.

~~302~~ **303** **LIMITATIONS – OPACITY:**

~~302.1~~ **303.1** ~~No person shall~~ 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, except as provided in ~~subsection 302.2~~ Section 303.2 of this rule.

~~302.2~~ **303.2** Opacity may exceed the applicable limits established in ~~subsection 302.1~~ Section 303.1 of this rule for up to one hour during the startup ~~of~~ or switching fuels; however, opacity shall not exceed 40% for any six (6) minute averaging period in this one hour period, 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. The one hour period shall begin at the moment of startup of fuel switching.

~~302.3~~ **303.3** 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.

~~303~~ **304** **LIMITATIONS - SULFUR IN FUEL:** An owner or operator of any applicable equipment listed in Section 102 of this rule that burns fuel oil alone or in combination with any other fuel as either emergency fuel or non-emergency fuel ~~that meets the standards in subsection 301.1~~ shall use only low sulfur oil.

~~304~~ **305** **LIMITATIONS – NITROGEN OXIDES (NO_x):** ~~No~~ An owner or operator of any applicable equipment listed in ~~subsection 102.1~~ Section 102.1 and 102.2 of this rule ~~that commenced construction or a major modification after May 30, 1972~~ shall not cause to be discharged into the atmosphere nitrogen oxides in excess of the following limits:

~~304.1~~ **305.1** ~~155 ppmv~~ 42 ppmdv,calculate d asnitrogendioxidewhen burning gaseous fossilfuel. During steady stateoperations, thistes t result usingEPA Reference Method(s)7 or other EPA-approved test method designated bytheControlOffice r shall be based upon the arithmetic meanof theresultsof three test runs.Each test run shall have a minimum sampletimeofonehour.IfaContinuousEmission Monitoring System (CEMS) is used for thecompliancedemonstration,thetes t result compliance demonstration shall be based upona30-da y rollingaverage. Any source for whichthe owner or operator submitstothedepartmen t acase- by-casereasonabl y available control technology analysistha t iso r will be incorporated ina permit issued by t h e Control Officer for that source, isexemp t from Sections305 and 307.4 of thisrule.

~~304.2~~ **305.2** ~~230 ppmv~~ 65 ppmdvcalculate d asnitrogendioxidewhen burning liquid fossilfuel. During steady stateoperations, thistes t result usingEPA Reference Method(s)7 or

other EPA-approved test method designated by the Control Officer , shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour. If a CEMS is used for the compliance demonstration, the ~~test result~~ compliance demonstration shall be based upon a 30-day rolling average. Any source for which the owner or operator submits to the department a case-by-case reasonably available control technology analysis that is or will be incorporated in a permit issued by the Control Officer for that source, is exempt from Sections 305 and 307.4 of this rule.

~~304.3~~ **305.3** The nitrogen oxides concentration shall be measured dry and corrected to 3% oxygen for electric utility steam generating units and cogeneration steam generating units. The nitrogen oxides concentration shall be measured dry and corrected to 15% oxygen for stationary gas turbines and for combined cycle gas turbines.

~~305~~ **306** **LIMITATIONS - CARBON MONOXIDE:** An owner or operator of any equipment listed in Section 102 of this rule shall not cause to be discharged into the atmosphere carbon monoxide (CO) measured in excess of 400 ppmv at any time. ~~This~~ During steady state operations, this test result, using EPA Reference Method 10 or other EPA-approved test method designated by the Control Officer and performed during steady state compliance source testing, shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour. The CO concentration shall be measured dry and corrected to 3% oxygen for electric utility steam generating units, ~~and~~ cogeneration steam generating units, and combined cycle gas turbines. The CO concentration shall be measured dry and corrected to 15% oxygen for stationary gas turbines, during steady state operations.

~~306~~ **307** **REQUIREMENTS FOR ~~AIR POLLUTION CONTROL EQUIPMENT AND~~ ECS MONITORING EQUIPMENT:**

~~306.1~~ **307.1** ~~Emission Control System Required:~~ For affected operations which may exceed any of the applicable standards set forth in Section 300 of this rule, an owner or operator may comply by installing and operating an emission control system (ECS) or another approved combustion control system.

~~306.2~~ **307.2** ~~Providing and Maintaining ECS Monitoring Devices: No~~ An owner or operator required to use an approved ECS pursuant to this rule shall not do so without first 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 Operation and Maintenance (O&M) Plan.

~~306.3~~ **307.3** **Operation and Maintenance (O&M) Plan Required for ECS:**

a. **General Requirements:** An owner or operator shall provide and maintain an O&M Plan 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 permit.

b. **Approval by Control Officer:** An 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. **Initial Plans:** An owner or operator ~~that~~ who is required to have an O&M Plan pursuant to this rule shall comply with all O&M Plans that the owner or operator has submitted for approval, but which have not yet been approved, unless notified by the Control Officer in writing. Once the initial plan has been approved in writing by the Control Officer, an owner or operator shall then comply with the approved plan.

d. **Revisions to Plan:** ~~If revisions to the initial plan have been approved by the Control Officer in writing, an owner or operator shall comply with the revisions to the initial plan. If revisions to the plan have not yet been approved by the Control Officer, then an~~An owner or operator ~~shall comply with the newest recent~~ may revise an initial O&M plan by submitting written revisions to the Control Officer ~~on file at Maricopa County Air Quality Department~~. The owner or operator shall at all times comply with the latest version of the O&M Plan submitted to the Control Officer.

e. **Control Officer Modifications to Plan**: After discussion with the owner or operator, the Control Officer may modify the plan in writing prior to approval of the initial O&M plan. An owner or operator shall then comply with the plan that has been modified by the Control Officer.

~~306.4~~ **307.4** ~~Continuous Emission Monitoring Systems (CEMS)~~ **Emission Compliance Demonstration:**

a. An owner or operator of ~~a combustion unit~~ an electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power subject to Section ~~304~~ 305 of this rule with a heat input of greater than 250 MMBtu/hr, regardless of fuel type, shall install, calibrate, maintain, and operate a CEMS, PEMS, LME, or conduct stack tests as approved by the Control Officer for measuring nitrogen oxides. ~~and recording the output of the system.~~ Where nitrogen oxide emissions are monitored by a CEMS, then a CEMS shall also be required for the measurement of the oxygen content of the flue gases. All CEMS shall comply with the provisions in ~~40 CFR Subpart Da, Part 60, 60.47 (a)~~ 40 CFR Part 60.

b. An owner or operator of any affected ~~unit~~ electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power listed above that requires a CEMS for nitrogen oxides that meets and is continuing to meet the requirements of 40 CFR Part 75 or Part 60 may use that CEMS or other monitoring system approved by the Control Officer to meet the requirements of ~~subsection 306.4 a~~ Section 307.4(a) of this rule.

~~307~~ **308** **EMERGENCY FUEL USE NOTIFICATION:** An owner or operator of ~~a unit~~ 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 ~~subsections 104.2 and 212~~ 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.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS ~~(NOT APPLICABLE)~~

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 [date of rule adoption] in compliance with the emission limits in Section 305 of this rule shall submit a Notification of Compliance [date within 6 months of rule adoption]. This Notification shall indicate how compliance with the NO_x limits has been determined and if performance testing is required to demonstrate compliance. If performance testing is required to demonstrate compliance, the Notification shall include a timeline for the test. Performance test results from a past test may be used for this determination, as long as the test was conducted within 5 years before [date of rule adoption].

402 **IN EXISTENCE AND NON-COMPLIANT:**

When air pollution control equipment is required to achieve the emission limits in Section 305 of this rule, the owner or operator shall comply with the increments of progress in Section 402.2 of this rule and be in compliance with the emission limits by the date specified in Section 402.2 of this rule. Interim compliance with the emission limits in Sections 305 of this rule does not exclude the owner or operator from final compliance with the emission limits in Section 305 of this rule and the increments of progress in Section 402.2 of this rule.

Increments of Progress: 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 subject to the emission limits in Section 305 of this rule shall comply with the following increments of progress. The Control Officer, upon the request of the owner or operator, may extend the increments of progress. The following compliance schedule does not apply to units already compliant with this rule as of [date of rule adoption]:

a. Within 18 months of becoming subject to the emission limits in Section 305 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 305 of this rule and submit to the Control Officer a complete source test report indicating compliance.

Removal From Service: 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 [date of rule adoption] that is

expected to be removed from service within 24 months of [date of rule adoption] shall be exempt from the emission limits in Section 305 of this rule if it complies with the following:

a. Within 6 months of [date of rule adoption], submit to the Control Officer a notification requesting an exemption from the emission limits in Section 305 of this rule.

b. Within 14 months of receiving the exemption, 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, 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. Operation of any electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power beyond 3 months of decommissioning plan and permit revision approval, shall be conducted in compliance with the emission limits in Section 305 of this rule.

403 **EMERGENCY STANDBY UNITS:** 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 prior to [date of rule adoption] shall, [within 2 months of rule adoption], submit to the Control Officer a notification requesting an exemption from the requirements of Section 300 of this rule.

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 or his designee upon request. Records shall consist of the following information:

Equipment Listed In Section 102 of this Rule: Type of fuel used, amount of fuel used, amount of sulfur in the fuel if using liquid fuel, and the days and hours of operation.

Cooling Towers: Monthly gravimetric testing reports for TDS 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.

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 subsections 104.2 and 104.3 Sections 104.2 and 104.3 of this rule.

Fuel Switching: Monthly records of fuel switching including stop and start times, monthly records of hours of operation for testing, reliability and maintenance purposes per subsection 104.3 Section 104.3 of this rule, and a yearly log total of these hours.

~~CEMS~~ **Continuous Emission Monitoring Systems:** All CEMS, PEMS, or LME measurements, results of CEMS, PEMS, or LME performance evaluations, CEMS, PEMS, or LME calibration checks, and adjustments and maintenance performed on these systems.

Good Combustion Practices: Measurements of the temperature differential across the burners of turbines per ~~subsection 301. 3 a, b, or c~~ Section 301 of this rule, results of evaluation and of corrective action taken to reduce the temperature differential or a finding that the temperature differential returned to the range listed in ~~subsection 301.3 a or b~~ Sections 301.1 or 301.2 of this rule without any action by the owner or operator. For the purposes of this rule, if a CEMS or other approved monitoring method is used, good combustion practices for turbines are considered to have been met.

Equipment Referenced In Sections 104.4, 305.1, and 305.2: Maintain records covering a 12-month rolling period to demonstrate compliance with Sections 104.4, 305.1, or 305.2, 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 DETERMINATION:

Low Sulfur Oil Verification:

a. An owner or operator shall submit fuel oil or liquid fuel receipts from the fuel supplier indicating the sulfur content of the fuel or verification that the oil used to generate electric power meets the 0.05% sulfur limit if requested by the Control Officer; or

b. If fuel receipts are not available then an owner or operator shall submit a statement of certification or proof of the sulfur content of the oil or liquid fuel from the supplier to the Control Officer; or

c. An owner or operator may elect to test the fuel for sulfur content in lieu of certification from the fuel supplier or fuel receipts using one of the test methods listed in ~~subsections 504.11, 504.12, 504.13 or 504.14~~ Sections 504.11, 504.12, 504.13, or 504.14 of this rule.

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.

504 COMPLIANCE DETERMINATION-TEST METHODS INCORPORATED BY REFERENCE: The following test methods, as applicable, shall be used to determine compliance with this rule. Alternative test methods may be utilized upon written approval from the Control Officer. The EPA test methods as they exist in the Code of Federal Regulations (CFR) ~~(July 1, 2004)~~, as listed below, are incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department, 1001 N. Central Avenue, Suite ~~595~~125, Phoenix, AZ 85004-1942. The Standard Methods ~~l~~isted below (1995) are also incorporated by reference. When more than one test method as listed in ~~subsections 504.11 through 504.~~14 Sections 504.11 through 504.14 of this rule is permitted for ~~the same~~ a determination, an exceedance of the limits established in this rule determined by any of the applicable test methods ~~constitutes~~ shall constitute a violation.

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).

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 of 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 ("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"), 7A ("Determination of Nitrogen Oxide Emissions from Stationary Sources"), 7B ("Determination of Nitrogen Oxide Emissions from Stationary Sources - Ultraviolet Spectrometry"), 7C ("Determination of Nitrogen Oxide Emissions from Stationary Sources - Alkaline-Permanganate 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 Method") (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 ReferenceMethod 10 ("Determinationof Carbon Monoxide Emissionsfro m Stationary Sources") (40 CFR 60, Appendix A).

504.10 EPA ReferenceMethod 20 ("Determination of NitrogenOxides, Sulfur Dioxide and Diluent Emissions from StationaryGas Turbines") (40 CFR 60, Appendix A).

504.11 American Societyof TestingMaterials, ASTM Method D2622-98, ("Standard Test Method for Sulfur in Petroleum Products byWavelengthDisperse X-Ray FluorescenceSpectrometry"),1998.

~~504.12~~ ~~American Societyof Testing Materials, ASTMMetho d D1266-98, ("Standard Test Method for Sulfur in Petroleum Products - Lamp Method"), 1998.~~

~~504.13~~ **504.12** American Societyof TestingMaterials, ASTMMetho d D2880-00, ("Standard Specification for Gas Turbine Fuel Oils"), 2000.

504.14 American Societyof Testing Materials, ASTM Method D4294-90 or 98 ("Standard Test Method for Sulfur in Petroleum Products by E n e rg-Dispersive X-Ray FluorescenceSpectrometry"), 1990o r 1998.

504.15 Standard Methods for the Examination of Water and Wastewater,("Dissolved Solids Dried at 180°C, Method #2540C"), American Public Health Association, 19th edition, 1995.

NOTICE OF PROPOSED RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 323: FUEL BURNING EQUIPMENT FROM INDUSTRIAL/COMMERCIAL/INSTITUTIONAL (ICI) SOURCES
PREAMBLE

1. **Rule affected** — **Rulemaking action**

Rule 323: Fuel Burning Equipment from Industrial/Commercial/ Institutional (ICI) Sources — Amend

2. **Statutory authority for the rulemaking:**

Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. **List of public notices addressing the rulemaking:**

Notice of Briefing to Maricopa County Manager: May 2015
Notice of Stakeholder Workshops: June 29, 2015, September 3, 2015, and February 18, 2016

4. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name: Johanna M. Kuspert or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, Arizona 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

5. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary:

Rule 323 (Fuel Burning Equipment from Industrial/Commercial/Institutional(ICI) Sources) limits the discharge of nitrogen oxides (NO_x), sulfur oxides, particulate matter and carbon monoxide emissions into the atmosphere from fuel burning combustion equipment at industrial, commercial, and institutional (ICI) sources. Revisions to Rule 323 are being proposed to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The proposed amendments in Rule 323 include Reasonably Available Control Technology (RACT) for NO_x.

In addition, the proposed amendments correct typographical or other clerical errors; make minor grammatical changes to improve readability or clarity; modify the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or make various other minor changes of a purely editorial nature. As these

changes do not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 14 of this notice.

Issues Raised and Discussed During This Rulemaking Process:

Stakeholders expressed a general understanding for the need for rule revisions based on the department's nonattainment status; however, Stakeholders were concerned about the emission limitations and what is considered "RACT" and what is considered "beyond RACT". In addition, questions were raised regarding the following:

- Partial exemptions, particularly regarding stationary gas turbines
- Provisions for good combustion practices
- Source testing methods and frequency

Description of Proposed Amendments:

Regarding Exemptions:

- Section 104.1(c) (Partial Exemptions): Rule 323 is proposed to be revised to clarify the partial exemption for military training facilities. The EPA commented that the term "military training facility" is unclear in this rule, especially as distinguished from other facilities such as "garrisons". The EPA suggested that this exemption should focus on the specific types of activities at these facilities that reasonably require exemptions, rather than the facilities themselves. The EPA suggested using Imperial County Air Pollution Control District, Rule 800, Section E(6) (General Requirements for Control of Fine Particulate Matter (PM_{10})) as an example. The text proposed in Section 104.1(c) is from Imperial County Air Pollution Control District, Rule 800, Section E(6) (General Requirements for Control of Fine Particulate Matter (PM_{10})).
- Sections 104.1(f) and 104.2 (Partial Exemptions): Rule 323 is proposed to be revised to include source specific limitations on emergency fuel use that is or will be incorporated in a source permit. The EPA commented that engines and fuel use allow alternative emission limits from normal operating conditions; this is generally allowable but must also include appropriate limits on the length of the emergency condition and alternative emergency emission limits. EPA asked that the department revise this section.

Regarding Limitations:

- Section 301.1 (Good Combustion Practices for Turbines): Rule 323 is proposed to include text regarding the frequency of monitoring temperature differential across the combustion burners. The EPA commented that the frequency of differential temperature measurement should be defined and that continuous monitoring of this differential should be required.
- Section 303 (Limitations-Sulfur in Fuel): The limitations for sulfur in fuel are proposed to be changed from "low sulfur fuel" to "ultra low sulfur diesel"; consistent with federal standards.
- Section 304.1(b)(1) (Limitations-Nitrogen Oxides): The NO_x limitation when burning gaseous fossil fuel is proposed to be changed from "155 ppm" to "42 ppmdv". The U.S. Environmental Protection Agency (EPA) advised the department that this limitation is considered RACT for NO_x; this limitation is similar to limits in Imperial County's (CA) RACT SIP for the 1997 ozone standard for turbines (Rule 400.1 adopted 2010).
- Section 304.1(b)(2) (Limitations-Nitrogen Oxides): The NO_x limitation when burning liquid fossil fuel is proposed to be changed from "230 ppm" to "65 ppmdv". The EPA advised the department that this limitation is considered RACT for NO_x; this limitation is similar to limits in Imperial County's (CA) RACT SIP for the 1997 ozone standard for turbines (Rule 400.1 adopted 2010).

Regarding Compliance with Nitrogen Oxides Limitations:

- Section 304.1 (Limitations-Nitrogen Oxides): Rule 323 is proposed to clarify which provisions a source must comply with in order to be in compliance with the NO_x limitations. A source can either tune equipment annually in accordance with good combustion practices or follow the manufacturer's recommended procedure or a source can limit NO_x emission to no more than 42 ppmdv when burning gaseous fuel or to no more than 65 ppmdv when burning liquid fuel.

Regarding Administrative Requirements:

- Section 401 (Compliance Schedule): Rule 323 is proposed to include compliance schedules for filing an Operation & Maintenance (O&M) Plan, for filing a schedule for making modifications to existing Emission Control Systems (ECS), and for filing a schedule for installing an ECS.

Regarding Compliance Determinations:

- Section 503.1 (Compliance Determination-Ultra Low Sulfur Diesel Verification): The compliance determination for low sulfur oil verification is proposed to be changed to a compliance determination for ultra low sulfur diesel verification consistent with federal standards. Due to the EPA's comments, additional language was added to clarify that sulfur content verification documents must provide accurate values and utilize enforceable test methods to determine the sulfur content. Also, the test method for determining sulfur content of waste gas is proposed to be added in Sections 503.1(b) and 504.15 (Compliance Determination-Test Methods Incorporated by Reference).
- Sections 503.2 (Compliance Determination-Gaseous Emissions-Source Test) and 503.3 (Compliance Determination-Gaseous Emissions-Continuous Emission Monitoring System (CEMS)): The text proposed in Sections 503.2 and 503.3 is from Sacramento Metropolitan Air Quality Management District Rule 411 (NO_x from Boilers, Process Heaters and Steam Generators). The EPA advised the department that, when updating Rule 323 to include RACT, the department should consider other agencies' rules. Proposed text for Sections 503.2(c) and (d) regarding test runs and test protocols have been removed, per the EPA's comments that this language would allow Control Officer discretion on testing operations that may lead to poor operating data. Proposed text for Sections 503.2(a) and 503.3 regarding compliance determinations during startup and shutdown have been removed ("All emissions determinations shall be made during normal operating conditions, except no compliance determination shall be established during unit startup and shutdown"), due to the EPA's comments that this language does not align with the EPA's startup, shutdown, and malfunction policy.
- Sections 503.2(c) and (d) (Compliance Determination-Gaseous Emissions-Source Test): The text proposed in Sections 503.2(c) and (d) is proposed to be deleted; the text is from Sacramento Metropolitan Air Quality Management District Rule 411 (NO_x from Boilers, Process Heaters and Steam Generators) and regards procedures in the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued and states that a source test reports may be determined to be invalid. The EPA commented that this would allow Control Officer discretion on testing operations that may lead to poor operating data and recommended removing these provisions.
- Section 504 (Compliance Determination-Test Methods Incorporated by Reference): Rule 323 is proposed to include a provision that allows for the use of alternative test methods to determine compliance with the rule and to clarify the provision regarding when more than one test method is permitted for a compliance determination.
- Section 504.12 (Compliance Determination-Test Methods Incorporated by Reference): The test method "American Society of Testing Materials, ASTM Method D1266-98, ("Standard Test Method for Sulfur in Petroleum Products - Lamp Method"), 1998" is proposed to be deleted. The EPA commented that the test method may not be appropriate; its range is 0.01-0.4% which will not be able to verify compliance with the definition of ultra low sulfur diesel fuel at <0.0015%.

6. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
   - **(a)** Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
   - **(b)** Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)
When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.
The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. While currently classified as a "marginal" ozone nonattainment area, the county recently failed to meet 2008 8-hour ozone standard by the marginal area attainment date and anticipates EPA will issue a notice proposing to re-classify the area to "moderate". Further, a portion of the county was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the county to continue to maintain the measures and requirements that allowed the county to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM_{10} 24-hour standard. This is the only serious PM_{10} nonattainment area in Arizona. Revisions to Rule 323 are being proposed to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The proposed amendments in Rule 323 include Reasonably Available Control Technology (RACT) for NO_x.
The department complies with A.R.S. § 49-112(B) in that the proposed amendments to Rule 323 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49, address the peculiar local conditions in Maricopa County, are authorized under A.R.S. Title 49, Chapter 3, Article 3, and are not in lieu of a state program.

7. **Documents and/or studies referenced and/or reviewed for this rulemaking:**
Not applicable

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

9. **Preliminary summary of the economic, small business, and consumer impact:**
The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

An identification of the rulemaking.
This rulemaking is proposing to revise Rule 323 (Fuel Burning from Industrial, Commercial, and Institutional (ICI) Sources).

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.
The persons who will be directly affected by and bear the costs of this rulemaking will be facilities in Maricopa County that use ICI sources that burn either fossil fuels or alternative fuels where the sources include any of the following:

- Steam generating unit with a maximum design rated heat input capacity from fuels combusted in the unit of greater than 10 million BTU/hr;
- Stationary gas turbines with a heat input at peak load equal to or greater than 2.9 megawatts (MW);
- Cogeneration steam generating unit with a heat input of greater than 10 million Btu/hr;
- Indirect-fired process heater with a heat input greater than 10 million Btu/hr.

The department has issued permits to more than 130 facilities with sources applicable to Rule 323.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**

It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

The assumptions of savings with the rule revisions will be reviewed after rule implementation to confirm their effectiveness. However, the benefits of the rule revision are anticipated to be a result of the following changes:

- Applying limitations for fuel sulfur content to ultra low sulfur diesel (from "low sulfur fuel") to be consistent with federal requirements;
- Changing NO_x limitations when burning gaseous fossil fuel from 155 ppm to 42 ppmdv, and when burning liquid gaseous fossil fuel from 230 ppm to 65 ppmdv to be consistent with federal requirements and what EPA considers to be RACT for NO_x.
- Clarifying compliance requirements that apply to a source in order to meet the NO_x limitations;
- Adding requirements for schedules pertaining to filing an Operation & Maintenance Plan (O&M) Plan, and when modifying or installing a new Emission Control System (ECS); and
- Clarifying compliance determination test methods that apply for determining fuel sulfur content, NO_x (and CO) emissions for boilers with a heat input capacity of 100 MMBtu per hour or greater, and methods for boilers equipped with continuous emission monitoring system (CEMS).

These revisions align Maricopa County requirements with existing federal performance standards. In addition, the sources subject to the revised Rule 323 already have permits in which these requirements are addressed. Therefore, this revised rule does not impose new requirements on the subject facilities, and no costs would be incurred for compliance with the rule revisions.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity provided by the Rule 323 revisions will provide a benefit to the regulated community; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision will not impose increased monetary or regulatory costs on individuals so regulated.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions will not impose increased monetary or regulatory costs on any business, persons, or individuals so regulated.

(a) **An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County that use ICI sources that burn either fossil fuels or alternative fuels where the sources include any of the following: a steam generating unit with a maximum design rated heat input capacity from fuels combusted in the unit of greater than 10 million BTU/hr; a stationary gas turbine with a heat input at peak load equal to or greater than 2.9 megawatts (MW); a cogeneration steam generating unit with a heat input of greater than 10 million Btu/hr; and, an indirect-fired process heater with a heat input greater than 10 million Btu/hr.

(b) **The administrative and other costs required for compliance with the rulemaking.**

This rulemaking updates and clarifies existing rule provisions and definitions to be consistent with federal performance standards, and to reduce confusion and improve

understanding and readability. The department considered the implications of the proposed amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**
By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**
This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**
This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**
This rulemaking does not impose any new compliance burdens on regulated entities or introduce additional regulatory requirements and will not impose increased monetary or regulatory costs on any business, persons, or individuals so regulated. As such, there are no costs to pass through to consumers which means there are no impacts on consumers.

A statement of the probable effect on state revenues.
The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.
This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

10. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name:	Johanna M. Kuspert or Hether Krause
	Maricopa County Air Quality Department
	Planning and Analysis Division
Address:	1001 N Central Avenue, Suite 125
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11. **Time, place, and nature of the proceedings for the rulemaking:**
Written oral proceeding requests or written comments or both will be accepted until the record is closed on June 13, 2016, 5:00 p.m. Written oral proceeding requests or written comments or both may be mailed, e-mailed, or hand delivered to the department (see Item #4 of this notice). An oral proceeding will be scheduled only upon receipt of a written request before the record is closed on June 13, 2016, 5:00 p.m. Written comments received during the comment period and before the record is closed on June 13, 2016, 5:00 p.m. will be considered formal comments to the Notice of Proposed Rulemaking and will be responded to in the Notice of Final Rulemaking.

12. **Any other matters prescribed by statute that are applicable to the specific department or to any specific rule or class of rules:**
Not applicable

13. **Incorporations by reference and their location in the rule:**
The department incorporated by reference sections of the Code of Federal Regulations in Section 504 (Compliance Determination-Test Methods Incorporated by Reference)

14. **Full text of the rule follows:**

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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~~Adopted 07/03/05~~
~~Revised 10/17/07~~

Adopted 07/02/2003; Revised 10/17/2007; **Revised MM/DD/YYYY**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III-CONTROL OF AIR CONTAMINANTS
RULE 323
FUEL BURNING EQUIPMENT FROM INDUSTRIAL/COMMERCIAL/INSTITUTIONAL (ICI) SOURCES
~~INDEX~~

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 equipment at industrial and/or commercial and/or institutional (ICI) sources.

102 **APPLICABILITY:** This rule applies to any of the following types of ICI combustion equipment that burns either fossil fuels or alternative fuels:

102.1 Each steam generating unit that has a maximum design rated heat input capacity from fuels combusted in the generating unit of greater than 10 million (MM) Btu/hr (2.9 Megawatts (MW)).

102.2 Each stationary gas turbine with a heat input at peak load equal to or greater than 2.9 megawatts (MW).

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 equipment; 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 hot water for comfort or for radiant heat.

104 **PARTIAL EXEMPTIONS:**

104.1 Stationary gas turbines listed in ~~subsection 102.2~~ Section 102.2 of this rule that are used for any of the following reasons shall be exempt from ~~Sections 304, 305 and subsections 301.1, 301.2, 501.1 and 501.3~~ Sections 301.1, 301.2, 304, 305, 501.1, and 501.3 of this rule:

a. Used for firefighting; or

b. Used for flood control; or

c. Used ~~at military training facilities other than a garrison facility; or i~~n the following military training activities conducted by the Department of Defense: (1) military tactical training or (2) maintenance, repair, and removal of targets and munitions associated with military tactical training; or

d. Engaged by manufacturers in research and the development of equipment for either gas turbine emission control techniques or gas turbine efficiency improvements; or

e. Fired with emergency fuel that is normally fired with natural gas, or

f. ~~Testing, reliability, maintenance, training, and readiness purposes for a total of 36 hours per year per unit when firing any emergency fuel.~~ Fired with emergency fuel for 36 cumulative hours per year or less, per unit for testing, reliability, training, and maintenance purposes and that are or will be incorporated in a permit issued by the Control Officer for that source.

104.2 All steam generating units including cogeneration units and process heaters that are used for any of the following reasons and that are or will be incorporated in a permit issued by the Control Officer for that source shall be exempt from Sections 301, 304, 305, ~~and subsections~~ 501.1 and 501.3 of this rule:

a. Fired with an emergency fuel that is normally fired with natural gas; or

b. Firing any emergency fuel for testing, reliability, and maintenance purposes ~~up to a maximum total of 36 hrs.per unit per year.~~ for 36 cumulative hours per year, per unit or less.

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.~~ 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 traditionaloil-derive d and fossil-fuel derived motor vehicle fuels including but not limited to biodiesel, propane, ethanol or methanol.

202 **COGENERATION STEAM GENERATING UNIT:** A steam or hot water generating unit that simultaneously produces both electrical (or mechanical) and thermal energy (such as heat or steam) from the same primary energy source.

203 **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.

204 **DISTILLATE OIL:** A petroleum fraction of fuel oil produced by distillation that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-01, "Standard Specification for Fuel Oils."

205 **EMERGENCY FUEL:** Fuel fired by a gas combustion unit, normally fueled by natural gas, only during circumstances of unforeseen disruption or interruption in the supply of natural gas to a unit that normally runs on natural gas. The inability to burn natural gas may be one of the following, but is not limited to, natural gas emergency, natural gas curtailment, or a breakdown of the delivery system.

206 **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.

207 **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.

208 **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.

~~209~~ ~~LOW SULFUR OIL: Fuel oil containing less than or equal to 0.05 % by weight of sulfur.~~

~~210~~ **209** **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.

~~211~~ **210** **OPACITY:** A condition of the ambient air, or any part thereof, in which an air contaminant partially or wholly obscures the viewof an observer.

~~212~~ **211** **PARTICULATE MATTER EMISSIONS:** Any and all particulate matter emitted to the ambient air as measured by applicable state and federal test methods.

~~213~~ **212** **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).

~~214~~ **213** **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.

~~215~~ **214** **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 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.

~~216~~ **215** **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 combustor unit.

~~217~~ **216** **RESIDUAL OIL:** The heavier oils that remain after the distillate oils and lighter hydrocarbons are distilled off in refinery operations. This includes crude oil or fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05% by weight, and all fuel oil

numbers 4, 5 and 6, as defined by the American Society of Testing and Materials in ASTM D396-01, "Standard Specifications for FuelOils".

~~218~~ **217** **SIMPLE CYCLE GAS TURBINE:** Any stationary gasturbine that does not recover heat from the gas turbine exhaust gases to preheat the inlet combustion air to the gas turbine, or that does not recover heat from the gas turbine exhaust gases to heat water or generate steam.

~~219~~ **218** **STATIONARY GAS TURBINE:** Anysimplecycle gasturbineo r regenerative gas turbine that is not self-propelled or that is attached to a foundation.

~~220~~ **219** **STEAM GENERATING UNIT:** An external combustion unit or boiler fired by fossil fuel that is used to generate hot water or steam. The hot water or steam is then used as energy for driving another processo r piece of equipment.

~~221~~ **220** **SULFUR OXIDES (SO_x):** The sum of the oxides of sulfur emitted from the flue gas from a combustion unit that are directlydependen t upon the amount of sulfur in the fuel used.

221 **ULTRA LOW SULFUR DIESEL:** Fueloilcontaininglessthano r equal to 0.0015 %sulfu r by weight.

222 **UNCOMBINED WATER:** Condensed water containingno morethan analytical trace amounts of other chemical elements or compounds.

223 **WASTE DERIVED FUEL GAS:** Any gaseous fuel that is generated from the biodegradation of solid or liquid waste including but not limited to, sewage sludge, digester gas, and landfill gas.

224 **WATER HEATER:** A closed vessel in which water is heated bycombustion 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 as opposed to boilers, do not reach temperatures of 220°F and higher that boilers can reach, and are not manufactured to meet boiler codes.

SECTION 300 – STANDARDS

301 LIMITATIONS – PARTICULATE MATTER:

301.1 **Limitation-Liquid Fuels:** An owner or operator 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 lbs. per MMBtu from any combustion units listed in ~~subsections 102.1, 102.3 and 102.4~~ Sections 102.1, 102.3, and 102.4 of this rule with either a rated heat input capacity or heat input of greater than 100 MM Btu/hr.

301.2 **Particulate Matter Testing:** A backhalf analysis shall be performed, using Reference Method 202 referenced in ~~subsection 504.6~~ Section 504.6 of this rule, each time a compliance test for particulate matter emissions to meet the standards in ~~subsection 301.1~~ Section 301.1 of this rule is performed using Method 5. (The results of the Method 202 testing shall be used for emissions inventory purposes).

301.3 **Good Combustion Practices for Turbines:** An owner or operator of a stationary gas turbine listed in ~~subsection 102.2~~ Section 102.2 of this rule, regardless of fuel type or size, shall use operational practices recommended by the manufacturer and parametric monitoring that ensure good combustion control. One of the following procedures may be used:

a. 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 across the burners to demonstrate good combustion practices shall be measured from at least one minute data point during a complete steady state operating hour. If a valid maximum 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; or

b. If the manufacturer recommends that the maximum numerical temperature differential to ensure good combustion is a temperature that is greater than 100°F, then proof of this maximum alternate temperature shall be submitted to the Control Officer. The procedure to measure the maximum temperature differential listed above in ~~subsection 301.3a~~ Section 301.3(a) of this rule shall then be followed using the alternate recommended maximum temperature differential after approval by the Control Officer.

c. If a repetitive pattern of failure to meet the proper temperature differential of 100°F or to meet the alternate temperature differential recommended by the

manufacturer indicates that the turbine is not being operated in a manner consistent with good combustion practices, then the Control Officer may require the owner or operator to submit a Corrective Action Plan (CAP).

302 LIMITATIONS – OPACITY: ~~No~~ 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 applicable equipment listed in Section 102 of this rule that burns liquid fuel oil or a mixture or blend of fuel oil with any other fuels shall use only ~~low sulfur oil~~ ultra low sulfur diesel. An owner or operator using waste derived fuel gas shall use only waste derived fuel gas ~~with a sulfur content less than or equal to 800 ppm (0.08%).~~ that contains no more than 0.08% sulfur by weight, alone or in combination with other fuels.

304 LIMITATIONS – NITROGEN OXIDES:

304.1 An owner or operator of any combustion equipment listed in Section 102 of this rule, except gas turbines, with a heat input of greater than 10 MMBtu/hr to 100 MMBtu/hr~~, except gas turbines,~~ shall comply either with ~~(a) or (b) below~~ Sections 304.1(a) or 304.1(b) of this rule. Gas turbines are subject to both Sections 304.1(a) and 304.1(b) of this rule below:

a. Establish initial optimal baseline concentrations for NO_x and CO within 90 days of the first usage of the combustion equipment utilizing the initial design burner specifications or manufacturer's recommendations to ensure good combustion practices. Tune the unit annually in accordance with good combustion practices or ~~a~~ follow the manufacturer's recommended procedure, if applicable. ~~, that will include the following at a minimum:~~ If using good combustion practices, the owner or operator shall include the following at a minimum:

(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) Measure the NO_x and the CO concentration of the effluent stream after each adjustment was made with a handheld portable monitor to ensure optimal baseline concentrations are maintained. ~~or~~

b. Limit nitrogen oxide emissions to no more than the following amounts:

(1) ~~155 ppm~~ 42 ppmdv calculated as nitrogen dioxide, when burning gaseous fuel. During steady state operations, this test result using EPA Reference Method(s) 7 shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample run time of one hour.

(2) ~~230 ppm~~ 65 ppmdv calculated as nitrogen dioxide, when burning liquid fuel. During steady state operations, this test result using EPA Reference Method(s) 7 shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample run time of one hour.

c. For simple gas turbines, the nitrogen oxides shall be measured dry and corrected to 15% oxygen. For all other combustion equipment, the nitrogen oxides shall be measured dry and corrected to 3% oxygen.

304.2 An owner or operator of any combustion equipment, listed in Section 102 of this rule, with a heat input greater than 100 MMBtu/hr, shall:

a. Tune the equipment every 6 months with good combustion practices or a manufacturer's procedure that at a minimum includes the procedures listed in ~~subsection 304.1a~~ Section 304.1(a) of this rule and;

b. Meet the NO_x emission limits as stated in ~~subsection 304.1b~~ Section 304.1(b) of this rule.

305 LIMITATIONS-CARBON MONOXIDE: ~~No~~ An owner or operator of any equipment listed in Section 102 of this rule 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 ppmv at any time. This test result, using EPA Reference Method 10, shall be based upon the

arithmetic mean of the results of three test runs and shall be measured during steady state compliance source testing. Each test run shall have a minimum sample time of one hour. For simple gas turbines, the CO shall be measured dry and corrected to 15% oxygen. For all other combustion equipment, the CO shall be measured dry and corrected to 3% oxygen.

306 REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND ECS MONITORING EQUIPMENT:

306.1 Emission Control System ~~Required~~**:** For affected operations which may exceed any of the applicable standards set forth in Sections 300 of this rule, an owner or operator may comply by installing and operating an emission control system (ECS).

306.2 Providing and Maintaining ECS Monitoring Devices: ~~No~~ An owner or operator required to use an approved ECS pursuant to this rule shall not 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 Operation and Maintenance (O&M) Plan.

306.3 ~~Operation and Maintenance (~~**O&M**~~)~~ **Plan Required for ECS:**

a. General Requirements: An owner or operator shall provide and maintain an O&M Plan for any ECS, any other emission processing equipment, and any ECS monitoring devices that are used pursuant to this rule or an air pollution permit.

b. Approval by Control Officer: An 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. Initial Plans: An owner or operator that is required to have an O&M Plan pursuant to this rule shall comply with all O&M Plans that the owner or operator has submitted for approval, but which have not yet been approved, unless notified by the Control Officer in writing. Once the initial plan has been approved in writing by the Control Officer, an owner or operator shall comply with this approved plan.

d. Revisions to Plan: If revisions to the initial plan have been approved by the Control Officer in writing, an owner or operator shall comply with the revisions to the initial plan. If revisions to the plan have not yet been approved by the Control Officer in writing, then an owner or operator shall comply with the most recent O&M plan on file at Maricopa County Air Quality Department.

e. Control Officer Modifications to Plan: After discussion with the owner or operator, the Control Officer may modify the plan in writing prior to approval of the initial O&M plan. An owner or operator shall then comply with the plan that has been modified by the Control Officer.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS ~~(NOT APPLICABLE)~~

401 COMPLIANCE SCHEDULE

O&M Plan: Any owner or operator employing an approved ECS on the effective date of this rule shall by [date 8 months after rule adoption] file an O&M Plan with the Control Officer in accordance with Section 306.3 of this rule.

Modifications to Existing ECS: Any owner or operator required to modify their ECS equipment or system by either reconstructing or adding on equipment for compliance with this rule shall by [date 8 months after rule adoption] file a schedule for the modification with the Control Officer. The plan shall show how the ECS is to be used to achieve full compliance and shall specify dates for completing increments of progress. Any and all ECS used to achieve such compliance shall be in operation by [date 24 months after rule adoption].

ECS Installation: An owner or operator required to install an ECS for compliance with this rule shall by [date 8 months after rule adoption] file a schedule for the installation with the Control Officer. The ECS shall then be installed and in compliance by [date 36 months after rule adoption].

SECTION 500 – MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING: An 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 or his designee upon request. Records shall consist of the following information:

Equipment Listed in Section 102 of this Rule: Type of fuel used, amount of fuel used, and amount of sulfur in the fuel if using liquid fuel, and the days and hours of operation.

Emergency Fuel Usage: Monthly records of: type of ~~e~~mergency fuel used, 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 ~~subsections 104.1 and 104.2~~ Sections 104.1 and 104.2. Yearly records of the twelve month log of hours of operation in the emergency mode.

Good Combustion Practice: Measurements of the temperature differential across the burners of turbines per ~~subsection 301.3~~ Section 301.3 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 ~~subsection 301.3 (a) or (b)~~ Sections 301.3(a) or 301.3(b) of this rule without any action by the owner or operator.

Tuning Procedure: Date that the procedure was performed on the particular 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 handheld monitor after each adjustment.

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 DETERMINATION:

~~Low Sulfur Oil~~ **Ultra Low Sulfur Diesel Verification:**

a. ~~An owner or operator shall submit fuel oil receipts from the fuel supplier indicating the sulfur content of the fuel oil or verification that the fuel oil used meets the 0.05% sulfur limit or the 0.08% limit for landfill or digester gas if requested by the Control Officer, or~~ If the Control Officer requests documentation of the sulfur content of the fuel oil to demonstrate the 0.0015% limits, the owner or operator shall submit one of the following:
   (1) Fuel receipts, or
   (2) Contract specifications, or
   (3) Pipeline meter tickets, or
   (4) Safety Data Sheets (SDS), or
   (5) Fuel supplier information, or
   (6) Purchase records, or
   (7) Testing of the fuel oil for sulfur content

   The items listed above must provide accurate sulfur content values and utilize enforceable test methods to determine the sulfur content.

b. ~~If fuel receipts are not available, an owner or operator shall submit a statement of certification or proof of the sulfur content of the fuel oil from the supplier to the Control Officer, or~~ The owner or operator shall submit documentation of the concentration of the sulfur level 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 307-94 Determination of Sulfur in a Gaseous Matrix.

~~c. An owner or operator may elect to test the fuel oil for sulfur content in lieu of certification from the fuel supplier or fuel receipts using one of the test methods incorporated by reference in subsections 504.11, 504.12, 504.14 or 504.15~~.

Gaseous Emissions-Source Test: Boilers with a heat input capacity of ~~10 MMBtu~~ 100 MMBtu per hour or greater, must conduct all applicable performance (stack) tests on a triennial basis. Triennial performance tests must be completed no more than 37 months after the previous performance test.

a. Compliance with the NO_x and CO emission requirements and the stack gas oxygen requirements of Sections 301 through 304 of this rule shall be determined using the test methods specified below. Tests shall be conducted while units are operating at a firing rate that is as close as physically possible to the unit's rated heat input capacity. Tests shall be conducted for three 60 minute runs. Results shall be averaged over the three test periods. Test reports shall include the operational characteristics of all flue-gas NO_x reduction equipment.
   (1) Oxide of Nitrogen - EPA Method 7E.
   (2) Carbon Monoxide - EPA Method 10.

(3) Stack Gas Oxygen - EPA Method 3A.
(4) Carbon Dioxide - EPA Method 3A.

b. A scheduled source test may not be discontinued solely due to the failure of one or more runs to meet applicable standards.

Gaseous Emissions-Continuous Emission Monitoring System (CEMS): Compliance with NO_x emission requirements specified in Sections 301 through 304 of this rule may also be determined using CEMS. Where the 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 unit is operated.

b. **Cycle Time:** An owner or operator of any 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 3 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. **Accuracy Testing:** Accuracy testing of CEMS shall be conducted using a relative accuracy test audit pursuant to 40 CFR 60, Appendix F.

504 ~~TEST METHODS ADOPTED BY REFERENCE~~ **COMPLIANCE DETERMINATION-TEST METHODS INCORPORATED BY REFERENCE:** The following test methods, as applicable, shall be used to determine compliance with this rule. Alternative test methods may be utilized upon written approval from the Control Officer. The EPA test methods as they exist in the Code of Federal Regulations (CFR) ~~(July 1, 2004)~~, as listed below, are incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department, 1001 N. Central Avenue, Phoenix, AZ 85004-1942. When more than one test method, as listed in ~~subsections 504.11, 504.12, 504.14, or 504.15~~ Sections 504.11, 504.12, 504.14, or 504.15 of this rule, is permitted for ~~the same~~ a determination, an exceedance of the limits established in this rule determined by any ~~one~~ of the applicable test methods ~~constitutes~~ shall constitute a violation of this rule.

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).

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).

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 of Excess Air"), and 3C ("Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources") (40 CFR 60, Appendix A).

EPA Reference Method 4 ("Determination of Moisture Content in Stack Gases") (40 CFR 60, Appendix A).

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

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

EPA Reference Methods 7 ("Determination of Nitrogen Oxide Emissions from Stationary Sources"), 7A ("Determination of Nitrogen Oxide Emissions form Stationary Sources"), 7B ("Determination of Nitrogen Oxide Emissions from

Stationary Sources – Ultraviolet Spectrometry"), 7C ("Determination of Nitrogen Oxide Emissions from StationarySources – Alkaline-Permanganate Colorimetric Method"), 7D ("Determinationof NitrogenOxide Emissions from Stationary Sources – Alkaline – PermanganateChromatographicMethod"), and 7E ("Determinationof Nitrogen OxideEmissions from Stationary Sources – Instrumental Analyzer Method"), (40 CFR60, Appendix A).

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

504.9 EPA ReferenceMethod 10, ("Determinationof Carbon Monoxide from Stationary Sources") (40 CFR60, Appendix A).

504.10 EPA ReferenceMethod 20, ("Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from StationaryGas Turbines") (40 CFR 60, Appendix A).

504.11 ~~American Societyof TestingMaterials,~~ ASTM Method ~~D2622-92 or~~ D2622-98, ~~("~~Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray FluorescenceSpectrometr y"~~),1992or1998.~~

~~504.12 American Societyof Testing Materials, ASTMMetho d D1266-98, ("Standard Test Method for Sulfur in Petroleum Products (Lamp Method)"), 1998.~~

~~504.13~~ **504.12** ~~American Societyof TestingMaterials,~~ ASTMMetho d ~~D2880-00~~ D2880-96, ~~("~~Standard Specification for Gas Turbine FuelOils"~~), 2000~~.

~~504.14~~ **504.13** ~~American Societyof Testing Materials,~~ ASTM Method ~~D4294-90 or 98~~ D4294-02 or D4294-03~~, ("~~Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-rayFluorescence Spectrometry"~~), 1990 or 1998~~.

~~504.15~~ **504.14** ~~American Societyof Testing Materials,~~ ASTMMetho d D5504-01 or D5504-08~~,("~~Standard Test Method for Determination of Sulfur compounds in Natural Gas and GaseousFuels byGasChromatograph y and Chemiluminescence"~~), 2006~~.

504.15 South Coast Air QualityManagemen t District Method 307-94 Determination of Sulfur in a Gaseous Matrix

NOTICE OF PROPOSED RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 324: STATIONARY INTERNAL COMBUSTION (IC) ENGINES
PREAMBLE

1. **Rule affected** **Rulemaking action**

Rule 324: Stationary Internal Combustion (IC) Engines — Amend

2. **Statutory authority for the rulemaking:**

Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. **List of public notices addressing the rulemaking:**

Notice of Briefing to Maricopa County Manager: May 2015
Notice of Stakeholder Workshops: August 3, 2015, November 19, 2015, and January 27, 2016

4. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name: Johanna M. Kuspert or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, Arizona 85004
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E-mail: aqplanning@mail.maricopa.gov

5. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary:

Rule 324 (Stationary Internal Combustion (IC) Engines) limits the discharge of carbon monoxide, nitrogen oxides (NO_x), sulfur oxides, volatile organic compounds (VOCs), and particulate matter emissions from stationary internal combustion (IC) engines. Revisions to Rule 324 are being proposed to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air

quality standard (NAAQS). Rule 324 revisions will include Reasonably Available Control Technology (RACT) for NO_x.

In addition, the proposed amendments correct typographical or other clerical errors; make minor grammatical changes to improve readability or clarity; modify the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or make various other minor changes of a purely editorial nature. As these changes do not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 14 of this notice.

Issues Raised and Discussed During this Rulemaking Process:

Stakeholders expressed a general understanding for the need for rule revisions based on the department's nonattainment status; however, Stakeholders were concerned about the emission limitations and what is considered "RACT" and what is considered "beyond RACT". In addition, questions were raised regarding the following:

- The correlation of Rule 324 with New Source Performance Standards (NSPS)
- The emission limitations for existing engines and new engines
- The compliance schedule for equipment being removed from service

Description of Proposed Amendments:

Regarding the Title of the Rule:

The title of the rule is proposed to be changed to "Stationary Reciprocating Internal Combustion Engines (RICE)" and the term "stationary internal combustion (IC) engine" is proposed to be changed to "stationary reciprocating internal combustion engine (RICE)" in the definitions and throughout the rule.

Regarding Applicability:

- Section 102 (Applicability): Rule 324 is proposed to continue to apply to spark-ignition engines or compression-ignition engines including stationary RICE used in cogeneration, with a rated brake horsepower (rated bhp) of greater than 250 and to also apply to a combination of stationary RICE each with a rated bhp greater than 50 used at a source, whose maximum aggregate rated bhp is greater than 250. Rule 324 is proposed to be revised to also apply to stationary RICE that are subject to federal standards of performance.
- Section 102.3 (Applicability): Rule 324 is proposed to include new Section 102.3 (per a Stakeholder's comment) a provision that states that engines subject to Rule 324 may be subject to New Source Performance Standards (NSPS) and/or National Emission Standards for Hazardous Air Pollutants (NESHAP). This text is similar to text in Rule 322 (Power Plant Operations) and Rule 323 (Fuel Burning Equipment from Industrial/Commercial/Institutional (ICI) Sources).

Regarding Exemptions:

- Section 103.2 (Exemptions): Rule 324 is proposed to clarify that nonroad internal combustion (IC) engines are not considered stationary RICE, to include nonroad internal combustion (IC) engines in new Section 103.2 and to add that a nonroad internal combustion (IC) engine must be operated and approved by the Control Officer as a nonroad internal combustion (IC) engine in order for such engine to be exempt from all of the requirements of Rule 324.
- Sections 104, 105, and 106 (Partial Exemptions): Rule 324 is proposed to add "as defined in this rule" after "emergency engine" to clarify that the provision that an emergency engine shall not exceed 500 hours of operation applies to the definition of "emergency engine" and applies to an emergency engine subject to Section 104, to clarify which provisions in Rule 324 apply to low usage non-emergency engines, and to add a partial exemption for engines subject to 40 CFR Part 63, Subpart ZZZZ.

Regarding Definitions:

- The requirements in Rule 324 are proposed to be harmonized with New Source Performance Standards (NSPS) IIII, JJJJ, and Most Achievable Control Technology (MACT) ZZZZ. The definitions of "existing engine" and "new engine" are proposed to be deleted from Rule 324; the terms will not be used in the rule. Rule 324 is proposed to refer to the dates before and after which NSPS were promulgated. Rule 324 is proposed to apply to spark-ignition engines and compression-ignition engines with a rated brake horsepower of greater than 250 and to any stationary reciprocating internal combustion engine subject to the federal standards of performance set forth in 40 CFR 60, Subpart IIII for compression-ignition engines or 40 CFR 60, Subpart JJJJ for spark-ignition engine.

- The definition of "Identical Replacement Engine" is proposed to be made consistent with the definition of "Equivalent Replacement Engine" and the definition of "Internal Combustion (IC) Engine, Nonroad" is proposed to be clarified, so the text corresponds with the introductory text and corresponds with the definition of "Nonroad" in 40 CFR 1068.30. The U.S. Environmental Protection Agency (EPA) commented that the proposed text that a nonroad IC engine must be approved by the Control Officer (proposed Section 212.1(d)) allows discretion to the Control Officer without guidance or restriction on how the Control Officer shall make the determination. The EPA commented that this text/discretion should be removed. Accordingly, the definition of "nonroad IC engine" is proposed to include an introductory statement that the requirements of a nonroad IC engine must be met and approved by the Control Officer in order for the engine to be determined to be a nonroad IC engine; the intent is that even if the engine meets the definition of a "nonroad IC engine", it is not a nonroad IC engine until the Control Officer approves it.
- The term "Prime Engine" is proposed to be changed to "Non-Emergency Engine" and the definition of "Non-Emergency Engine" is proposed to be added, which is proposed to be the same definition as the definition of "Prime Engine". The term "prime engine" is proposed to be changed to "non-emergency engine" throughout the rule.
- The definition of "Internal Combustion (IC) Engine, Nonroad" is proposed to be changed to "Nonroad Internal Combustion (IC) Engine", since "nonroad" is the most important term.
- The definition of "Internal Combustion (IC) Engine, Stationary" is proposed to be changed to "Stationary Internal Combustion Engine (RICE)", since "stationary" is the most important term.

Regarding Good Combustion Practices:

- Section 302 (Good Combustion Practices/Tuning Procedure for Stationary RICE): Rule 323 is proposed to include a provision that a handheld monitor may be used by the Control Officer to determine compliance.

Regarding Limitations for Non-Emergency Engines:

- Section 304 (Limitations for Non-Emergency Engines): Rule 324 is proposed to clarify the three options that non-emergency engines have for complying with Rule 324. A source can comply with (1) the provisions for add-on control equipment for non-emergency engines, (2) the current emission limitations, or (3) the federal standards of performance for non-emergency engines. The current emission limits in Rule 324 are proposed to be retained; such limits apply to:
  - Engines manufactured prior to October 22, 2003 (the date when Rule 324 was adopted)
  - Engines manufactured on or after October 22, 2003 but prior to July 11, 2005 (the date the New Source Performance Standards were adopted for compression-ignition engines)
  - Engines manufactured on or after October 22, 2003 but prior to June 12, 2006 (the date the New Source Performance Standards were adopted for spark-ignition engines)
- Rule 324 is proposed to be revised to include a requirement that spark-ignition engines manufactured after June 12, 2006 and compression-ignition engines manufactured after July 11, 2005 comply with federal standards of performance. Per Stakeholders' comments, Section 304.2, Table 2 is proposed to not include a footnote regarding test methods for PM; Section 500 includes test methods for PM.
- Section 306 (Equivalent Replacement Engine or Identical Replacement Engine): Rule 324 is proposed to clarify when an equivalent replacement engine or an identical replacement engine is to be treated as the original stationary RICE. Proposed Section 306.2 has been removed; the text is captured in proposed Section 307 (Modification to a Stationary RICE).
- Section 307 (Modification to a Stationary RICE): Rule 324 is proposed to add Section 307 to address if a modification is made to a stationary RICE.
- Section 308 (Non-Resetting Totalizing Hour Meter): Rule 324 is proposed to add Section 308 to require the installation, operation, and maintenance of non-resetting totalizing hour meter.

Regarding Administrative Requirements:

- Section 401 (Compliance Schedule-Stationary RICE Being Removed from Service) is proposed to require that if a stationary RICE must be removed from service because such engine does not comply with the emission limits in Rule 324, then the stationary RICE that replaces such engine must comply with all applicable provisions of Rule 324, e.g., limitations for fuel, limitations for opacity, and with the federal standards of performance for non-emergency engines.
- Section 402 (Compliance Schedule-Non-Resetting Totalizing Hour Meter) is proposed to be added; a non-resetting totalizing hour meter must be installed, operated, and maintained on a stationary RICE.

Regarding Compliance Determinations:

- Section 501 (Compliance Determination) is proposed to be clarified regarding the compliance determination requirements for stationary RICE, an engine family, and engines with a displacement of greater than or equal to 30 liters per cylinder. Also, the compliance determination for low sulfur oil verification (Section 501.3) is proposed to be changed to a compliance determination for ultra low sulfur diesel verification consistent with federal standards. Due to the EPA's comments, additional language was added to clarify that sulfur content verification documents must provide accurate values and utilize enforceable test methods to determine the sulfur content. Also, the test method for determining sulfur content of waste gas is proposed to be added in Sections 501.4 and 504.16 (Compliance Determination-Test Methods Incorporated by Reference).
- Section 501.1(d) (Compliance Determination-Stationary RICE) is proposed to be added. Rule 324 is proposed to be revised to include a requirement that sources that choose add-on control equipment for non-emergency engines (Section 304.1) shall demonstrate compliance by installing, operating, and maintaining in calibration, devices that continuously monitor the operational characteristics of the engine and any NO_x emission reduction system.
- Section 503 (Compliance Determination-Test Methods Incorporated by Reference) is proposed to be clarified to allow alternative test methods.
- Section 504.12 (Compliance Determination-Test Methods Incorporated by Reference): The test method "American Society of Testing Materials, ASTM Method D1266-98, ("Standard Test Method for Sulfur in Petroleum Products - Lamp Method"), 1998" is proposed to be deleted. The EPA commented that the test method may not be appropriate; its range is 0.01-0.4% which will not be able to verify compliance with the definition of ultra low sulfur diesel fuel at <0.0015%.

6. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
   - **(a)** Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
   - **(b)** Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals

under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. While currently classified as a "marginal" ozone nonattainment area, the county recently failed to meet 2008 8-hour ozone standard by the marginal area attainment date and anticipates EPA will issue a notice proposing to re-classify the area to "moderate". Further, a portion of the county was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the county to continue to maintain the measures and requirements that allowed the county to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM_{10} 24-hour standard. This is the only serious PM_{10} nonattainment area in Arizona. Revisions to Rule 324 are being proposed to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The proposed amendments in Rule 324 include Reasonably Available Control Technology (RACT) for NO_x.

The department complies with A.R.S. § 49-112(B) in that the proposed amendments to Rule 324 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49, address the peculiar local conditions in Maricopa County, are authorized under A.R.S. Title 49, Chapter 3, Article 3, and are not in lieu of a state program.

7. **Documents and/or studies referenced and/or reviewed for this rulemaking:**

Not applicable

8. **Showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**

Not applicable

9. **The preliminary summary of the economic, small business, and consumer impact:**

The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

An identification of the rulemaking.

This rulemaking is proposing to revise Rule 324 (Stationary Internal Combustion (IC) Engines).

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.

The persons who will be directly affected by and bear the costs of this rulemaking will be facilities in Maricopa County that use stationary spark- or compression-ignited RICE including stationary RICE used in cogeneration with a rating of greater than 250 brake horsepower (rated bhp), and facilities that use a combination of stationary RICE each with a rated bhp greater than 50 used at a source, whose maximum aggregate rated bhp is greater than 250. The department has issued permits to more than 590 facilities.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**

Because this rulemaking does not impose any new compliance burdens on regulated entities or introduce additional regulatory requirements, the department deemed that none of the revisions have potentially significant economic impacts. It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

The benefits of the rule revision are anticipated to be a result of the following changes:

- Changing the title of the rule to: Stationary Reciprocating Internal Combustion Engines (RICE);
- Adding a requirement that spark-ignition engines manufactured after June 12, 2006 and compression-ignition engines manufactured after July 11, 2005 comply with the federal standards of performance;
- Adding a compliance schedule for installing, maintaining, and operating a non-resetting totalizing hour meter;

- Reformatting Tables 1, 2, and 3 to clarify emission limits and retain current emission limits;
- Clarifying the compliance schedule for stationary RICE being removed from service;
- Clarifying that alternative test methods may be used if approved by the Control Officer.

The requirement that spark-ignition engines and compression-ignition engines must comply with existing federal standards of performance and the compliance schedule for a non-resetting totalizing hour-meter are revisions that aligns Maricopa County requirements with existing federal standards. Based on observations by department inspectors, all facilities subject to this rule as revised should already be in compliance with this requirement; therefore, no incremental costs are associated with the Rule 324 revisions.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity provided by the Rule 324 revisions will provide a benefit to the regulated community; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision will not impose increased monetary or regulatory costs on individuals so regulated.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions will not impose increased monetary or regulatory costs on any business, persons, or individuals so regulated.

(a) **An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County that use stationary spark- or compression-ignited RICE including stationary RICE used in cogeneration with a rating of greater than 250 brake horsepower (rated bhp), and facilities that use a combination of stationary RICE each with a rated bhp greater than 50 used at a source, whose maximum aggregate rated bhp is greater than 250.

(b) **The administrative and other costs required for compliance with the rulemaking.**

This rulemaking updates and clarifies existing rule provisions and definitions to be consistent with federal performance standards and to reduce confusion and improve understanding and readability. The department considered the implications of the proposed amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**

By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability. Although the revised rule does include a schedule for compliance with installation of non-resetting totalizing hour meters, based on department inspector observations, the subject sources should already be in compliance with this requirement; therefore, no cost impacts on businesses, including small businesses, are anticipated.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**
This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**
This rulemaking does not impose any new compliance burdens on regulated entities or introduce additional regulatory requirements and will not impose increased monetary or regulatory costs on any business, persons, or individuals so regulated. As such, there are no costs to pass through to consumers which means there are no impacts on consumers.

A statement of the probable effect on state revenues.
The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.
This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

10. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name:	Johanna M. Kuspert or Hether Krause
	Maricopa County Air Quality Department
	Planning and Analysis Division
Address:	1001 N Central Avenue, Suite 125
	Phoenix, AZ 85004
Telephone:	(602) 506-6010
Fax:	(602) 506-6179
E-mail:	aqplanning@mail.maricopa.gov

11. **Time, place, and nature of the proceedings for the rulemaking:**
Written oral proceeding requests or written comments or both will be accepted until the record is closed on June 13, 2016, 5:00 p.m. Written oral proceeding requests or written comments or both may be mailed, e-mailed, or hand delivered to the department (see Item #4 of this notice). An oral proceeding will be scheduled only upon receipt of a written request before the record is closed on June 13, 2016, 5:00 p.m. Written comments received during the comment period and before the record is closed on June 13, 2016, 5:00 p.m. will be considered formal comments to the Notice of Proposed Rulemaking and will be responded to in the Notice of Final Rulemaking.

12. **Any other matters prescribed by statute that are applicable to the specific department or to any specific rule or class of rules:**
Not applicable

13. **Incorporations by reference and their location in the rule:**
The department incorporated by reference sections of the Code of Federal Regulations in Section 503 (Compliance Determination-Test Methods Incorporated by Reference)

14. **Full text of the rule follows:**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS
RULE 324
STATIONARY RECIPROCATING INTERNAL COMBUSTION ~~(IC)~~ ENGINES (RICE)
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~~Adopted 10/23/03~~
~~Revised 10/17/07~~

Adopted 10/22/2003; Revised 10/17/2007; **Revised MM/DD/YYYY**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS
RULE 324

STATIONARY RECIPROCATING INTERNAL COMBUSTION ~~(IC)~~ 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 ~~(IC)~~ engines (RICE).

102 APPLICABILITY: ~~The provisions of this rule apply to any single existing or new stationary spark or compression-ignited reciprocating IC engine including stationary IC engines used in~~

~~cogeneration, with a rating of greater than 250 brake horsepower (bhp). The provisions of this rule also apply to a combination of IC engines each with a rated brake horsepower greater than 50 bhp used at a single source, whose maximum aggregate rated brake horsepower is greater than 250 bhp~~.

~~102.1~~ This rule applies to a spark-ignition engine or compression-ignition engine including stationary RICE used in cogeneration, with a rated brake horsepower (rated bhp) of greater than 250. This rule also applies to a combination of stationary RICE each with a rated bhp greater than 50 used at a source, whose maximum aggregate rated bhp is greater than 250.

~~102.2~~ A stationary RICE subject to this rule that is also subject to the federal standards of performance set forth in 40 CFR Part 60, Subpart IIII for compression-ignition engines or 40 CFR Part 60, Subpart JJJJ for spark-ignition engines shall comply with the most stringent requirements. Whenever more than one provision in this rule applies to such engine or whenever a provision in this rule and a provision in the federal standards apply to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

~~102.3~~ **NSPS & NESHAP:** In addition to this rule, a stationary RICE 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. Whenever more than one provision in this rule applies to such engine or whenever a provision in this rule and a provision in the federal standards apply to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

103 **EXEMPTIONS:** ~~The following types of stationary IC engines are exempt from all of the requirements of this rule but shall comply with Rule 300:~~

~~103.1 Any rotary engine, including gas turbines, jet engines.~~

~~103.2 An IC engine operated as a nonroad engine.~~

~~103.3 A laboratory IC engine 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.~~

~~103.4 A prime engine when it is operated for purposes of performance verification and testing by the owner or operator or by a manufacturer or distributor of such equipment for the purpose of performance verification and testing at the production facility.~~

~~103.5 A compressed gas IC engine used for solar testing and research programs.~~

~~103.6 An IC engine operated as an emergency generator or other equipment at a nuclear power plant that must run for safety reasons and/or operational tests to meet requirements imposed by the Nuclear Regulatory Commission.~~

~~103.7 An IC engine test stand used for evaluating engine performance. ; and~~

~~103.8 An IC engine used for training purposes as long as the total number of hours of the operation does not exceed 100 hours per calendar year per engine.~~

103.1 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:

a. A rotary engine, including gas turbines, jet engines.

b. 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.

c. A non-emergency engine when it is operated for purposes of performance verification and testing by the owner or operator or by a manufacturer or distributor of such equipment for the purpose of performance verification and testing at the production facility.

d. A compressed gas stationary RICE used for solar testing and research programs.

e. A stationary RICE operated as an emergency engine or other equipment at a nuclear power plant that must run for safety reasons and/or operational tests to meet requirements imposed by the Nuclear Regulatory Commission.

f. A stationary RICE test stand used for evaluating engine performance.

g. A stationary RICE used for training purposes as long as the total number of hours of the operation does not exceed 100 hours per calendar year per engine.

103.2 The following internal combustion (IC) engines are exempt from all of the requirements of this rule but shall comply with Rule 300 (Visible Emissions) of these rules:

a. An IC engine operated as a nonroad IC engine; or

b. A piece of equipment that is approved by the Control Officer as a nonroad IC engine.

104 PARTIAL EXEMPTIONS FOR EMERGENCY ENGINES: ~~Any~~ A stationary ~~IC engine~~ RICE operated as an emergency engine, as defined in this rule, for any of the following reasons ~~is exempt from all of the provisions of this rule, except for the provisions in Sections 301, 303, and subsections 502.1 and 502.4:~~ shall comply with the provisions in Sections 301, 303, 306, 307, 400, 502.1 and 502.4 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 ~~the~~ 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 does not exceed 100 hours per calendar year per engine as evidenced by an installed non-resettable hour meter.

104.6 Used as the ~~prime~~ non-emergency engine when the ~~prime~~ non-emergency engine has failed, but only for such time as is needed to repair the ~~prime~~ non-emergency engine. ; ~~or~~

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, ~~LOW USAGE PRIME~~ ENGINES: The following low usage non-emergency engines ~~, low usage prime engines are exempt from all of the provisions of this rule except for the provisions in Sections 301, 303, and subsections 502.1 and 502.4:~~ shall comply with the provisions in Sections 301, 303, 306, 307, 400, 502.1 and 502.4 of this rule for:

105.1 Each engine with a rated bhp at or below 1000 ~~bhp~~ that operates less than 200 hours in any 12-consecutive-calendar-month period as evidenced by an installed non-resettable hour meter.

105.2 Each engine with a rated bhp above 1000 ~~bhp~~ that operates less than 100 hours in any 12-consecutive-calendar-month period as evidenced by an installed non-resettable hour meter.

106 PARTIAL EXEMPTION FOR NON-EMERGENCY ENGINES SUBJECT TO 40 CFR PART 63, SUBPART ZZZZ: A stationary RICE subject to the federal standards of performance set forth in 40 CFR Part 63, Subpart ZZZZ shall comply with the provisions in Sections 502.1, 502.2, and 502.3 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. ~~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 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 COGENERATION UNIT: ~~Internal combustion engine 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.

203 **COMPRESSION-IGNITION ENGINE:** ~~A reciprocating internal combustion 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.

204 **DIESEL ENGINE:** A type of ~~compression-ignited IC engine~~ compression-ignition engine.

205 **EMERGENCY ENGINE:** ~~Any stationary standby IC engine~~ A stationary RICE whose sole function is to provide back-up power when electric power from the local utility is interrupted or when operated solely for any of the reasons listed in Section 104 of this rule. An emergency engine, for the purposes of this rule, shall not be used to supply standby power due to a voluntary reduction in power by a utility or power company, supply power for distribution or sale to the grid, or supply power at a source in order to avoid peak demand charges or high electric energy prices during on-peak price periods and shall not exceed 500 hours of operation per calendar year including the 100 hours listed in ~~subsection~~ Section 104.5 of this rule.

206 **ENGINE FAMILY:** A group of ~~engines~~ stationary RICE with similar design features such as fuel type, cooling medium, method of air aspiration, combustion chamber design including cylinder bore and stroke, exhaust after treatment (if any), method of fuel admission, and method of control. These engines are also expected to have similar emission and operating characteristics throughout their useful lives.

207 **EQUIVALENT REPLACEMENT ENGINE:** ~~An engine~~ A stationary RICE that is substituted for a stationary ~~IC engine~~ RICE that is intended to perform the same or similar function as the original ~~engine~~ stationary RICE and where all of the following conditions exist:

207.1 The equivalent replacement engine results in equal or lower air contaminant emissions than the ~~existing engine~~ original stationary RICE; and

207.2 The equivalent replacement engine meets the emission control technology standards contained in ~~either Table 1 or Table 2~~ Section 304 of this rule; and

207.3 The rated bhp of the equivalent replacement engine does not exceed the rated bhp of the ~~existing engine~~ original stationary RICE (or sum of ~~existing engines~~ original stationary RICE) by more than 20 percent. For every percentage point increase of the rated ~~brake horsepower~~ bhp, there shall be an associated decrease in emissions of nitrogen oxides, expressed as a mass per unit time, equal to or exceeding two percentage points.

~~208 EXISTING ENGINE: An engine that commenced operation prior to October 22, 2003 or an engine on which the construction or modification has commenced prior to October 22, 2003, including the contractual obligation to undertake and complete an order for an engine.~~

~~209~~ **208** **IDENTICAL REPLACEMENT ENGINE:** ~~An engine that is substituted for an existing stationary IC engine that has the same manufacturer type, model number, manufacturer's maximum rated capacity (bhp), and that is intended to perform the same or similar function as the original stationary IC engine that it replaces and has equal or lower emissions or meets the emission control technology requirements in Section 304, Table 1, 2, or 3.~~ A stationary RICE that is substituted for a 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.

~~210 INTERNAL COMBUSTION (IC) ENGINE, NONROAD:~~

~~210.1 An IC engine~~:

~~a. 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

~~b. In or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); or~~

~~c. 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.~~

~~210.2 An internal combustion engine is not a nonroad engine if~~:

~~a. The~~ engine used to propel a motor vehicle, an aircraft, or ~~a vehicle~~ equipment used solely for competition~~, or is subject to standards promulgated under Section 202 of the Clean Air Act~~; or

~~b. The engine regulated by a federal New Source Performance Standard promulgated under Section 111 of the Clean Air Act; or~~

~~c. The engine otherwise included in paragraph (c) above of this definition remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. 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. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is 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. This paragraph does not apply to an engine after the engine is removed from the location.~~

~~211 INTERNAL COMBUSTION (IC) ENGINE, STATIONARY : Any reciprocating, piston-driven IC 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. Any 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 IC engine is not a nonroad engine.~~

~~212~~ **209** **LEAN-BURN ENGINE:** ~~A spark-ignited 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%.

~~213~~ **210** **LOCATION:** Any single site at a building, structure, facility or installation.

~~214 LOW SULFUR OIL: Fuel oil containing less than or equal to 0.05 % sulfur by weight.~~

~~215 NEW ENGINE: An engine that is not an existing engine.~~

211 **NON-EMERGENCY ENGINE:** A stationary RICE that is dedicated to a process or processes for the purpose of supplying primary mechanical or electrical power.

212 **NONROAD INTERNAL COMBUSTION (IC) ENGINE:**

212.1 Upon approval by the Control Officer, equipment that meets the following requirements are nonroad IC engines:

a. 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

b. 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

c. 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.

212.2 The following are not nonroad IC engines:

a. An engine used to propel a motor vehicle, an aircraft, or equipment used solely for competition; or

b. An engine regulated by a federal New Source Performance Standard promulgated under Section 111 of the Clean Air Act; or

c. An engine otherwise included in Section 212.1(c) of this rule that remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. 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. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is 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. This paragraph does not apply to an engine after the engine is removed from the location.

~~216~~ **213** **PART(S) PER MILLION, DRY VOLUME (PPMDV):** A unit of proportion equal to 10^{-6} that is measured on a dry basis (minus water) at 15% oxygen.

~~217 PRIME ENGINE: A principal or main use engine that is dedicated to a process or processes for the purpose of supplying primary mechanical or electrical power, as opposed to an emergency engine.~~

~~218~~ **214** **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.

~~219~~ **215** **RICH-BURN ENGINE:** ~~Any spark-ignited IC engine~~ A spark-ignition engine that is not a lean-burn engine.

~~220~~ **216** **SPARK-IGNITION ENGINE:** ~~An IC 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.

217 **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~~ **218** **SULFUR OXIDES (SO_X):** Oxides of sulfur calculated as equivalent sulfur dioxide.

219 **ULTRA LOW SULFUR DIESEL:** Fuel oil containing less than or equal to 0.0015 % sulfur by weight.

~~222~~ **220** **WASTE DERIVED FUEL GAS**: ~~Any~~ A gaseous fuel that is generated from the biodegradation of solid or liquid waste including, but not limited to, ~~sewage sludge,~~ digester gas, and landfill gas.

SECTION 300 – STANDARDS:

301 **LIMITATIONS FOR ~~NEW AND EXISTING STATIONARY IC ENGINES~~ STATIONARY RICE - FUEL**: An owner or operator of ~~any~~ an engine that meets the criteria listed in Section 102 of this rule shall comply with either of the following:

301.1 Use any fuel that contains no more than ~~0.05%~~ 0.0015% sulfur by weight, alone or in combination with other fuels.

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.

302 **GOOD COMBUSTION PRACTICES / TUNING PROCEDURE FOR STATIONARY RICE:** An owner or operator of an engine that meets the criteria listed in Section 102 of this rule shall conduct preventative maintenance or tuning procedures as recommended by the engine manufacturer to ensure good combustion practices to minimize NO_x emissions. A handheld monitor may be used if so desired by the owner or operator for measurement of NO_x and CO ~~and~~ concentrations in the effluent stream after each adjustment is made~~. This~~; this may assist in determining that the proper adjustment has been made to ~~ensure NO_x and CO minimization~~ minimize NO_x and CO emissions. A handheld monitor may be used by the Control Officer to determine compliance with this section. ~~In lieu of a manufacturer's procedure, a different procedure specified by any other maintenance guideline may be used as a default procedure.~~ The owner or operator shall include all of the following in the tuning procedures ~~procedure shall include all of the following~~, if the engine is so equipped, and if such procedures are appropriate to the type of engine:

302.1 Lubricating Oil and Filter: Change once every three months or after no more than 300 hours of operation, whichever occurs last.

302.2 Inlet Air Filter: Clean once every three months or after no more than 300 hours of operation and replace every 1,000 hours of operation or every year, whichever occurs last.

302.3 Fuel Filter: Clean once every year or replace (if cartridge type) once every 1,000 hours of operation, whichever occurs last.

302.4 Check and adjust the following once every year or after no more than 1,000 hours of operation, whichever occurs last:

a. Intake and exhaust valves
b. Spark plugs (if so equipped)
c. Spark timing and dwell or fuel injection timing (if adjustable), and
d. Carburetor mixture (if adjustable).

302.5 Spark Plugs and Ignition Points: Replace after 3,000 hours of operation or every year whichever occurs last

302.6 Coolant: Change after 3,000 hours of operation or every year whichever occurs last.

302.7 Exhaust System: Check for leaks and/or restrictions after 3,000 hours of operation or every year whichever occurs last.

303 LIMITATIONS FOR STATIONARY RICE – OPACITY: ~~No~~ An owner or operator of an engine that meets the criteria in Section 102 of this rule shall not discharge into the ambient air from any ~~single source of emissions~~ such engine any air contaminant, other than uncombined water, in excess of 20% opacity.

304 ~~ADDITIONAL~~ LIMITATIONS FOR ~~PRIME~~ NON-EMERGENCY ENGINES ~~>~~250 RATED BHP OR GREATER: ~~In addition to meeting the standards in Sections 301, 302, and 303, each existing or new prime engine greater than 250 rated bhp that is not listed in Sections 103, 104, or 105, shall comply with the emission limits or control technology requirements listed in Section 304, Table 1, 2, or 3, dependent upon the type of engine.~~ In addition to meeting the standards in Sections 301, 302 and 303 of this rule, an owner or operator of a non-emergency engine that meets the criteria in Section 102 of this rule shall comply with Sections 304.1, 304.2, or 304.3 of this rule.

304.1 Add-on Control Equipment for Non-Emergency Engines: The uncontrolled NO_x emissions from the non-emergency engines shall be reduced with add-on control equipment in compliance with Table 1 of this rule.

TABLE 1

Engine Category	Weight Percent Reduction
Rich-burn engines using fossil derived gaseous fuel or gasoline (spark-ignition engines)	90
Lean-burn engines using fossil derived gaseous fuel (spark-ignition engines)	90
Engines using diesel or kerosene fuel (compression-ignition engines)	90

304.2 Engine Requirements for Non-Emergency Engines: The emissions in parts per million by dry volume (ppmdv) or grams per bhp (g/bhp) from the non-emergency engines shall comply with either Table 2 or Table 3 of this rule.

TABLE 2
COMPRESSION-IGNITION ENGINES

MANUFACTURED OR MODIFIED	RATED BHP	ENGINE REQUIREMENTS
Prior to October 22, 2003	250-399	770 ppmdv or 10 g/bhp-hr. NO_X or turbocharger with aftercooler/intercooler or 4-degree injection timing retard
Prior to October 22, 2003	400 plus	550 ppmdv or 7.2 g/bhp-hr. NO_X or turbocharger with aftercooler/intercooler or 4-degree injection timing retard
On or after October 22, 2003 but prior to July 11, 2005	>250	530 ppmdv or 6.9 g/bhp-hr. NO_X or turbocharger with aftercooler/intercooler or 4-degree injection timing retard; 1,000 ppmdv CO;0.40 g/bhp-hr PM

TABLE 3
SPARK-IGNITION ENGINES

LEAN-BURN ENGINES

MANUFACTURED OR MODIFIED	RATED BHP	OXIDES OF NITROGEN (NO_X)	VOLATILE ORGANIC COMPOUND (VOC)	CARBON MONOXIDE (CO)
Prior to October 22, 2003	>250	280 ppmdv or 4.0 g/bhp-hr	800 ppmdv or 5.0 g/bhp-hr	4,500 ppmdv

On or after October 22, 2003 but prior to June 12, 2006	>250	110 ppmdv or 1.5 g/bhp-hr	800 ppmdv or 5.0 g/bhp-hr	4,500 ppmdv

RICH-BURN ENGINES

MANUFACTURED OR MODIFIED	RATED BHP	OXIDES OF NITROGEN (NOX)	VOLATILE ORGANIC COMPOUND (VOC)	CARBON MONOXIDE (CO)
Prior to October 22, 2003	>250	280 ppmdv or 4.0 g/bhp-hr or three-way catalyst*	800 ppmdv or 5.0 g/bhp-hr or three-way catalyst*	4,500 ppmdv or three-way catalyst*
On or after October 22, 2003 but prior to June 12, 2006	>250	20 ppmdv or 0.30 g/bhp-hr or three-way catalyst*	800 ppmdv or 5.0 g/bhp-hr or three-way catalyst*	4,500 ppmdv or three-way catalyst*

* The three-way catalyst shall provide a minimum of 80% control efficiency for NO_x and CO for those engines fueled with natural gas, propane or gasoline. In addition, the three-way catalyst shall also provide a minimum of at least 50% control efficiency for VOC for those engines fueled by gasoline.

~~NO_X EMISSION LIMITS OR CONTROL TECHNOLOGY REQUIREMENTS FOR EXISTING COMPRESSION-IGNITION ENGINES > 250 bhp~~

~~TABLE 1~~

~~RATED BRAKE HORSEPOWER~~ (bhp)	~~ENGINE REQUIREMENTS~~
~~250-399~~	~~770 ppmdv or 10 g/bhp-hr. NOx or turbocharger with aftercooler/intercooler or 4-degreeinjection timing retard~~
~~400 plus~~	~~550 ppmdv or 7.2 g/bhp-hr. NOx or turbocharger with aftercooler/intercooler or 4-degreeinjection timing retard~~

~~EMISSION LIMITS OR CONTROL TECHNOLOGY REQUIREMENTS FOR EXISTING APPLICABLE SPARK-IGNITION ENGINES > 250 RATED BHP~~

~~TABLE 2~~

~~OXIDES OF NITROGEN (NO_X)~~	~~VOLATILE ORGANIC COMPOUND(VOC)~~	~~CARBON MONOXIDE (CO)~~
~~280 ppmdv or 4.0 b/bhp-hr or three-way catalyst*~~	~~800 ppmdv or 5.0 g/bhp-hr or three-way catalyst*~~	~~4,500 ppmdv or three-way catalyst*~~

~~EMISSION LIMITS FOR NEW SPARK OR COMPRESSION-IGNITION ENGINES > 250 BHP~~

~~TABLE 3~~

~~ENGINE TYPE~~	~~NOx~~	~~PM*~~	~~CO~~
~~LEAN BURN (SPARK)~~	~~110 ppmdv or 1.5g/bhp-hr.~~	~~Not Applicable~~	~~4,500 ppmdv~~
~~RICH BURN (SPARK)~~	~~20 ppmdv or 0.30g/bhp-hr.~~	~~Not Applicable~~	~~4,500 ppmdv~~
~~COMPRESSION~~	~~530 ppmdv or 6.9g/bhp-hr.~~	~~0.40g/bhp-h r~~	~~1,000 ppmdv~~

~~* A backhalf analysis shall be performed using reference Method 202 (referenced in subsection 504.6) each time a compliance test for particulate matter emissions to meet the limitations listed in Table 3 is performed using Method 5. The results of the Method 202 testing shall be used for emissions inventory purposes.~~

304.3 **Federal Standards of Performance for Non-Emergency Engines:** An owner or operator of an engine listed in Sections 304.3(a) or (b) of this rule shall comply with the federal standards of performance for compression-ignition engines set forth in 40 CFR Part 60, Subpart IIII or spark-ignition engines set forth in 40 CFR Part 60, Subpart JJJJ and in all accompanying appendices as incorporated by reference in Rule 360 (New Source Performance Standards) of these rules. Whenever more than one provision in this rule applies to such engine or whenever a provision in this rule and a provision in the federal standards apply to such engine, the provision or

combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

a. 40 CFR Part 60, Subpart IIII applies to all of the following non-emergency compression-ignitionengines:

(1) Any stationary compression-ignition IC engine that was ordered after July 11, 2005 and manufactured after April 1, 2006.

(2) Any stationary compression-ignition IC engine that was modified or reconstructed after July 11, 2005.

b. 40 CFR Part 60, Subpart JJJJ applies to the following non-emergency spark-ignition engine:

(1) Any stationary spark-ignition engine that was ordered after June 12, 2006 and manufactured on or after:

(a) July 1, 2007 for engines with a rated bhp greater than or equal to 500 (except lean burn engines with a rated bhp greater than or equal to 500 and less than 1,350)

(b) January 1, 2008 for lean burn engines with a rated bhp greater than or equal to 500 and less than 1,350

(c) July 1, 2008 for engines with a rated bhp less than 500.

(2) Any stationary spark-ignition engine that was modified or reconstructed after June 12, 2006.

305 EFFICIENCY ALLOWANCE: Each emission limit expressed in Tables ~~1, 2 or 3~~ 2 or 3 of this rule may be multiplied by X, where X equals the engine efficiency (E) divided by a reference efficiency of 30 percent. Engine efficiency shall be determined by one of the following methods whichever is higher:

a. E = (Engine Output) X (100) ÷ (Energy Input) where Energy Input is determined by a fuel measuring device accurate to +/- 5 % and is based upon the higher heating value (HHV) of the fuel. Percent efficiency (E) shall be averaged over 15 consecutive minutes and measured at peak load for the applicable engine.

b. E = (Manufacturers Rated Efficiency [Continuous] at (LHV) X (LHV) ÷ (HHV) where LHV = the lower heating value of the fuel Engine efficiency (E) shall not be less than 30 percent; an engine with an efficiency lower than 30 percent shall be assigned an efficiency of 30 percent for the purposes of this rule.

306 EQUIVALENT REPLACEMENT ENGINE OR IDENTICAL REPLACEMENT ENGINE ~~REPLACEMENT~~**:** ~~An equivalent or identical replacement engine that replaces an existing engine shall be treated as an existing engine for the purposes of compliance with this rule, unless the engine commenced operation or was constructed or modified after October 22, 2003, including the contractual obligation to undertake and complete an order for an engine, and then it will be considered a new engine for purposes of meeting the standards for a new engine in this rule.~~ An equivalent replacement engine or an identical replacement engine shall be treated as the original stationary RICE that it replaces for the purposes of compliance with this rule.

307 MODIFICATION TO a STATIONARY RICE: If a modification, including the contractual obligation to undertake and complete an order for an engine, is made to a stationary RICE, then such engine shall comply with all applicable provisions of this rule. The date of the modification shall be the trigger for when the modification is subject to the provisions of Section 304 of this rule. Whenever a provision in this rule and a provision in Section 304 of this rule apply to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

308 NON-RESETTING TOTALIZING HOUR METER: The owner or operator of a stationary RICE, subject to any provision of this rule, except for those engines being removed from service under Section 401 of this rule, shall install, operate, and maintain a non-resetting totalizing hour meter. If the non-resetting totalizing hour meter is found to be malfunctioning, operation of the engine shall cease until corrective action(s) can be implemented or the function of the meter is restored.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE-STATIONARY RICE BEING REMOVED FROM SERVICE: ~~An owner or operator of an existing a stationary IC engine that must be replaced with a new engine to meet emission limits listed in Section 300 shall be in compliance with the emission limits listed in Section 304, Table 3 by October 22, 2007.~~ 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 12 months after [Date of Adoption]. The stationary RICE that replaces such engine shall comply with all applicable provisions of this rule and shall comply with Section 304 of this rule upon installation.

402 COMPLIANCE SCHEDULE-NON-RESETTING TOTALIZING HOUR METER: The owner or operator of a stationary RICE, subject to any provision of this rule, except for those engines being removed from service under Section 401 of this rule, shall install, operate, and maintain a non-resetting totalizing hour meter on each such engine no later than 12 months after [Date of Adoption].

SECTION 500 - MONITORING AND RECORDS

501 COMPLIANCE DETERMINATION:

~~Existing Engines: Existing IC engines or engine families shall demonstrate compliance with Section 300 by recordkeeping according to Section 502. Emission testing using the applicable test methods listed in Section 500 shall be performed if the Control Officer requests.~~

~~Existing Engine Families at a Source: When testing an engine family at one source, the number of engines tested should be the greater of either one engine or one third of all identical engines in the group. If any of the representative engines exceed the emission limits, each engine in the group shall demonstrate compliance by emissions testing.~~

~~New Engines / New Engine Families: Compliance with the limitations listed in Section 304, Table 3 shall be demonstrated by either:~~

a. ~~A statement from the manufacturer that the engine meets the most stringent emissions standards found in 40 CFR Part 89 or 90 applicable to the engine and its model year at the time of manufacture, or~~

b. ~~Performance of emission testing using the test methods listed in Section 503.~~

501.1 **Stationary RICE:** An owner or operator of a stationary RICE shall demonstrate compliance with all of the following, as applicable:

a. With Section 300 of this rule, by recordkeeping according to Section 502 of this rule. Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.

b. With Section 304.3 of this rule, by one of the following:

(1) A statement from the manufacturer that the engine meets the most stringent emissions standards found in this rule or 40 CFR Parts 89, 90, and 1039 applicable to the engine and its model year at the time of manufacture.

(2) Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.

c. With 40 CFR Part 60.4213, for a stationary RICE with a displacement of greater than or equal to 30 liters per cylinder.

d. With Section 304.1 of this rule, by installing, operating, and maintaining in calibration, devices that continuously monitor the operational characteristics of the engine and any NO_x emission reduction system.

501.2 **Engine Family:** An owner or operator of an engine family shall demonstrate compliance with all of the following, as applicable:

a. With Section 300 of this rule, by recordkeeping according to Section 502 of this rule. Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.

b. When testing an engine family at one source, the number of engines tested should be the greater of either one engine or one third of all identical engines in the group. If any of the representative engines exceed the emission limits, each engine in the group shall demonstrate compliance by emissions testing.

c. With Section 304.3 of this rule, by one of the following:

(1) A statement from the manufacturer that the engine meets the most stringent emissions standards found in this rule or 40 CFR Parts 89, 90, and 1039 applicable to the engine and its model year at the time of manufacture.

(2) Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.

d. With 40 CFR Part 60.4213, for an engine family with a displacement of greater than or equal to 30 liters per cylinder.

501.3 ~~Low Sulfur Oil~~ **Ultra Low Sulfur Diesel Verification:** ~~If the Control Officer requests proof of the sulfur content, the owner or operator shall submit fuel receipts, contract specifications, pipeline meter tickets, Material Safety Data Sheets (MSDS), fuel supplier information or purchase records, if applicable, from the fuel supplier, indicating the sulfur content of the fuel oil. In lieu of these, testing of the fuel oil for sulfur content to meet the 0.05% limit shall be permitted if so desired by the owner or operator for evidence of compliance.~~ If the Control Officer requests documentation of the sulfur content of the fuel oil to demonstrate the 0.0015% limits, the owner or operator shall submit one of the following:

a. Fuel receipts, or
b. Contract specifications, or
c. Pipeline meter tickets, or
d. Safety Data Sheets (SDS), or
e. Fuel supplier information, or
f. Purchase records, or
g. Testing of the fuel oil for sulfur content

The items listed above must provide accurate sulfur content values and utilize enforceable test methods to determine the sulfur content.

501.4 **Waste Derived Fuel Gas - Sulfur Verification:** The owner or operator shall submit documentation of the concentration of the sulfur level 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 307-94 Determination of Sulfur in a Gaseous Matrix.

501.5 **Test Method Conditions:** The owner or operator shall use the test methods listed in Section 503 of this rule to determine compliance with the limitations listed in ~~Section 304,~~ Tables ~~1-3~~ 2 or 3 of this rule. Testing for ~~stationary IC engines~~ stationary RICE shall be completed under steady state conditions at either the maximum operating load or no less than 80% of the rated ~~brake horsepower rating~~ 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 ~~brake horsepower rating~~ rated bhp or under the typical duty cycle or typical operational mode of the engine.

502 **RECORDKEEPING / RECORDS RETENTION:** The owner or operator of ~~any stationary IC engine~~ a stationary RICE subject to this rule shall comply with the following requirements and ~~keep~~ retain records for ~~a period of~~ at least 5 years:

Records Required for a Stationary RICE: An owner or operator of ~~any IC engine~~ a stationary RICE, including emergency engines, ~~prime engines~~ non-emergency engines and ~~low usage engines~~ low usage non-emergency engines, shall keep a record that includes an initial one time entry that lists the particular engine combustion type (compression-ignition or spark-ignition or rich burn, ~~or~~ lean burn); manufacturer; model designation, rated ~~brake horsepower~~ bhp, serial number and where the engine is located on the site.

Monthly Records Required for Non-Emergency Engines: An owner or operator of a ~~prime engine~~ non-emergency engine shall maintain a monthly record for ~~prime engines~~ non-emergency engines which shall include:

a. Hours of operation; and
b. Type of fuel used, and
c. Documentation verifying compliance with sulfur fuel content according to ~~subsection~~ Section 301.1 of this rule.

Annual Records Required for Non-Emergency Engines: An owner or operator of a ~~prime engine~~ non-emergency engine shall maintain an annual record of ~~good combustion procedures according to Section 302.~~ the practices/procedure that are followed in order to comply with Section 302 (Good Combustion Practices/Tuning Procedure for Stationary RICE) of this rule.

Records Required for An Emergency Engine or a Low Usage Non-Emergency Engine: An owner or operator of an emergency engine ~~and~~ or a low usage non-

emergency~~, low usage~~ engine that meets the exemptions listed in Sections 104 and 105 of this rule shall keep an engine record that includes:

a. Monthly rolling twelve month total of hours of operation, including hours of operation for testing, reliability and maintenance; and

b. Fuel type and sulfur content of fuel; and

c. Explanation for the use of the engine if it is used as an emergency engine.

503 COMPLIANCE DETERMINATION-TEST METHODS INCORPORATED BY REFERENCE: The following test methods, as applicable, shall be used to determine compliance with this rule. Alternative test methods may be utilized upon written approval from the Control Officer. The Environmental Protection Agency (EPA) test methods as they exist in the Code of Federal Regulations (CFR) ~~(July 1, 2004)~~ and the American Society of Testing Materials International Methods as listed below, are incorporated by reference in Appendix G of the ~~Maricopa County Rules and Regulations~~ Maricopa County Air Pollution Control Regulations. ~~The~~ When more than one test method is permitted for the same determination, ~~as listed in subsections 503.12, 503.13, 503.14, or 503.15, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation.~~ When more than one test method, as listed in Sections 503.12, 503.13, 503.14, or 503.15 of this rule, 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. Copies of test methods referenced in this section of this rule are available at the Maricopa County ~~Environmental Services Department~~ Air Quality Department, 1001 North Central Avenue, Suite ~~201~~ 125, Phoenix, Arizona, 85004-1942.

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).

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).

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 of Excess Air"), and 3C ("Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources") (40 CFR 60, Appendix A).

EPA Reference Method 4 ("Determination of Moisture Content in Stack Gases") (40 CFR 60, Appendix A).

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

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

EPA Reference Methods 7 ("Determination of Nitrogen Oxide Emissions from Stationary Sources"), 7A ("Determination of Nitrogen Oxide Emissions form Stationary Sources - Ion chromatographic method"), 7B ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Ultraviolet Spectrometry"), 7C ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline- Permanganate 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 Method"), (40 CFR 60, Appendix A).

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

EPA Reference Method 10 ("Determination of Carbon Monoxide from Stationary Sources") (40 CFR 60, Appendix A).

EPA Reference Method 18 ("Measurement of Gaseous Organic Compound Emissions by Gas Chromatography") (40 CFR 60, Appendix A).

EPA Reference Method 25A ("Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer") (40 CFR 60, Appendix A).

~~503.12 American Society of Testing Materials International, ASTM Method D1266-98 ("Standard Test Method for Sulfur in Petroleum Products (Lamp Method)"), 1998.~~

~~503.13~~ **503.12** ~~American Society of Testing Materials International,~~ ASTM ~~Method~~ D2622-98 ~~(~~"Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-RayFluorescenceSpectrometr y"~~),1998.~~

~~503.14~~ **503.13** ~~American Societyof Testing MaterialsInternational,~~ ASTM ~~Method D2880-71~~ D2880-96~~, 78 or 96 (~~"Standard Specification for Gas Turbine Fuel Oils"~~), 1971 or 1978 or 1996.~~

~~503.15~~ **503.14** ~~American Societyof Testing MaterialsInternational,~~ ASTM ~~Method D4294-98~~ D4294-02 or D4294-03 ~~(~~"Standard Test Method for Sulfur in Petroleum Products by Energy-DispersiveX-Ray Fluoresence Spectroscopy"~~)1990 or 1998.~~

~~503.16~~ **503.15** ~~American Societyof Testing MaterialsInternational,~~ ASTM ~~Method~~ D5504-01 or D5504-08 ~~(~~"Standard Test Method for Determination of Sulfur Compoundsin Natural Gas and GaseousFuels byGasChromatograph y and Chemiluminescence~~),~~ ~~2006.~~

504.16 South Coast Air QualityManagemen t District Method 307-94 Determination of Sulfur in a Gaseous Matrix

NOTICE OF PROPOSED RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 336: SURFACE COATING OPERATIONS
PREAMBLE

1. **Rule affected** — **Rulemaking action**
   Rule 336: Surface Coating Operations — Amend
2. **Statutory authority for the rulemaking:**
   Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
   Implementing statute: A.R.S. § 49-112
3. **List of public notices addressing the rulemaking:**
   Notice of Rulemaking Docket Opening: 15 A.A.R. 1704, October 16, 2009
   Notice of Briefing to Maricopa County Manager: May 2015
   Notice of Stakeholder Workshops: June 29, 2015, September 3, 2015, December 17, 2015, and February 18, 2016
4. **The name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name:	Kathleen Sommer or Hether Krause
Address:	Planning and Analysis Division Maricopa County Air Quality Department 1001 N. Central Ave., Suite 595 Phoenix, AZ 85004
Telephone:	(602) 506-6010
Fax:	(602) 506-6179
E-mail:	aqplanning@mail.maricopa.gov

5. **An explanation of the rule, including the department's reasons for initiating the rulemaking:**
   A. **Summary:**

Maricopa County Air Quality Department (department) is proposing to revise Rule 336 (Surface Coating Operations) so that surface coating facilities not regulated by another source-specific County Rule found within the Maricopa County Rules 300 to 359, effectively control VOC emissions. Rule 336 has not been revised since April, 7 1999. The Clean Air Act requires the EPA control VOC emissions because VOCs react in the presence of sunlight to form ground-level ozone, a major component of "smog" which is hazardous to human health and the environment.

Ozone is largely created by a photochemical reaction between nitrogen oxides (NO_x) and VOCs in the presence of sunlight. NO_x and VOCs are called ozone precursors. Ground-level ozone is a common air quality problem in urban areas because ozone precursors are emitted from vehicle exhausts, fuel combustion, and volatile organics used by industries such as those regulated in Rule 336. The Phoenix area, classified as Marginal Nonattainment for ozone as determined by violations of the National Ambient Air Quality Standards (NAAQS), has been reclassified from "marginal" to "moderate" nonattainment for the 2008 eight-hour ozone NAAQS. (C.F.R. August 15, 2015) The department is proposing to revise Rule 336, regulating VOCs, to address the Clean Air Act requirements of the State Implementation Plan (SIP) in response to this higher nonattainment classification.

The Clean Air Act (CAA) section 172(c)(1) requires nonattainment areas, such as Phoenix, to use "reasonably available control measures" (RACM) including "reasonably available control technology" (RACT), to control VOC emissions. Section 182(b)(2)(A) provides that RACT for each category of volatile organic compounds (VOCs) is described in U.S. Environmental Protection Agency (EPA) Control Techniques Guidelines (CTGs). The CTGs are intended to provide State and local air pollution control authorities information that assists in determining VOC RACT from surface coating operations. The EPA defines RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." To attain the required RACT, Maricopa County is proposing to amend Rule 336 and incorporate the five (5) new CTGs for RACT issued by EPA in 2006 through 2008. The CTG documents address the following topics:

Metal Furniture Coatings
Large Appliance Coatings
Miscellaneous Metal and Plastic Parts Paper
Film, and Foil Coatings
Industrial Cleaning Solvents

The proposed amended Rule 336 will incorporate recommendations from these five CTGs. The CTGs address additional VOC Coating limits, mandate the transfer efficiency required for spray equipment to be comparable to the transfer efficiency that is found in a High Pressure, Low-Volume (HVLP) spray gun, and recommend additional work practices to reduce VOC emissions.

In addition, the proposed amendments will correct typographical or other clerical errors; make minor grammatical changes to improve readability or clarity; modify the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or make various other minor changes of a purely editorial nature. As these changes do not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 14 of this notice.

B. Background:

To implement RACT, staff proposed to introduce three new Maricopa County VOC rules and at the same time proposed to revise existing Rule 336. Three workshops were held between 2009 and 2011 to begin this draft rule development. The VOC rule development was postponed until 2015 when the process began again. Starting in 2015, the department held four workshops for this rulemaking project. Each of the four workshops contributed to the current proposed Rule 336; the progression of which is described as follows:

#1 Monday June 29, 2015

Kick-off Workshop: AQ-2015-005-Rule 336 (Surface Coating Operations)

This workshop introduced the proposal to revise Rule 336 (Surface Coating Operations) and include sections in this revised Rule 336 that address three additional VOC categories:

* Pleasure Craft Manufacturing and Repair
* Adhesives and Adhesive Primers
* Polyester Resin Operations

During the first two workshops, surface coating manufacturer and supplier representatives expressed concern about combining the variety of VOC regulations into one rule; they unanimously recommended to divide the VOC regulations into separate rules.

#2 Thursday September 3, 2015

Workshop: AQ-2015-005-Rule 336 (Surface Coating Operations)

This workshop discussed the feasibility of putting all four of these VOC categories into one rule. Stakeholder recommendation for clarity was to make individual rules. The VOC sources have been controlled to date, with the general terms of Rule 330 (Volatile Organic Compounds) which has not been updated since 1996. Rule 330 (Volatile Organic compounds) is a generic VOC Rule which regulates a variety of source-specific facilities.

#3 Thursday December 17, 2015

Workshop: AQ-2015-005-Rule 336 (Surface Coating Operations)

Three separate rules were proposed at this workshop in response to Stakeholder requests:

* Rule 336: Miscellaneous Surface Coating Operations (Including Pleasure Craft Surface Coating)
* New Rule 357: Miscellaneous Industrial Adhesives

* New Rule 356: Polyester Resin Operations

#4 Thursday February 18, 2016

Workshop: AQ-2015-005-Rule 336 (Surface Coating Operations)

The revised Rule 336 (Miscellaneous Surface Coating Operations) was presented. Pleasure Craft Manufacturing and Repair was added as a section in this proposed Rule 336 and the need for two remaining "new" VOC rules was to be further reviewed by department staff. Currently Rule 356 (Adhesives and Adhesive Primers) and Rule 357 (Polyester Resin Operations) are regulated in permits under Rule 330 (Volatile Organic Compounds). The rules are on-hold while the department studies the benefits and need for them.

Suggestions of corrections to rule deficiencies from previous workshops and from the fourth February 18, 2016 workshop have been incorporated into this rulemaking, as well as the issues raised by the national and local regulated communities. These changes include adding, amending, and redefining many of the industry definitions used in the rule tables, as new coating categories are recommended in the CTG; combining or deleting sections; and adding language that clarifies procedures such as spray gun requirements; specifying transfer efficiency required for spray equipment of greater than or equal to 65% and recommending additional work practices to reduce VOC emissions. During this time, several of the stakeholders submitted written comments on the draft Rule 336 that had been posted on the County's web site. The written comments addressed definitions discussed with the regulatory community in the workshops concerning the new coating categories introduced in the draft rule.

The staff has considered all comments received and attempted to update this VOC rule with a business friendly approach to help businesses remain operating without burdensome regulations. Since adding three new VOC rules would bring many facilities under a new level of air quality permitting and inspection process for the first time, the benefits of the additional regulations will require a close review by staff.

C. Issues Raised and Discussed During This Rulemaking Process

Changes proposed in the surface coating limits for Rule 336: This proposed Rule 336 adds more VOC coating categories in the Tables of VOC thresholds, as well as the specific definitions for these new coating categories. Overall, the VOC thresholds for the coating categories found in Rule 336 have remained the same and are not lowered.

Low VOC Usage Surface Coating Facility exemption: Several stakeholders asked to clarify Exemption Section 103.5(b) which addresses the use of VOC coatings exceeding the coating thresholds in the Rule 336 Tables. Clarifying text was added to this exemption: "Low usage of VOC coatings which exceed thresholds for coating categories listed in Tables 336-1 through 336-7 of this Rule 336" are permitted for use if the annual aggregate usage does not exceed 55 gal/yr (208 liters/yr.) at a facility.

Small Surface Coating Source (SSCS) exemption: Stakeholders requested that the current SSCS exemption be retained in the proposed rule. The SSCS exemption is retained in the proposed rule. It will be located in Exemption Section 103.5(c) and defined in Section 282. SSCS is proposed to be modified to exclude the daily limits requirement and a facility that exceeds a 2 ton VOC/year emission limit for processes regulated by this rule may retain the exemption, if the owner or operator agrees in writing to enforceable permit conditions that establishes these or stricter limits.

Are Touch Up and Repair operations exempt from Rule 336? Stakeholders asked to clarify if Touch-up and Repair are exempt or are required to follow the VOC limit found in the Rule 336 Tables. It depends on the substrate, if touch up or repair are exempt operations. "Touch-up and repair coatings" for Plastic Parts Coating are exempt from the VOC limits in the VOC Tables in 336; this is confirmed on page 31 of the CTG. The "Touch-up and Repair" coating thresholds listed in Table 336-1 are coating limits for Metal Parts and Products. "Metal part touch-up and repair coatings" are exempt from the application methods (Section 302 of Rule 336) but are subject to the remaining provisions of this rule.

Demonstration of an HVLP spray-gun equivalent or the Alternative Application Method: Workshop attendees requested clarification of how to demonstrate compliance with the "alternative application method" spray gun. Section 302.1(i) is proposed to be modified to include two alternatives to demonstrate HVLP spray-gun equivalency - any method which achieves a transfer efficiency of greater than or equal to 65% as demonstrated by the following:

(1) Measurement according to Section 504.1(d) of this rule; or

(2) From testing documentation of the spray-gun status provided by the manufacturer.

Three Pleasure Craft Surface Coating limits should be raised: Stakeholder requested that three pleasure craft VOC surface coating limits for Extreme High Gloss Coatings, Finish Primer/Surfacer and Other Substrate Anti-foulant Coating be raised from those limits proposed in the CTG for "Miscellaneous Metal and Plastic Parts Coatings," September, 2008. On a letter dated June 1, 2010, EPA clarified that the RACT recommendations EPA provided in the CTG should be "used by the states to determine what constitutes RACT for VOC for pleasure craft coating operations in their particular ozone nonattainment areas." The department is proposing that the VOC limits in Rule 336, Table 336-7 should be:

Extreme High Gloss Topcoat	600 g VOC/l;
Finish Primer Surfacer;	600 g VOC/l;
Other Substrate Anti-Foulant Coating	400 g VOC/l.

Is the EPA suggested Solvent Cleaning VOC limit of 0.21 lbs. per gallon required? Stakeholders requested clarification in Section 304.5, which describes work practices and VOC solvent cleaners used for Rule 336 coatings. Rule 336 proposes to delete draft Section 304.5 (proposing a solvent cleaning VOC limit that is found in other Maricopa County rules) because surface coating cleaners have their own properties. The cleaning chemicals used in surface coating cleaning operations contain little VOC and therefore generate negligible emissions, as discussed on page 8 of the CTG for Miscellaneous Metal and Plastic Parts Coatings. This VOC limit was deleted and replaced with the alternative requirement retained from current Rule 336 (Section 305.6): "VOC Solvents can be used for cleaning coating application equipment only if spray devices are not used and the same principal solvent is used for cleaning as is used in the coating".

What are the record keeping requirements for an aerosol spray can exemption? Record keeping requirements listed Section 501.1(d) have been clarified to state: Maintain purchase records for aerosol spray-cans, including VOC content of can contents.

Does the exemption of the use of aerosol spray cans contribute to the facility VOC threshold limits? Stakeholders asked for clarification of the exemption of the use of aerosol spray cans application of VOC materials and the contribution to the overall facility VOC usage. Section 103.5(a): Aerosol Spray Can Coating Exemptions applies to any use of non-refillable containers that are less than 22 fluid ounces (0.66 liter) capacity and the VOC usage of this exemption contributes to the 2 tons/yr facility threshold of this rule. Rule 200 (of these rules) states: Emissions at or below 2 tons/yr qualifies as an insignificant activity (Rule 200, Section 200.63). Aerosol spray cans do not qualify as a "trivial activity" as Aerosol Spray Can Coating is "conducted as part of a source's primary business activity" (Rule 200, Section 200.127)

Retain the Coating Limit for "Other Metal Parts and Products": Stakeholders asked to clarify how two lower limit coatings; "One-Component" and "Multi-component" coatings, will replace the general use coating category that currently exists in Rule 336. The two lower limit coatings ("One-Component" and "Multi-Component") are proposed to be retained in Tables 336-1 and 336-3, the coating category for "Other Metal Parts and Products Coating (Air Dried and Baked Limits)"(Section 264). Stakeholders say it is a VOC coating category for miscellaneous non-source specific surface coatings that is used by as much as 40% of the coatings at their operations.

Clarify the coating categories "One-Component" and "Multi-component" coatings: Stakeholders were concerned about using these two general lower limit coatings to replace the general use coating category that currently exists in Rule 336. Draft Rule 336 proposes to delete both the definitions and VOC limits in the Tables for "One-Component" and "Multi-Component" coatings because they are redundant with "Other Metal Parts and Products Coating." These two coating preparations will be regulated within the existing coating category "Other Metal Parts and Products" which are miscellaneous coatings that do not belong to a source specific coating category.

Is an O & M plan required for the spray-gun cleaning machine? Stakeholders asked if an O&M plan is not required for a spray-gun cleaning machine. It is not required and this requirement has been deleted from the proposed rule (previously Section 303.1(g))

Workshop participants requested using either "Usage or Purchase" records for VOC recordkeeping: Propose to change Recordkeeping Section 501.1(b) (in current Rule 336) to Section 501.1(c) in the proposed Rule 336: "Usage or Purchase Records". This proposed recordkeeping section provides less stringent recordkeeping for all owners or operators who use VOC coatings and VOC solvent cleaners, not just for "consistently low users".

Increase overall Emission Control System (ECS) efficiency from 85% to 90%: The Overall ECS control efficiency has been changed to capture at least 90% as per recommended in the CTG: Miscellaneous Metal and Plastic Parts Coatings," September, 2008.

Deletion of the military exemption: Existing Rule 336 contains a military exemption in Section 305.4(f) ; this exemption was placed in the rule for one particular source that requested it when the current rule was drafted in 1999. The CTGs do not contain a military exemption. If the military exemption is allowed to remain in the amended Rule 336, EPA will see this as a relaxation of the CTG. The department researched these types of coatings and found that since 1999 there are new, compliant, low VOC coatings that may function well as a substitute coating. If a source still desires to use a non-compliant coating, the burden of proof is on the source to demonstrate that there are no other compliant coatings that can be used to achieve the desirable effect of the non-compliant coating.

Description of Proposed Amendments:

The amendments being proposed in Rule 336 can be categorized as follows:

* To delete definitions that are already defined in Rule 100
* To delete definitions that are not found in the text of the rule
* To add definitions of different types of coatings listed in the CTGs
* To move the exemptions from Section 300 and relocate them in Section 100
* To amend the VOC emission limitations for surface coatings consistent with the CTGs
* To incorporate the overall ECS control efficiency listed in the CTGs of 90%
* To incorporate the transfer efficiency listed in the CTGs which is the same as the transfer efficiency of a HVLP spray gun.
* To delete the sprayless equipment exemption for vapor pressure limits
* To add new work practices that are listed in the CTG
* To clarify the existing work practices in Section 300, such as labeling and transferring in and out of containers
* To update the Operations & Maintenance (O and M) language in Section 305
* To update the compliance schedule in Section 400
* To streamline the recordkeeping provisions in Section 500
* To update the test methods listed in Section 500
* To correct typographical or other clerical errors.

To delete definitions that are already defined in Rule 100:

Several definitions will be deleted in the proposed Rule 336, because they are contained in Rule 100; these include definitions for non-precursor organic compound (Section 229), organic compounds (Section 230), VOC- borne coatings (Section 253),VOC borne diluents (Section 254), and volatile organic compounds (Section 256).

To delete definitions that are not found in the text of the rule:

Definitions for heat sensitive material (Section 220) and low pressure spray gun (Section 225) will also be deleted, because they no longer appear in the proposed draft Rule 336.

To add definitions of different types of coatings listed in the CTGs:

There are a total of 36 new definitions that are proposed in draft Rule 336 in Section 200. Most of these definitions reflect the addition of new specialty coating limits in the four CTGs such as camouflage coating (Section 205) and can coating (Section 206). The new definitions are all underlined in Section 200 of the proposed Rule 336. The proposed Rule 336 is found in Item 14 of this document.

To move the exemptions from Section 300 to Section 100:

The exemptions in existing Rule 336, Section 300 are being moved to Section 100. In addition, amended text is proposed for Section 103 regarding the need for recordkeeping to prove the total exemption in Section 103.1. Also the marine vessel exterior refinishing exemption that was contained in Section 104.4 will be deleted since the exemption is not in the CTG. Other proposed amendments to Sections 105.2 and 105.3 are the inclusion of a partial exemption for stencil coatings. The stencil coating operations meet the definition of a surface coating operation and are not considered a graphic arts operation. Lastly, North American Industry Classification System (NAICS) instead of Standard Industrial Classification (SIC) will be proposed for Section 105.1(b).

To amend the VOC emission limitations consistent with the CTGs:

Proposed amendments delete Table 1 and replace it with Tables 336-1 – 336-7.

To incorporate the spray efficiency listed in the CTGs:

The proposed amendments in Section 302.1 will remove text from Section 302.4 to Section 302.1. The term "low pressure spray gun" will be deleted and replaced with the following language: "a High Volume Low Pressure (HVLP) spray gun or any other method which is

approved by the Control Officer as having a transfer efficiency equal to greater than the transfer efficiency achieved by an HVLP spray gun."

To incorporate the overall ECS control efficiency listed in the CTGs of 90%:

New text will be added in Section 302.5 requiring an ECS, if an owner or operator is using non-compliant coatings. Text in Section 305.1(b) will be amended to change the control efficiency from 85% to 90%.

To add new work practices that are listed in the CTGs:

Section 304.3 will be amended to add new text on cleaning up spills and Section 304.4 will be amended to add new text on conveyance of VOC-containing material.

To clarify the existing work practices such as labeling and transferring in and out of containers in Section 300:

Section 304.1 will be amended to add additional text describing the labeling of containers. Sections 304.2 and Section 304.5 will be amended by adding text for clarification.

To update the O & M Plan language in Section 305:

Section 305.2 will be amended to add new text on O & M Plans.

To update the compliance schedule in Section 400:

Sections 401, 401.1(b), and 401.2 will be amended to delete outdated compliance dates.

Sections 401.1 and 401.2 will be amended to add text that requires the use of the new VOC emission limits for coatings one year after the date of adoption of the rule and to add text that requires the use of the new type of spray gun for coating no later than one year after the date of adoption of the rule.

Section 401.3 will be amended to add text that requires the use of an ECS no later than six months after the adoption of the rule.

Section 401.4 will be amended to add text that requires dates for compliance with the installation of the ECS and with the O & M Plan requirements no later than one year after the rule is adopted.

To streamline the recordkeeping provisions in Section 500:

Section 501 will be amended to add text to expand the type of documents that are to be kept and to add text to allow submittal of records in electronic or paper format.

Sections 501.1 and 501.1(a) will be amended to eliminate text for clarification and to break down the two Sections (a and b) into different types based upon a two gallon limit of VOC material usage per day.

Sections 501.2 and Section 501.3 will be amended to add text for clarification purposes.

To update the test methods listed in Section 500:

Sections 503.1(a)(1) and (2) will be amended to update the dates and sections of the California rules herein listed.

Section 503.1(e) will be amended to add a new test method that has been approved by the EPA for spray equipment transfer efficiency.

Section 503.2(a) and (b) will be amended to update the dates of the test methods listed.

Section 503.2(c) will be amended to add a new test method from the South Coast Air Quality Management District on spray equipment transfer efficiency.

6. **Demonstration of compliance with A.R.S. § 49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
   - **(a)** Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
   - **(b)** Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.

3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

Revisions to Maricopa County Air Pollution Control Regulation III, Rule 336: (Surface Coating Operations), are necessary to address the EPA designated (69 FR 23858, April 30, 2004) 8-hour ozone non-attainment area within Maricopa County. On June 14, 2005, EPA [70 FR 34362] redesignated the Phoenix metropolitan area to attainment of the 1-hour ozone National Ambient Air Quality Standards (NAAQS) and approved the attainment demonstration and maintenance plan showing maintenance of the 1-hour ozone NAAQS through 2015. The 1-hour ozone NAAQS was revoked by EPA effective June 15, 2005, under the anti-backsliding provisions of the Clean Air Act, Sections 110(1) and 193. Certain control measures developed and implemented for the 1-hour NAAQS were required to remain in place to ensure continued progress toward attainment of the 8-hour NAAQS. In addition, EPA strengthened the air quality standards for ground-level ozone by reducing the ozone level from 0.84 ppm to 0.075 ppm to improve public health protection (73 FR 16436, March 27, 2008). Rule 336 meets A.R.S. § 49-112(A)(1), demonstrating the rule is necessary to address a peculiar local condition, in that Maricopa County fails to meet the 8-hour NAAQS for ozone.

Section 182(b)(2)(A) of the Clean Air Act provides that for certain nonattainment areas. States revise their State Implementation Plans (SIP) to include RACT for each category of volatile organic compound (VOC) sources covered by a Control Techniques Guidelines (CTG) document issued between November 15, 1990 and the date of attainment. EPA issued five revised CTGs that relate to Surface Coating: Control Techniques Guidelines for Paper, Film and Foil Coatings (EPA 453/R-07-003, September 2007), Control Techniques Guidelines for Metal Furniture Coatings (EPA 453/R-07-005, September, 2007), Control Techniques Guidelines for Miscellaneous Metal Parts and Plastic Parts Coatings (EPA-453/R-008-003, September 2008), Control Techniques Guidelines for Large Appliance Coatings (EPA 453/R-07-004, September 2007), and Control Techniques Guidelines for: Industrial Cleaning Solvents (EPA 453/R-06-001, September 2006). Rule 336 meets the requirements of A.R.S,§ 49-112(A)(2)(b), in that Maricopa County is required by federal law to revise existing rules to address RACT for the Surface Coating industry. The department affirms that Rule 336 (Surface Coating Operations) meets the requirements of A.R.S. § 49-112 (A)(1) and A.R.S § 49-112 (A)(2).

7. **Documents and/or studies referenced and/or reviewed for this rulemaking:**

U. S. Environmental Protection Agency, "Control Techniques Guidelines for Large Appliance Coatings," September, 2007,www.epa.gov/ttn/oarpg/t1/ctg/20070928_large_app_ctg.pdf.

U. S. Environmental Protection Agency, "Control Techniques Guidelines for Metal Furniture Coating," July, 2007,www.epa.gov/ttn/oarpg/t1/ctg/ctg_furniture_ctg062807.pdf.

U. S. Environmental Protection Agency, "Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings,"
September,2008,www.epa.gov/ttn/oarpg/t1/ctg/miscmetal_ctg093008.pdf.

U. S. Environmental Protection Agency, "Control Techniques Guidelines for Industrial Cleaning Solvents," September, 2006,www.epa.gov/ttn/oarpg/t1/ctg/indus_clean_solv_09_29_06.pdf.

U. S. Environmental Protection Agency, "Control Techniques Guidelines for Paper, Film and Foil Coatings," September ,2006,www.epa.gov/ttn/oarpg/t1/ctg/20070928_paper_film_ctg.pdf.

Notice of Final Rulemaking, Title 18, Chapter 2. Arizona Administrative Register, Volume 14, Issue 9, July 18, 2008 PP. 2834-2842.

US EPA Internal letter, June 1, 2010: To: Chief, Air Branch Regions I- X: From: Stephen D. Page, Director Office of Air Quality Planning and Standards: Control Technique Guidelines for Miscellaneous Metal and Plastic Part Coatings – Industry Request for Reconsideration

8. **A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**

Not applicable.

9. **The preliminary summary of the economic, small business, and consumer impact:**

The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

An identification of the rulemaking.

This rulemaking is proposing to revise Rule 336 (Surface Coating Operations).

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.

The persons who will be directly affected by and bear the costs of this rulemaking will be facilities in Maricopa County that use VOC coatings listed in Tables 336-1 through 336-7 of the rule that are not more specifically regulated by another source-specific rule within Maricopa County Rules 300 to 359 of Regulation III. Partial exemptions apply to certain coatings, application methods, and for low usage conditions. The department has issued permits to more than 160 facilities that are subject to Rule 336.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**

Because this rulemaking does not impose any new compliance burdens on permitted regulated entities or introduce additional regulatory requirements, the department deemed that none of the revisions have potentially significant economic impacts on permitted sources. It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

The benefits of the rule revision are anticipated to be a result of the following changes:

- To update the definitions;
- To amend the VOC emission limits for surface coatings consistent with the CTGs;
- To extend Rule 336 to include the pleasure craft industry;
- To delete an exemption for the military;
- To incorporate the overall Emission Control System (ECS) control efficiency listed in the CTGs of 90%;
- To incorporate the transfer efficiency listed in the CTGs which is the same as the transfer efficiency of a HVLP spray gun;
- To delete the sprayless equipment exemption for vapor pressure limits;
- To add new work practices that are listed in the CTG and clarify existing work practices;
- To update the Operations & Maintenance (O and M) language;
- To update the compliance schedule;
- To streamline the recordkeeping provisions;
- To update the test methods;
- To correct typographical or other clerical errors.

The sources subject to revised Rule 336 already have permits in which these requirements are addressed. Therefore, this revised rule does not impose new requirements on the permitted facilities, and no costs would be incurred for compliance with the rule revisions.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity and compliance options provided by the Rule 336 revisions will provide a benefit to the regulated and permitted sources; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision will not impose increased monetary or regulatory costs on individuals so regulated.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated.

(a) **An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County that use VOC coatings listed in Tables 336-1 through 336-7 of the rule that are not more specifically regulated by another source specific rule within Maricopa County Rules 300 to 359 of Regulation III. Of the approximately 150 commercial permitted sources covered by the rule, about 90 are small businesses.

(b) **The administrative and other costs required for compliance with the rulemaking.**

This rulemaking updates and clarifies existing rule provisions and definitions to be consistent with federal performance standards; and to reduce confusion and improve understanding and readability. The department considered the implications of the proposed amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**

By correcting and clarifying existing rule provisions and definitions and streamlining recordkeeping provisions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**

This rulemaking does not impose any new compliance burdens on regulated entities that are permitted or introduce additional regulatory requirements and will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated. As such, there are no costs to pass through to consumer, which means there are no impacts on consumers.

A statement of the probable effect on state revenues.

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

10. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:**

Name:	Kathleen Sommer or Hether Krause
Address:	Planning and Analysis Division Maricopa County Air Quality Department 1001 N. Central Ave., Suite 595 Phoenix, AZ 85004
Telephone:	(602) 506-6010
Fax:	(602) 506-6179
E-mail:	aqplanning@mail.maricopa.gov

11. **The time, place and nature of the proceedings for the amendment of the rule:**

Written oral proceeding requests or written comments or both will be accepted until the record is closed on June 13, 2016, 5:00 p.m. Written oral proceeding requests or written comments or both may be mailed, e-mailed, or hand delivered to the department (see Item #4 of this notice). An oral proceeding will be scheduled only upon receipt of a written request before the record is closed on June 13, 2016, 5:00 p.m. Written comments received during the comment period and before the

record is closed on June 13, 2016, 5:00 p.m. will be considered formal comments to the Notice of Proposed Rulemaking and will be responded to in the Notice of Final Rulemaking.

12. **Any other matters prescribed by the statute that are applicable to the specific department or to any specific rule or class of rules:**
Not applicable.

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

Incorporation by Reference:	**Location:**
South Coast Air Quality Management District (SCAQMD) Method 313-91 (February 1997) "Determination of Volatile Organic Compounds (VOC) by Gas Chromatography/ Mass Spectrometry (GC/MS).	Section 503.2(b)
South Coast Air Quality Management District (SCAQMD) (May 24, 1989) "Spray Equipment Transfer Efficiency Test Procedure for Equipment User.	Section 503.2(c)

14. **The full text of the rule follows:**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 336
SURFACE COATING OPERATIONS
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~~Revised 04/07/99~~
~~Revised 09/25/13~~

Revised 07/13/1988; Revised 09/21/1992; Revised 06/19/1996; Revised 04/07/1999; Revised 09/25/2013; **Revised XX/XX/XXXX**

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 ~~coating operations~~ coatings listed in Tables 336-1 through 336-7 of this rule ~~Table 1 of this rule~~ that are not more specifically regulated by another source specific rule within Maricopa County Rules 300 to 359 of Regulation III, ~~Examples of coating operations not regulated by this rule appear subsection 305.~~1 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 ~~Subsections 305.2~~ Section103 ~~through 305.7 set~~ sets forth partial ~~or conditional~~ exemptions for certain materials or uses employed bya surface coating operation subject to this rule.

102.3 This rule is not applicable to coatings havinga VOC content, minus exempt compounds, of less than 0.15 lb VOC/gal (18g/L). nor to solvents having a VOC content of material less than 0.15 lb VOC/gal.

~~102.4~~ **102.3** ~~NSPS & NESHAP:~~ In addition to this rule, facilities may be subject to NewSource PerformanceStandards (NSPS) in Rule360 and/or to National Emission Standards for Hazardous Air Pollutants (NESHAP) in Rule 370 of these ~~Rules and Regulations~~ regulations.

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:** 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. Used on internal combustion engine components that are normally above 250□F (121□C) during use; or

b. Used 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. ~~If substitute compliant coatings are not available and a facility that uses less than 50 gal/yr. of an individual coating category and does not exceed 200 gal/yr total usage of all such coatings.~~ After a sufficient demonstration by the user that no compliant substitute coating exists, a facility 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 and the coatings are approved for use in a Maricopa County Air Pollution Permit.

f. Reflective coating 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 coating:
   (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 Exemptions:** 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 Exemptions:** 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 thresholds for coating categories listed in Tables 336-1 through 336-7 of this Rule, which in aggregate of all formulations do not exceed 55 gal/yr (208 liters) facility-wide. The operator shall update usage records of these coatings at the end of each month of their use, pursuant to Section 501.2 of this rule.

c. **A Small Surface-Coating Source:** A facility that does not have ~~either a 15 lb/day or~~ a 2 ton/year VOC-emission limit in an Air Pollution Permit for processes regulated by this rule may apply to permitting ~~an owner or operator may qualify~~ for ~~the~~ an exemption. ~~if~~ that consists of their agreement ~~s/he agrees in writing~~ to an enforceable permit condition that establishes these or stricter limits.

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 hand-held aerosol cans.

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.

103.6 **Allowance for Restricted Guns:** Spray guns otherwise prohibited by Section 302 of this rule for use with coatings over 2 lbs VOC/gal minus exempt compounds, are exempt from this rule under the following limited conditions:

a. 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

b. To coat the inside of pipes and tubes with a wand-style applicator; or

c. 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.

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 Polyester resin operations (Rule 356).
104.6 Printing and graphic arts coating (Rule 337).
104.7 Semiconductor manufacturing (Rule 338).
104.8 Coating or refinishing a highway vehicle or mobile equipment (Rule 345).
104.9 Coating wood furniture and fixtures (Rule 342).
104.10 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~~ **200.1 ADHESIVE:** A material used for the primary purpose of bonding two or more surfaces together.

200.2 **ADHESION PRIMER:** A coating that is applied to a plastic polymer part to promote the adhesion of a subsequent coating.

~~202~~ ~~AEROSOL CAN: A non-refillable hand-held container from which a product is dispensed by means of pressurized propellant packaged within the container.~~

200.3 **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.

~~203~~ **200.4** **AIR-DRIED COATING:** A coating ~~which is~~ dried by the use of air or forced warm air at temperatures up to and including 200°F (93.3°C).

200.5 **ALTERNATIVE APPLICATION METHODS:** Any other application method that is demonstrated to achieve at least 65 percent transfer efficiency.

200.6 **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).

~~204~~ **200.7** **BAKED COATING:** A coating that is dried or cured in an oven in which the oven temperature exceeds 200°F (93.3°C).

200.8 **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:

200.8.1 Products classified as typewriters under SIC Code 3572;

200.8.2 Products classified as electronic computing devices under SIC Code 3573;

200.8.3 Products classified as calculating and accounting machines under SIC Code 3574;

200.8.4 Products classified as telephone and telegraph equipment under SIC Code 3661;

200.8.5 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.

200.9 **CAMOUFLAGE COATING:** A coating used, principally by the military, to conceal equipment from detection.

~~205~~ **200.10 CAN COATING:** ~~Any~~ 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.

~~206~~ **200.11 CAN PRINTING INK:** A fluid or viscous formulation used in can printing that imparts design, pattern, and/or alphanumeric symbols to a can.

~~207~~ **200.12 CLEAR COAT:** ~~Any~~ A coating ~~which~~ that lacks color or opacity or is transparent.

200.13 COATING APPLICATION EQUIPMENT: Any equipment including but not limited to spray guns, wands, rollers, brushes ~~or any other means~~ used to apply or cover a surface with a coating for either aesthetic, protection or other purpose.

~~208~~ **200.14 COIL COATING:** ~~Any~~ A coating applied to the surface(s) of flat metal sheets or strips that ~~are~~ is formed into rolls or coils not used to make cans.

~~209~~ **200.15 DAY:** A period of 24 consecutive hours beginning at midnight.

200.16 **DIP COATING:** A method of applying a coating to a substrate by submersion into and removal from a coating bath.

200.17 **DRUM COATING:** Coating of a cylindrical metal shipping container larger than 12 gallons capacity but no larger than 110 gallons capacity.

200.18 **ELECTRIC DISSIPATING COATING:** A coating that rapidly dissipates a high-voltage electric charge.

200.19 ELECTRIC INSULATINGVARNISH: Anon-convertible-typecoating applied toelectric motors, components of electric motors, or power transformers, to provide electrical, mechanical, and environmental protection or resistance.

200.20 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.

~~210~~ **200.21 ELECTROSTATIC ~~SPRAY~~/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.

~~211~~ **200.22 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. ~~designed and operated in accordance with good engineering practice to reduce emissions of volatile organic compounds.~~

~~212~~ **200.23 END SEALING COMPOUND:** A compound which is coated onto can ends and functions as a gasket when the end isattache d to thecan.

200.24 **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.

~~213~~ ~~EXEMPT EVAPORATING COMPONENTS (EXEMPT COMPOUNDS): The non-VOC, evaporating portion of a coating formulation; this necessarily includes all non-precursor organic compounds, as well as water and other inorganic liquids and gases.~~

200.25 **EXEMPT ORGANIC COMPOUNDS:** The federally listed non-precursor organic compounds, organic compounds which have been determined to have negligible photochemical reactivity as listed in 40 CFR 51.100(s) and Appendix G of these rules..

~~214~~ **200.26** **EXTERIOR CAN BASECOAT:** ~~Any~~ 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.

200.27 **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.

~~215~~ **200.28** **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). ~~Extreme-performance coatings include but are not limited to, coatings applied to locomotives, railroad cars, farm machinery, plastic, rubber, leather, or glass.~~

~~216~~ **200.29** **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.

~~217~~ **200.30** **FABRIC COATING:** ~~Any~~ A decorative or protective coating or reinforcing material applied either onto or impregnated into textile fabric.

200.31 **FILLER:** A relatively non-adhesive substance added to an adhesive to improve its working properties, permanence, strength, or other qualities.

~~218~~ **200.32** **FILM COATING:** ~~Any~~ 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.

200.33 **FINISH PRIMER/SURFACER:** A coating applied ~~with a wet film thickness of less than 10 mils prior to the application of a topcoat~~ 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.

~~219~~ **200.34** **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.

200.35 **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.

200.36 **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.

200.37 **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.

200.38 **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.

200.39 **HEAT-RESISTANT COATING:** A coating that must withstand a temperature of at least 400°F (204°C) during normal use.

200.40 **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).

200.41 **HIGH BUILD PRIMER/SURFACER:** A coating applied ~~with a wet film thickness of 10 mils or more prior to the application of a topcoat~~ 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.

200.42 **HIGH GLOSS COATING:** A coating that achieves at least 85 percent reflectance on a 60° - meter when tested by ASTM D 523-89.

200.43 **HIGH TEMPERATURE COATING:** A coating that is certified to withstand a temperature of 1000°F (537°C) for 24 hours.

~~220 HEAT SENSITIVE MATERIAL: Materials which cannot consistently be exposed to temperatures greater than 203°F (95°C) without materially affecting desired function, performance, or other characteristics~~

200.44 **HIGH-VOLUME, LOW PRESSURE (HVLP) SPRAY-GUN:** Spray equipment that is permanently labeled as such and used to apply any coating by means of a spray-gun which is designed and operated between 0.1 and 10 pounds per square inch gauge (psig) air atomizing pressure measured dynamically at the center of the air cap and at the air horns.

~~221~~ **200.45 HIGHWAY VEHICLE:** ~~Any~~ 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.

~~222~~ **200.46 INTERIOR BASECOAT:** ~~Any~~ 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.

~~223~~ **200.47 INTERIOR BODY SPRAY:** ~~Any~~ 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.

200.48 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.

~~224~~ **200.49 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.

~~225~~ **200.50 LOW PRESSURE SPRAY GUN:** An air-atomized spray gun that, by design, functions best at tip pressures below 10 psig (516 mm Hg), measured according to Section ~~503.1d-5~~04.1(d) of this rule, and for which the manufacturer makes no claims to the public that the gun can be used effectively above 12 psig (619 mm Hg).

200.51 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.

~~226~~ **200.52 METAL FURNITURE:** ~~Any 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.

200.53 **METALLIC COATING:** A coating that contains more than 5 grams of metal particles per liter of coating as applied.

200.54 **MILITARY SPECIFICATION COATING:** A coating that has a formulation that has been approved by a United States Military Agency for use on military equipment.

~~227 MINUS EXEMPT COMPOUNDS or MINUS EXEMPT EVAPORATING COMPONENTS: See VOC Content Minus Exempt Compounds.~~

~~228~~ **200.55 MOBILE EQUIPMENT:** ~~Any equipment~~ Equipment that is physically capable of being driven or drawn ~~upon~~ on a highway including, but not limited to~~, the following types of equipment~~: 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).

200.56 **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.

200.57 **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.

~~229 ORGANIC COMPOUND: Any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, carbonates, and metallic carbides.~~

200.58 **NON-PRECURSOR ORGANIC COMPOUNDS**: Non-Precursor Organic Compounds are compounds having negligible photochemical reactivity. The list of negligible photochemical reactivity compounds is provided in 40 CFR 51.100(s)(1) and in Appendix G of these rules.

200.59 **OPTICAL COATING:** A coating applied to an optical lens.

~~230~~ **200.60 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.

~~231~~ **200.61** **OVERVARNISH:** ~~Any~~ 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.

200.62 **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.

~~232~~ **200.63** **PAPER COATING:** ~~Any~~ A coating applied on or impregnated into paper, including, but not limited to, adhesive tapes ~~and labels~~, book covers, post cards, office copier paper, and drafting paper ~~and pressure sensitive tapes.~~

~~233~~ **200.64** **PLASTIC:** Substrates ~~containing~~ 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.

200.65 **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.

200.66 **PLEASURE CRAFT COATING:** A marine coating that is applied to or intended by the manufacturer to be applied to pleasure craft.

~~234~~ ~~POLYESTER AND POLYESTER RESIN: A complex, polymeric ester containing difunctional \~~

~~235~~ ~~POLYESTER COMPOSITE: Cured material made of polyester resin with reinforcing material imbedded in it, such as glass fibers.~~

200.67 **PREFABRICATED ARCHITECTURAL COMPONENT COATING:** A coating applied to metal parts and products which are to be used as an architectural structure.

200.68 **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.

200.69 **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.

200.70 **PRETREATMENT WASHPRIMER:** 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.

~~236~~ **200.71** **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.

~~237~~ **200.72** **QUALITY CLASS Q:** ~~Any~~ A system, structure, coating or other component ~~which~~ 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.

~~238~~ ~~REFINISHING: Recoating a used object's surface which arrives at the refinisher with a coating or with a previous coating worn away by use.~~

~~239~~ **200.73** **REPAIR COATING:** A coating ~~coating operation~~ used to recoat the portion of a completed finish that suffered post-production damage at the facility where the finish was applied.

~~240~~ **200.74** **RESTRICTED SPRAY GUN:** ~~Any~~ An air-atomizing spray gun that is not a low pressure spray gun, and any other ~~coating gun~~ spray gun that is not on the list in ~~Section 303.1~~ Section 302 of this rule.

200.75 **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.

~~241~~ **200.76** **SILICONE RELEASE COATING:** ~~Any~~ A resin coating, the majority cured portion of which is silicone resin, having as its primary function the release of food products from metal surfaces such as baking pans.

~~242~~ **200.77** **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 ~~15 pounds (6.8 kg) per day and less than~~ 2 tons/yr (1814 kg) ~~per year~~; as demonstrated by both adequate records of coating and diluent use (~~pursuant~~ according to Section ~~501.2~~ 501.1 of this rule) and a separate tally of the number of days each month ~~that~~ such coating operations occur.

200.78 **SOLAR-ABSORBENT COATING:** A coating with the prime purpose of absorption of solar radiation.

200.79 **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.

~~243~~ ~~STRIPPABLE BOOTHCOATING:Atemporar y coatingtha t isapplie d to spray boothsurfaces to receive the overspray and protect the surfaces, and whichis designed to readily be pulled off the substrate in strips or sheets, and disposed of.~~

~~244~~ **200.80** **SURFACE COATING:** ~~Any~~ A liquid,fluid,o r masticcompositionwhich that is converted toa solid (or semi-solid) protective,decorative,o r adherent film or deposit after applicationas a thin layer.Surface coating isgenerall y distinct and different from impregnation and from applying adhesive for bonding purposes.

~~245~~ **200.81** **SURFACE COATING OPERATION:** Preparation,handling,mixing, and applicationof surface coating, and cleanupofapplicationequipmen t and enclosuresa t a facility wheresurface coating is applied.

200.82 **TEXTURE COATING:** A coating that is applied which, in its finished form, consists of discrete raised spots of thecoating.

~~246~~ **200.83** **THREE-PIECE CANSIDE-SEAM** ~~COAT~~ **COATING:** ~~Any~~ Acoating sprayed ontothe interior and/or exterior ofacan body seam on athree- piececanto protect the exposed metal.

~~247~~ **200.84** **TOPCOAT:** The final, permanent,~~coating formulation~~coatingformulation that ~~completed~~ completes the finish on a surface.

~~248~~ ~~TOTAL VOC VAPORPRESSURE (VOCCOM POSITE PARTIAL PRESSURE):Thesu m of the partial pressures of the compoundsdefine d as VOCs, calculated according to the formula in Section 504 of this rule.~~

~~249~~ **200.85** **TOUCH-UP COATING:** Acoatinguse d tocove r minor coatingimperfections after themain coating operation. Thisincludestouch-upcoatingtha t accompaniesthe purchase of an object already coated with that coating.

200.86 **TRANSFER EFFICIENCY:** The ratioof the weight of coating solids adhering to the part being coated, to the weight ofcoatingsolidsuse d intheapplication processexpresse d as a percentage.

~~250~~ **200.87** **TWO-PIECE CAN EXTERIOR END** ~~COAT~~ **COATING:** ~~Any~~ Acoating applied tothe exterior end of a can to provide protectiontothemetal.

200.88 **VACUUM-METALIZING COATING:** Theundercoa t applied tothe substrate on whichth e metal is deposited or theovercoa t is applied directly to the metal film. Vacuu m metalizing/ physical vapor deposition(PVD) isthe processwhereb y the metal isvaporize d and deposited ina substrate in a vacuum chamber.

~~251~~ ~~VINYL COATING (COATINGONVINYL):An y decorativeo r protective coating or reinforcing coating applied over vinyl coated textilefabrico r vinylsheets.~~

~~252~~ ~~VOC-BORNE COATING: Acoatingtha t containsmoreVOCthanwater, by weight.~~

~~253~~ ~~VOC-BORNE DILUENT: A solvent or other diluent that contains more VOC than water, by weight~~

~~254.2~~ **200.89** **VOCACTUAL:** ~~VOCCONTENTOFMATERIAL(MATERIALVOC-CONTENT) -~~ VOC ~~Actual includes~~ actual is ~~the VOC Content minus~~ the weight of volatile compounds minus the weight of water and minusthe weight ofExemp t Organic Compounds (Section 200.25 of this rule) divided by the total volume of ~~all~~ 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(Section261)an d 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)

~~254~~ **200.90** **VOC CONTENT:** ~~In this rule, VOC content is determined by one of the following two formulas: To determine compliance with the VOC limits in Section 301, of this rule or the 2.0 lb VOC/gal threshold in Section 302 of this rule, use the following formula in Section 255.1. For other purposes, use the formula in Section 255.2:~~ The organic chemicals in a material that have a ~~high~~ vapor pressure at ordinary room temperature. ~~The high~~ 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 or VOC Regulatory.

~~254.1~~ **200.91 VOC REGULATORY:** VOC Content Minus Exempt Compounds ~~(is the same as VOC CONTENT MINUS EXEMPT EVAPORATING COMPONENTS) The VOC content~~ VOC regulatory is 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:

~~VOC Content Minus Exempt Compounds~~ 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: ~~A person~~ An owner or operator shall comply with one of the following for all applications of surface coatings:

301.1 Meet the limits in ~~Table 1~~ Tables 336-1 through 336-7 of this rule. Coating limits are calculated: 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 ~~subsection 306.1~~ Section 305 of this rule when applying a coating that exceeds the VOC limits in ~~Table 1~~ Tables 336-1 through 336-7 of this rule.; ~~or~~ All VOC coatings used that are in excess of the VOC limits in Tables 336-1 through 336-7 of this rule shall be clearly labelled such that coating-operators are informed that an ECS must be used.

301.3 Qualify for an exemption under ~~Section 305~~ Sections 103 or 104 of this rule.

~~TABLE 1~~

~~SURFACECOATINGEMISSIONLIMITS~~

~~TYPE OF SURFACE COATING~~ ~~Column 1~~	~~LIMITS AS APPLIED: VOC content minus exempt compounds (see subsection 255.1)~~ ~~ColumnII~~ ~~lbs/gal~~	~~g/liter~~
~~Can Coating~~		
~~Sheet Basecoat (Exterior and Interior) and Overvarnish~~	~~2.8~~	~~340~~
~~Two-Piece Can Exterior (Basecoat and Overvarnish)~~	~~2.8~~	~~340~~
~~Two and Three-Piece Can Interior Body Spray~~	~~4.2~~	~~510~~
~~Two-Piece Can Exterior End (Spray or Roll Coat)~~	~~4.2~~	~~510~~
~~Three-Piece Can Side-Seam Spray~~	~~5.5~~	~~660~~
~~End Sealing Compound~~	~~3.7~~	~~440~~
~~Can Printing Ink~~	~~2.5~~	~~300~~
~~Coil Coating (any coat)~~	~~2.6~~	~~310~~
~~Metal Furniture Coating~~	~~3.0~~	~~360~~
~~Large Appliance Coating~~	~~2.8~~	~~340~~
~~OTHER METAL PARTS ANDPRODUCTSCOATING (Asdefine d inSection 231)~~		

~~The following includes Non-adhesive Coating, Adhesive, Adhesive Primer, Caulking, and Beaded Sealants:~~		
~~Air-Dried Coating~~	~~3.5~~	~~420~~
~~Baked Coating [above 200_F (93_C)]~~	~~3.0~~	~~360~~
~~Silicone Release Coating: Bake d or Air-Dried~~	~~3.5~~	~~420~~
~~Fabric Coating~~	~~2.9~~	~~350~~
~~Film Coating~~	~~2.9~~	~~350~~
~~COATING PLASTIC PARTS AND PRODUCTS THAT ARE NOT DEFINED AS FLEXIBLE~~	~~3.5~~	~~420~~
~~COATING FLEXIBLE PLASTICPARTSANDPRODUCTS~~		
~~Primer~~	~~4.1~~	~~490~~
~~Color Topcoat~~	~~3.8~~	~~450~~
~~Basecoat/Clear Coat (Combined System) - Limit for either coat~~	~~4.5~~	~~540~~
~~Paper Coating, including Adhesives~~	~~2.9~~	~~350~~
~~Vinyl Coating (Coating on Vinyl)~~	~~3.8~~	~~450~~
~~STRIPPABLE BOOTH COATINGS~~	~~2.0~~	~~240~~

Table 336-1: Coating Limits for Metal Parts and Products

Coating Category	AirDried		Baked	
	g VOC/l	lb VOC/gal	g VOC/l	lbVOC/ gal
Camouflage	420	3.5	420	3.5
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
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
Touch-up	420	3.5	360	3.0
Silicone Release	420	3.5	420	3.5
Solar-Absorbent	420	3.5	360	3.0
Vacuum-Metalizing	420	3.5	420	3.5
Drum Coating, New, Exterio r	340	2.8	340	2.8
Drum Coating, New, Interior	420	3.5	420	3.5
Drum Coating, Reconditioned,Exterio r	420	3.5	420	3.5
Drum Coating, Reconditioned,Interio r	500	4.2	500	4.2
Other Metal Parts and Products Coating				
OTHER METAL PARTS AND PRODUCTS COATING: Includes Non-Adhesive Coating, Caulking, and Beaded Sealants:				
Air Dried	420	3.5		
Baked Coating [above 200_F (93_C)]			360	3.0

Table 336-2: Coating Limits for Can and Coil Coating

Coating Category	g VOC/l	lb VOC/gal
Can Coating		
Sheet Basecoat (Exterior and Interior)an d Overvarnish	340	2.8
Two-Piece Can Exterior (Basecoat and Overvarnish)	340	2.8
Two and Three-Piece Can Interior Body Spray	510	4.2
Two-Piece Can Exterior End (Spray or RollCoat)	510	4.2
Three-Piece Can Side-Seam Spray	660	5.5
End Sealing Compound	440	3.7
Can Printing Ink	300	2.5
Coil Coating (any coat)	310	2.6
Fabric Coating	350	2.9
Film Coating	350	2.9

Table 336-3: Coating Limits for Plastic Parts and Products

Coating Category	g VOC/l	lb VOC/gal
Electric Dissipating Coatings and Shock-FreeCoatin gs	800	6.7
Extreme Performance	420 (2-pack coatings)	3.5 (2-pack coatings)
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
Optical Coatings	800	6.7
Vacuum-Metalizing	800	6.7

Table 336-4: Coating Limits for Business Machine Coatings

Coating Category	g VOC/l	lb VOC/gal
Primer	350	2.9
Topcoat	350	2.9
Texture Coating	350	2.9
Fog Coat	260	2.2
Touch-up	350	2.9
Repair	350	2.9

Table 336-5: Coating Limits for Metal Furniture and Large Appliance Coatings

Coating Category	AirDried		Baked	
	g VOC/l	lbVOC/ gal	g VOC/l	lbVOC/ gal
One-Component	275	2.3	275	2.3
Multi-Component	340	2.8	275	2.3
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
Large Appliances	275	2.3	275	2.3
Metallic	420	3.5	420	3.5
Pretreatment Coating	420	3.5	420	3.5
Refrigerated glass door coatings	--	--	480	4.0
Solar-Absorbent	420	3.5	360	3.0

Table 336-6: Coating Limits for Paper, Film, and Foil Surface Coating

Coating Category	kg/VOC/kg Coating (lb VOC/lb solids)	kg VOC/kg Solids (lb VOC/lb solids)
Pressure Sensitive Tape and Label Surface Coating	0.067	0.20
Paper, Film, and Foil Surface Coating (Not including Pressure Sensitive Tape and Label)	0.08	0.40

Table 336-7: Coating Limits for Pleasure Craft Surface Coating

Coating Category	[Dateo f Adoption]		On and After [Date 12 Months After Date of Adoption]	
	g VOC/l	lbsVOC/ gal	g VOC/l	Lbs VOC/gal
Extreme High Gloss Topcoat	600	5.2	490	4.1
High Gloss Topcoat	420	3.5	420	3.5
Pretreatment Wash Primer	780	6.5	780	6.5
Finish Primer/Surfacer	600	5.2	420	3.5
High Build Primer/Surfacer	340	2.8	340	2.8
Aluminum Substrate Antifoulant Coating	560	4.7	560	4.7
Other Substrate Antifoulant Coating	400	3.4	330	2.7
All other Pleasure craft surface coatings for metal or plastic	420	3.5	420	3.5
Antifouling Sealer/Tie Coat	420	3.5	420	3.5

302 APPLICATION METHODS FOR SURFACE COATINGS:

302.1 ~~A person~~ An owner or operator shall ~~employ~~ 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):

~~302.1~~ **a.** ~~A~~ HVLP Spray- Gun (low pressure spray-gun); ~~or~~

~~302.2~~ **b.** ~~An~~ Electrostatic system; ~~or~~

~~302.3~~ **c.** A system that atomizes principally by hydraulic pressure, including "airless" and "air assisted airless";

~~302.4~~ **d.** ~~HVLP Spray- Gun; Non-atomizing or non-spraying application methods, such as but not limited to dipping, rolling, or brushing; or H~~Hand Application Methods, including but not limited to;

~~e.~~ **(1)** Flow Coat;

~~f.~~ **(2)** Roll Coat;

~~g.~~ **(3)** Dip-Coating;

~~h. Hand Application Methods;~~

~~302.5~~ **e. An Alternative Application Method:** Any method approved by the Administrator ~~of the Federal EPA or the Control Officer~~ as ~~having a transfer efficiency of 65% or greater~~ HVLP-equivalent.

302.2 An owner or operator is allowed to use a device or system other than that described in Section 302.1 of this rule for applications of surface coating containing less than or equal to 2.0 lb VOC/gal (250 g/l).

303 CLEANUP OF APPLICATION EQUIPMENT: ~~A person~~ An owner or operator shall comply with the following when using VOC-containing material to clean application equipment:

~~303.1 Disassemble any spray gun and other application equipment and clean it in:~~

~~a. A container which remains covered at all times, except when the application equipment is being handled in the container, or transferred into or out of the container; or~~

~~b. A commercially-sold gun cleaning machine which shall be operated and maintained as stipulated in the Air Pollution Permit's Operation and Maintenance (O&M) Plan, or in the absence of its mention in the O&M Plan, according to manufacturer's or distributor's instructions.~~

~~303.2 Vapor Pressure Limits: Any person subject to this rule using VOC-solvent to clean coating application equipment shall use only solvent which, as used, has a VOC-vapor pressure below 35 mm Hg at 20° C (68° F), except for sprayless equipment exempted pursuant to subsection~~

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) Shall 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:**

(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.

(2) **Automatic Spray-Gun Cleaning Machine:** An automatic spray-gun cleaning machine shall have a self-covering or enclosing cover feature when not loading or unloading 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** ~~Spray-Gun~~ **Cleaning Machine:** Non-automatic Remote Reservoir ~~Spray-Gun Cleaning Machine~~ Cleaning Machine shall meet all of the following requirements:

(a) Drain solvent cleaner from the sink/work-space ~~quickly~~ into a remote reservoir when work-space is not in use; and

(b) Machine reservoir shall not have cumulative total openings, including the drain opening(s) exceeding two square inches in area. ~~so that the reservoir will not allow VOC vapors to escape to the atmosphere; and~~

(c) ~~Allow a machine design in which~~ 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 ~~including but not limited to paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges;~~

b. If disassembled spray-guns ~~must be~~ are soaked ~~in a vat which~~ 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;

c. **VOC Solvent for Cleanup of Coating Application Equipment:** An owner or operator may choose to use a VOC cleaning solvent for the cleaning of coating application equipment, if such application equipment does not use spray devices and the same principle solvent is used for cleaning as is used in the coating.

d. VOC solvents and cleaners used to clean spray guns must be stored in closed containers when not in use.

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. A person 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 EXEMPTIONS:~~

~~305.1 Categorical Exemptions: This rule does not apply to the following operations:~~

- ~~**a.** Aerospace coating operations (Rule 348).~~
- ~~**b.** Architectural coating, including buildings and erected structures (Rule 335).~~
- ~~**c.** Cleaning: VOC loss from cleaning or stripping a surface for coating or other purpose is regulated by Rule 331.~~
- ~~**d.** Marine vessel exterior refinishing.~~
- ~~**e.** Polyester coatings applied to polyester composites.~~
- ~~**f.** Printing and graphic arts coating (Rule 337).~~
- ~~**g.** Semiconductor manufacturing (Rule 338).~~
- ~~**h.** Coating a highway vehicle or mobile equipment (Rule 345).~~
- ~~**i.** Wood: Coating Wood Furniture (Rule 342); Coating Wood Millwork (Rule 346).~~

~~305.2 Exemptions for Qualified Materials: Rule 336 does not apply to the following materials that meet the specific qualification(s) and limitation(s) set forth herein:~~

- ~~**a.** Leak Preventing Materials: Sealants, adhesives, 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) Used substrates, post manufacture, such as, but not limited to, old joints and seals on pipe and valve assemblies.~~
- ~~**b.** Adhesive Use:~~
  - ~~(1) Adhesive and adhesive primer applications are exempt from this rule, except for the 2 categories that appear in Table 1, namely adhesive materials applied to other metal parts and products (as defined in Section 231), and adhesives used in paper coating (as defined in Section 233).~~
  - ~~(2) Any adhesive exempted by this Rule 336 and to which no other rule in Regulation III specifically applies shall comply with the provisions of Rule 330 (Volatile Organic Compounds) of these Rules & Regulations.~~
- ~~**c.** 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 as defined in Section 231 of this rule, or in the manufacturing of cans.~~
- ~~**d.** Extreme Performance Coatings: Extreme performance coatings are exempt from the VOC limits of Table 1 when used under the following conditions:~~
  - ~~(1) Used on internal combustion engine components that are normally above 250°F (121°C) during use; or~~
  - ~~(2) Used at temperatures above 250°F (121°C) on items that are both included under SIC (Standard Industrial Classification, 1987) codes 3661, 3663, 3669, 3677, 3678, 3679, or 3769 and are electronic products in space vehicles and/or are communications equipment. The US Government Printing Office "Standard Industrial Classification Manual, 1987" (and no future editions) is incorporated by reference and is on file at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, Arizona 85004.~~

~~305.3 ECS Use In Lieu Of Equipment/Practice: In lieu of meeting an equipment or work practice standard within Sections 302, 303, or 304, an owner or operator is allowed~~

~~to instead use an ECS that has a capture efficiency not less than 90% and meets all ECS requirements in Section 306.~~

~~305.4 Spray Gun And VOC Limit Exemptions: The following are exempt from subsection 301.1, subsection 301.2, and Section 302 of this rule:~~

- ~~**a.** Coating with an aerosol can.~~
- ~~**b.** Touch up or repair coating operations as defined in Sections 250 and 240.~~
- ~~**c.** Low usage coatings which in aggregate of all formulations do not exceed 55 gallons (208 liters) per year facility wide if the operator updates usage records of these coatings on each day of their use, pursuant to subsection 501.2.~~
- ~~**d.** A small surface coating source (SSCS) as defined in Section 243. However, once a small surface coating source exceeds either the 15 lb per day or the 2 tons per year limits that are required to maintain SSCS status that facility is permanently subject to the limits of subsection 301.1, subsection 301.2, and Section 302, with the following exception:~~
  - ~~(1) For such a facility that does not have either a 15 lb/day or a 2 ton/year VOC emission limit in an Air Pollution Permit for processes regulated by this rule, an owner or operator may retain the exemption if s/he agrees in writing to enforceable permit conditions that establish these or stricter limits.~~
  - ~~(2) However, a facility that violates its permit limit of either 15 lbs VOC/day or 2 tons VOC/yr. for coating process regulated by this Rule 336 is permanently subject to the limits of subsections 301.1 and 301.2, and Section 302.~~
- ~~**e.** A Quality Class Q protective coating that is used on equipment, structures, and/or components within a containment facility of a nuclear power plant and is approved in accordance with either ANSI standards N101.2 and N101.4 or with ASTM Standards D3911 and D3843.~~
- ~~**f.** 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.~~

~~305.5 Special Facilities/Operations:~~

- ~~**a.** Silicone Release Coatings: Silicone release coating operations controlled by an ECS pursuant to subsection 301.2 are exempt from the 85 percent overall control efficiency requirement if the ECS demonstrates at least 70 percent overall control and the coating is applied with a liquid seal air spray system.~~
- ~~**b.** Bonding Impact Resistant Rubber Lining To Metal: An adhesive and an adhesive primer are exempt from Table 1 limits, but shall not have a VOC content of material exceeding 850 grams of VOC per liter (7.1 lb/gal), if such adhesive is used to bond sheets/strips of rubber to metal equipment so that such rubber sheathing directly contacts material received by the metal and so protects the metal. This exception does not apply to any other situations where adhesives are used to bond rubber to metal.~~

~~305.6 Exemption Of Coating Applicator Cleanup: A person is allowed to use solvent that has at 20° C (68° F) a total VOC vapor pressure above 35 mm Hg for cleaning coating application equipment, but only if such application equipment does not use spray devices and the same principal solvent is used for cleaning as is used in the coating.~~

~~305.7 Low Usage Allowance for Restricted Guns: A person may employ spray guns otherwise prohibited by Section 302 for use with coatings over 2 lb VOC /gal under the following limited conditions:~~

- ~~**a.** If VOC emissions from the finishing application station, are captured and directed to an ECS complying with the provisions of Section 306.~~
- ~~**b.** To coat the inside of pipes and tubes with a wand style applicator.~~
- ~~**c.** Using an airbrush or other small gun that has a reservoir capacity not exceeding 250 cc (8.8 fluid ounces) and is used solely for detailing, lettering, touchup, and/or repair.~~

~~306~~ **305** ~~REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND~~ **EMISSION CONTROL SYSTEM (ECS)** ~~MONITORING EQUIPMENT~~ **REQUIREMENTS:**

~~306.1~~ **305.1** **ECS Control Efficiencies:** To meet the requirements pursuant to ~~subsection 301.2, subsection 305.3, or subsection 305.7,~~ Section 301.2 of this rule, an ECS shall be operated as follows:

a. Overall ECS Efficiency: For a facility that choses to use add-on controls instead of low VOC content coatings and specified application methods, a 90 percent overall VOC control efficiency is required. ~~Overall, the ECS~~

~~shall prevent at least 85% of the mass of the VOC emitted by each coating or process so controlled from entering the atmosphere except as successfully controlled pursuant to the alternative in subsection 306.1c(2).~~

b. Capture and Control ~~Efficiencies~~ Efficiency:

~~(1) For an ECS used pursuant to subsection 301.2 and/or subsection 305.7, capture shall be at least 87%.~~

~~(2) For an ECS used pursuant to subsection 305.3, capture shall be at least 90%.~~

~~c. Control Efficiency Of The Emissions Processing Subsystem:~~

~~(1) The emissions processing subsystem of the ECS shall reduce the mass of VOC entering it by at least 90 percent; or~~

The overall efficiency of an ECS is equal to the capture efficiency x (multiplied by) control efficiency so any combination of capture and controls that achieves this overall control is compliant. For example, to achieve an overall 90% VOC control efficiency:
Minimum capture efficiency required is 95%; and
Minimum control efficiency required is also 95%.
Then the overall efficiency of ECS would be 0.95*0.95 = 0.9025/100 = 90%.

~~(2)~~ **c. Alternative for Very Dilute Input**: For VOC input-concentrations of less than 100 ppm (as carbon) at the inlet of the ECS emissions processing subsystem, an ECS' VOC processing subsystem also satisfies the processor efficiency requirements of this rule if:

(a) The VOC output is ~~consistently~~ less than 20 mg VOC/~~M3~~ m^3 ~~(~~as carbon) adjusted to standard conditions; and

(b) The ECS consistently shows an overall control efficiency of at least ~~85%~~ 90% when tested pursuant to ~~subsection 503.3~~ Section 504.1(b) of this rule, at VOC input-concentrations exceeding 100 ppm (as carbon).

~~d. Coating that exceeds the applicable VOC limits in Table 1 shall be clearly identified such that coating operators are informed an ECS must be used~~.

~~306.2~~ **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 ~~that are~~ used pursuant to this ~~Rule 336~~ 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 336~~ rule.

c. The owner or operator shall comply with all ~~the~~ identified actions and schedules provided in each O&M Plan.

~~306.3~~ **305.3 Providing and Maintaining ECSMonitorin g Devices:** Any ~~person~~ owner or operator incinerating, adsorbing, or otherwise processingVOC emissions pursuant to this rule shall provide, properlyinstall and maintain in calibration, in good working order ~~and in operation,~~ devices described in the facility's O&M Plan that indicate temperatures, pressures, ratesofflow, or other operating conditions necessary to determine if air pollution control equipment is functioning properlyan d is properly maintained. Records shall be k e ppursuant to Section 502 which demonstrate that the ECS meets the overall control standard required ~~by subsection 306.1~~ Section305.1 of this rule and isoperate d inaccordance with the equipment manufacturer'sspecifications.

~~306.4~~ **305.4 O&M Plan Responsibility:** An owner or operator of a facility that is required to have an O&M Plan pursuant to ~~subsection306.2~~ Section305.2 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. ~~If revisionsto the plan have been submitted and not yet been approved by t h e Control Officer,thenanowne r or operator shallcompl y with the most recent O&M plan on file at MaricopaCount y Air Quality Department.~~

305.5 Operation and Maintenance (O&M) Plan Contents for an ECS:

a. 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 manufacturer's equipment identification number is unknown; and
(4) Information required by Sections ~~501~~ 502 and 503 of this rule.

b. **Control Officer Modifications to Plan**: After discussion with the owner or operator, the Control Officer may modify the plan in writing prior to approval of the initial O&M Plan. An owner or operator shall then comply with the ~~plan~~ modified plan.

c. **Deficient Plan**: The owner or operator 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 such owner or operator is preparing revisions to the O&M Plan, such owner or operator shall still comply with all requirements of this rule.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE VOC LIMITS:

Emission Control System (ECS): ~~By August 1, 1999:~~ An owner or operator installing an ECS shall:

a. Implement ~~All~~ all new recordkeeping provisions ~~shall be in effect~~, including ~~subsections 501.1c and 501.2a~~ Section 502 of this rule.

b. Announce the ~~The~~ intention to use an ~~Emission Control System (~~ ECS) ~~shall be announced~~ to the Control Officer in writing if:-

~~(1) The~~ the ECS is used as an alternative to meeting the ~~spray-gun provisions~~ VOC limits of Section ~~302~~ 301 of this rule. ~~or~~

~~(2) The ECS is used as an alternative to meeting the gun cleaning machine provisions of Section 303.~~

~~401.3~~ **c.** One year after rule adoption of this rule, the ECS announced pursuant to Section 401.1(b) shall be in continuous use.

~~401.2 Spray Guns: By November 1, 1999 , the following shall be in continuing use:~~

~~a. Spray guns required pursuant to Section 302;~~

~~b. Cleaning solvent(s) having the required vapor pressure pursuant to Section 303, and the data sheet(s) confirming the vapor pressure.~~

~~401.3 By May 1, 2000, the ECS announced pursuant to subsection 401.1b shall be in continuing use.~~

401.2 VOC limits and Rule Requirements: Upon adoption of this rule, the owner or operator shall discontinue shelf purchase of materials that are non-compliant with Section 301.1 of this rule. The owner or operator has up to [Date 6 Months After Rule Adoption] 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 [Date 6 Months After Rule Adoption].

402 COMPLIANCE SCHEDULE O&M PLAN:

O&M Plans for ECS equipment subject to this rule shall be revised /updated by [Date 3 Months After Rule Adoption].

The Control Officer shall take final action on an O&M Plan revision/update to address the newly amended provisions of this rule within thirty calendar days of the filing of the complete O&M Plan revision/update. The Control Officer shall notify the applicant in writing of approval or denial.

SECTION 500 – MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING: ~~Any person~~ The owner or operator ~~subject to this rule~~ shall comply with the following recordkeeping requirements: ~~of subsections 501.1 and 501.2 that apply to materials regulated by this rule.~~

~~The type and amount used of each VOC-containing coating which is regulated by name or type in Tables 336-1 through 336-7 of this rule, and update each VOC-~~

~~containing material, related to surface coating, that is not addressed by these tables. This includes, but is not limited to, thinners, surfacers, and diluents.~~

501.1 Records shall be retained for five years and shall be made available to the Control Officer within five business days, upon request.

~~501.1~~ **501.2 Current Lists:**

~~a.~~ Maintain a current list of coatings, ~~adhesives, reducers, thinners, gun cleaning materials, additives, and any~~ or any other VOC-containing materials regulated by this rule (VOC regulatory). This list shall: ~~give the~~

a. ~~VOC content of material for each as received (before thinning). A complete, neat assemblage of this data meets the requirements for a list~~. Express VOC content in ~~1 of 3~~ one of the following forms:

(1) ~~pounds~~Pounds VOC per gallon,~~;~~

(2) ~~grams~~Grams VOC per liter,~~;~~ or

(3) The percent VOC by weight along with the specific gravity or density (two numbers are required).

b. An owner operator using any VOC coating subject to Section 301 of this rule shall have on site the written value of the VOC coating, in one of the following forms:

(1) A manufacturer's technical data sheet;

(2) ~~A manufacturer's safety data sheet (SDS or MSDS); or~~

(3) Actual test results.

~~b. Less Stringent Recordkeeping for Consistently Low Users: An operator of a facility that always uses less than 2 gallons per day total of thinner and coating (listed in Table 1), meets the listing and recording requirements of subsections 501.1(a), 501.1(c), and 501.2 of this rule if:~~

~~(1) All purchase receipts/invoices of VOC-containing material that is regulated by this rule for the most recent 12 months are kept together; and~~

~~(2) Current data sheets show the VOC content of material for every VOC containing substance currently used that is regulated by this rule.~~

c. **Usage or Purchase Records:**

(1) **Monthly:** Records ~~of~~ the amount of VOC ~~coatings~~ materials purchased or used ~~shall be updated~~ by the end of month for the previous month. ~~Show the type and amount of each make-up (as described in Section 501.3 of this rule) and all other VOC cleaners or solvents to which this rule is applicable.~~ 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 (spray booths).

(2) **Annually:**

(a) **Low VOC Coatings:** Use of low VOC coatings shall be updated annually.

(b) **Low-VOC Cleaning Solvent:** 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.

(3) **Grouping by VOC Content:** For purposes of recording usage, an 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 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 10th of a pound of VOC per gallon of material, or to the nearest gram VOC per liter of material.

~~e.~~ **d. Facilities that Are Not Small Surface-Coating Sources:** Facilities that are not small surface-coating sources shall ~~do the following: Coatings: For allcoatings~~ (except thoserecorded under ~~the subsection305.4(e)~~ Section 103.6(c) of this rule, make the following listings for all coatings ~~and adhesives~~ that have VOC limits listed in ~~Table 1~~ Tables 336-1 through336-7 of this rule:

~~(a)~~ **(1) VOC Before Reducing:** The VOC content of each coating as received, minus exempt compounds. (VOC Regulatory: This figure is sometimes called the "EPA Method 24" VOC content on manufacturer's data sheets). If the coating is a multi-part coating, list the manufacturer's final VOC content which the manufacturer states the coating will have once you have mixed all the necessary parts together in the proportions specified by the manufacturer.

~~(b)~~ **(2) List Maximum VOC Content of Coating As Applied:** For each coating that ~~you thin/reduce or add any~~ is thinned/reduced or additive is added to, record in a permanent log ~~either of the following:~~ 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:

~~(i)~~ **(a)** The maximum number of fluid ounces thinner/reducer ~~that you ever~~ added to a gallon of unreduced coating (or maximum g/liter), and the maximum fluid ounces of every other additive ~~you mix~~ mixed into a gallon of the coating; or

~~(ii)~~ **(b)** The VOC content of the coating, after adding the maximum amount of thinner/reducer and other additives ~~that you would ever add,~~ added as determined by the formula in ~~subsection 255.1~~ the definition of VOC Regulatory in this rule.

c. Aerosol Spray Cans: Maintain purchase records for aerosol spray cans, including VOC content.

~~(2) Applicator Cleanup Solvent: Have a hardcopy of the VOC vapor pressure (VP) at 20°C (68°F) of solvent(s) used to clean spray guns, hoses, reservoirs, and any other coating application equipment. Any one of the following ways of providing the VP data is sufficient:~~

~~(a) A current manufacturer's technical data sheet;~~

~~(b) A current manufacturer's safety data sheet (MSDS);~~

~~(c) Actual test results; or~~

~~(d) A letter signed by an official or lab manager of the supplying facility.~~

~~Frequency of Updating Usage or Purchase Records: Update your records, showing the type and amount used of each VOC-containing coating or adhesive which is regulated by name or type in Table 1, and update each VOC-containing material, related to surface coating, that is not addressed by Table 1. This includes, but is not limited to, thinners, surfacers, and diluents. Maintain records according to the following schedule:~~

~~a. Small Surface Coating Sources: Small surface coating sources shall update each month's records of coating use by the end of the following month.~~

~~b. All Other Sources: For a source that does not meet the definition of small surface coating source,~~

~~(1) Monthly: Monthly update records of each coating used that complies with the VOC limits in Table 1. Complete a month's update by the end of the following month.~~

~~(2) Daily: Daily update the usage of each coating that exceeds its limits in Table 1, including coating exempted by subsection 305.4c.~~

~~Grouping By VOC Content: For purposes of recording usage, coatings and adhesives that are in the same category in Table 1, and have similar VOC content, may be recorded under a name that includes the category name. The highest VOC content among the members of that grouping shall be assigned to that grouping, rounded to the nearest 10th of a pound. To identify what products belong within each group, after each group name and the group's VOC content of material must appear the name of each product in the group and its VOC content of material. For example: For flexible plastic parts, you use 20 gallons of primer that has 3.04 lb VOC/gal., 30 gallons of primer having 3.14 lb VOC/gal., and 40 gallons of primer having 2.89 lb VOC/gal. You may record usage as 90 gallons of flexible plastic primer containing 3.1 lb VOC/gal. If grams VOC per liter is used to record VOC content, round off to the nearest whole number of grams.~~

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, ~~an~~ the owner or operator ~~of the facility~~ 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. Record the amount and VOC content of coating, the amount of catalyst/hardener, and the amounts of solvent, reducer, and diluent used that were subject to ECS control pursuant to this Rule 336; and~~

~~b. Make a permanent record of the operating parameters of the key systems as required by the O&M Plan; and~~

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.

~~c.~~ **502.3** For each day or period the O & M Plan requires maintenance, the owner or operator shall ~~Make~~ make a permanent record of the maintenance actions, ~~t~~aken within 24 hours of the ~~action's~~ maintenance completion. ~~for each day or period in which the O&M Plan requires that maintenance be done.~~

~~d.~~ **502.4** Corrective action taken, if any.

~~502.2~~ **502.5** An explanation shall be entered for scheduled maintenance that is not performed during the period designated for it in the O&M Plan.

~~503~~ **504 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.~~

504.1 Compliance Determination: The following means shall be used to determine compliance with this rule. 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.

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 ~~subsection 503.2f~~ Sections 504.2(f) of this rule (BAAQMD Method 31 [April 15, 1992]) or ~~503.2g~~ 504.2(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 ~~subsection 503.2c~~ Sections 504.2(c) (EPA Method 24), ~~503.2f~~ 504.2(f) (BAAQMD Method 31 [April 15, 1992]) or ~~503.2g~~ 504.2(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 ~~503.1a~~ Section 504.1(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 ~~503.1b~~ Section 504.1(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 ~~subsection 503.2b~~ Section 504.2(b) of this rule, or EPA Method 25 and its submethod, referred to in ~~subsection 503.2d~~. Section 504.2(d) of this rule.

c. Capture efficiency of an ECS shall be determined either by the methods in ~~503.2e~~ Section 504.2(e) of this rule (EPA Method 204 and its submethods), or by using mass balance calculation methods in concert with the methods in ~~503.2a~~ Section 504.2(a) of this rule (EPA Methods 2, 2a, 2c, and 2d).

d. Measurement of air pressure at the center of the spray gun tip ~~and air horns~~ of an air-atomizing spray gun ~~(reference subsection 302.1: Section 225)~~ 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).

504.2 Compliance Determination-Test Methods ~~Adopted~~ Incorporated by Reference: The following test methods, as applicable, shall be used to determine compliance with this rule. Alternative test methods may be utilized upon written approval from the Control Officer. The EPA test methods as they exist in the Code of Federal Regulations (CFR) ~~(July 1, 1998)~~, as listed below, are adopted by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. ~~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 503~~ section are available at the Maricopa County Air Quality Department, 1001 N. Central ~~Ave.~~ Avenue, Suite 125, Phoenix, AZ, 85004. 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.

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).

504.3 Test Methods for ECS: For coatings~~/adhesives~~ controlled pursuant to ~~subsection 302.1~~ or ~~subsection~~ Section ~~305.3~~ 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 ~~subsection 503.3(c)~~ Section 504.3(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).

~~504 FORMULA FOR TOTAL VOC VAPOR PRESSURE: Equivalent to: VOC COMPOSITE PARTIAL PRESSURE. Reference subsection 303.2~~

~~$$PP_c = \frac{\sum_{i=1}^{n} W_i VP_i MW_i}{W_w + \sum_{j=1}^{m} W_{ej} + \sum_{i=1}^{n} W_i}$$~~

~~$$\frac{W_w}{18} \sum_{i=1}^{m} \frac{W_{ej}}{MW_{ej}} \sum_{i=1}^{n} \frac{W_i}{MW_i}$$~~

~~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_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~~

~~MW_{ej} = 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~~

NOTICE OF PROPOSED RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 342: COATING WOOD FURNITURE AND FIXTURES
PREAMBLE

1. **Rule affected** — **Rulemaking action**

Rule 342: Coating Wood Furniture and Fixtures — Amend

2. **Statutory authority for the rulemaking:**

Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. **List of public notices addressing the rulemaking:**

Notice of Briefing To Maricopa County Manager: May 2015
Notice of Stakeholder Workshops: August 3, 2015, December 17, 2015, February 9, 2016

4. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name: Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, Arizona 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

5. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary: Rule 342 (Coating Wood Furniture and Fixtures) limits the emission of volatile organic compounds (VOCs) from the surface preparation and coating of wood furniture and fixtures. Revisions to Rule 342 are being proposed to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). Rule 342 revisions will include Reasonably Available Control Technology (RACT) for VOCs.

The Maricopa County Air Quality Department (department) is proposing to:

* Add or clarify Rule 342 text in order to meet the Control Techniques Guideline (CTG) for this rule – "Control of Volatile Organic Compound Emissions From Wood Furniture Manufacturing Operations", April 1996

* Move exemptions from Section 307 to Section 103 in Rule 342
* Delete “red” and “green” gun tagging requirements throughout Rule 342

* Add or revise definitions found in Section 200
* Revise Section 300 to include the redesign of the table in Section 301 for easier reading and the clarification of the use of spray guns and the handling and disposal of VOC-containing materials
* Add VOC leak detection and repair requirements in Sections 300 and 500 to meet CTG and RACT requirements
* Revise the compliance schedule in Section 400
* Add annual operator training requirements to Section 400
* Revise the finishing material list in Section 500
* Add recordkeeping requirements for monthly VOC leak detection inspection and repair and annual operator training in Section 500

In addition, the proposed amendments will correct typographical or other clerical errors; make minor grammatical changes to improve readability or clarity; modify the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or make various other minor changes of a purely editorial nature. As these changes do not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 14 of this notice.

Background:

The Clean Air Act Amendments (CAAA) of 1990 require ozone nonattainment areas to implement reasonably available control technology (RACT) to control volatile organic compound (VOC) emissions. This RACT determination for the associated industry is to be incorporated into the state implementation plan (SIP). RACT is defined by the United States Environmental Protection Agency (EPA) as "The lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." (44 FR53761, September 17, 1979) To assist state and local agencies in determining RACT, the EPA issues Control Techniques Guidelines (CTG) for specific sources. The CTG describes the "presumptive norm" for RACT and includes a review of current knowledge, technology and costs of a variety of emission control techniques. These guidelines provide state and local environmental agencies a guide in establishing reasonably available control technology (RACT) regulations for local wood furniture finishing operations. The state or local agency can then use the presumptive norm for RACT or develop more stringent measures to meet the established ozone standards.

In 1989, the EPA began the process of establishing the CTG presumptive norm for the wood furniture industry. Drafts of a CTG were presented in November 1991 to the National Air Pollution Control Techniques Advisory Committee (NAPCTAC) without a RACT determination for the wood furniture industry.

The wood furniture industry started to develop its own report in early 1991. This report evaluated a variety of emission control technologies for their technical feasibility and associated cost. The report also included "an extensive analysis of the economic impacts of the control technologies..."[1] (page 1-3). The industry report did not include any RACT recommendations.

During this same time, the EPA began work on a national emission standard for hazardous air pollutants (NESHAP) for the wood furniture industry. The NESHAP establishes limits for hazardous air pollutants (HAPs). Because the CTG document was further along in the development than the NESHAP, industry was concerned they would be required to install control technologies to meet the CTG then later when the NESHAP was promulgated, have to invest again in different technologies. To address this issue, the EPA and industry agreed establish a committee and develop both the CTG and NESHAP through regulatory negotiation (58 FR 34011, June 23, 1993). In November 1994, the committee reached consensus on the CTG and NESHAP framework and principles. The EPA issued the CTG for the wood finishing industry on May 20, 1996 (60 FR 25223).

The department began the rulemaking process for new Rule 342 (Coating Wood Furniture and Fixtures) during the same time period as the EPA was developing the CTG. Rule 342 was proposed to apply "...to any facility applying finishing material to furniture or fixtures made of wood or wood-derived material."[2] The rulemaking included VOC limits for the maximum concentration of VOC for various sealers and topcoats; emission control system (ECS) requirements; requirements for the use of various types of spray guns; and compliance options for small sources. On February 15, 1995, the department submitted Rule 342 to the Maricopa County Board of Supervisors (Board) for adoption. Stakeholders raised objection to the

proposed rule because the option of meeting VOC limits through the use of averaging had been omitted from the proposed rule. The EPA was still in the process of drafting the CTG so no final determination had been made at the federal level concerning the averaging provision of the CTG. The department stated that the averaging provisions had been withdrawn from the draft rule because the department could not, at that time, demonstrate that the averaging provisions would meet the proposed VOC limits. The Board voted to continue Rule 342 to allow the department and Stakeholders to reach an agreement on the inclusion of the averaging provisions.[3]

The department and Stakeholders worked together to revise the draft Rule 342. On April 3, 1996, the Board again conducted a public hearing on the revised draft Rule 342. There were no objections to the proposed rule and the Board unanimously approved Rule 342, effective April 3, 1996.[4]

Additional alternative provisions were proposed to Rule 342. These included the proposed additions of separate appendices for: small emitters of VOC; and ECS requirements. Additional proposed revisions included an optional allowance of up to 5% of total coating to be applied by a conventional spray gun; recordkeeping formatting; clarification and addition of definitions; and use of colored tags on guns spraying higher VOC coating material.[5] The Board unanimously approved the additional proposed revisions for Rule 342 on November 20, 1996.[6]

Rule 342 remained unchanged until 2013 when the department opened the rule for a "limited scope" rulemaking. This limited scope revision provided the means for the department to streamline the approval of updates to the EPA definition of VOC to a consistent definition of VOC and "non-precursor organic compounds." In addition, the 2013 rule revision allows businesses to use a wider range of materials, thus leveling the playing field for companies within Maricopa County with those operating in other jurisdictions.[7]

As of October 2015, there were eight-two (82) permits issued by Maricopa County Air Quality that include Rule 342 requirements[8]. Three permits are Title V sources, but not necessarily Title V for VOC emissions from wood finishing only. Fifteen (15) permits are general woodworking permits. The remainder of the facilities have a Non-Title V permit. Some of these Non-Title V permitted facilities may be "synthetic minors" meaning the facility has accepted an emission limit below the Title V threshold. The Non-Title V permittees may or may not be permitted with the primary process being wood finishing.

Issues Raised and Discussed During this Rulemaking Process:

The department held three Stakeholder workshops: August 3, 2015, December 17, 2015, and February 9, 2016. Stakeholders included representatives from AF Lorts Company, AG Layne, American Coatings Association, Andrews Environmental Management, LLC, Copperstate Cabinet, Crown Custom Millwork, Geosyntec Consultants, Legends Furniture Company, Oak Canyon Manufacturing, Inc, Oakcraft, Inc, Ping, RPM Wood Finishes Group, Ryley Carlock and Applewhite Law Firm, SATA GmbH & Co. KG, The Sherwin-Williams Company, SWCA Environmental Consultants, Trendwood, Woodcase Fine Cabinetry, Inc, Wurth Louis, and the EPA.

Workshop discussions included the applicability of RACT to the current rule, the economic impact a proposed reduction of VOC limits would have on the industry, the proposed addition of operator training and recordkeeping, the proposed addition of leak detection and recordkeeping, and alternative gun technologies now available.

RACT Issues Raised and Discussed

VOC EMISSION LIMITS

The department originally proposed to reduce the VOC emission limits for all coating types. Stakeholders said that the proposed reduction in the VOC limits goes beyond the established RACT requirements. The American Coatings Association responded:

> The current [original department proposed VOC limit] 275 g/l VOC industrial wood coating formulation technology that was developed for use in southern California for industrial customers could not be applied in the even hotter and dryer climate in Arizona. The majority of manufacturers and shops do not have air conditioning or operate in temperature and humidity controlled environments. Solventborne 275 g/l coatings rely on acetone that volatilize too quickly in the hot and dry environment of AZ and therefore does not spray well and produces an aesthetically unacceptable finish. Reformulating with other exempt compounds will increase the cost of the coatings, since these cost more than acetone. In addition, waterborne coatings that meet the 275 g/l limits have similar aesthetic issues.

> Also due to the Maricopa County's hot desert climate, we suggest that there are application difficulties with the [department proposed] 120 g/L (material) VOC Low-Solids Stain and Low-Solids Toner and Washcoat. Traditional High Solids Stain at <350 g/L VOC has not emerged as an acceptable alternative in other jurisdictions because the time required for curing before application of sealer and/or topcoat is generally considered excessive.[9]

Stakeholders requested that the department conduct more research to determine the VOC limits that would meet current RACT. The Stakeholders also requested documentation of the emissions inventory for the wood finishing industry in Maricopa County and how much emission reduction is hoped to be achieved with the proposed VOC limits. The original proposed VOC limits were from air agencies that are areas designated as serious nonattainment for ozone. The department reviewed other rules of air agencies that are in moderate ozone nonattainment areas. The department determined the proposed VOC emission limits were too stringent for a moderate nonattainment area. The proposed Table 342-2 retains the current VOC emission limits and clarifies the VOC emission limits for specific types of coatings. Other suggested table revisions included the addition of strippable booth coating, and low VOC topcoat VOC limits.

VOC LEAK DETECTION AND REPAIR

Section 304 and Section 501.4 are proposed to be added for VOC Leak Detection and Repair standards. The department referred to the CTG to determine the requirements for leak detection and repair. CTG Section 5.3.1.2 VOC Transfer[1] (pg 5-7) describes the leak inspection program. The minimum criteria identified in the CTG included a monthly inspection frequency; procedures for addressing leaking equipment; and a maximum time frame for completing repairs unless replacement equipment has been ordered. The department worked with the Stakeholders in drafting Section 304 of the proposed rule to include leak inspections for "equipment used to transfer or apply VOC-containing finishing materials." In addition, monthly leak inspection is required. Leak repair specifies the first attempt to repair is to be made within five days of detection with final repairs completed within fifteen days. Additional items were added in the proposed final repair section. Options to meet the final repair time frame also include the option of removing the leaking equipment from service and an option of replacing the leaking equipment with a new purchase within three months of leak detection. Proposed Section 501.4 identifies the information that is required to document VOC leak detection and any required repairs. Stakeholders requested that the rule list out the specific information that is required for the inspection records. This proposed list will make it clear for the owner or operator as well as for inspection purposes.

EMPLOYEE TRAINING REQUIREMENTS

Proposed Section 403 (Annual Operator Training Requirements to Reduce VOC Emissions) includes training requirements for employees. CTG Section 5.3.3 General Work Practice Requirements[1] (pg 5-14) outlines the minimum requirements for a training program. The CTG recommends annual training that includes coating application, cleaning and washoff techniques, proper equipment operation, methods to reduce solvent usage, and proper management of VOC waste materials. Stakeholders requested this section be clearly identified to be applicable to VOC-containing materials only. Stakeholders were concerned facility operations that did not involve VOC-containing materials may be noted as being in non-compliance during an inspection. The department revised the proposed section title to be specific to VOC emissions. In addition, the department is proposing to include specific training as recommended in the CTG. The department is proposing to allow up to six months after proposed rule adoption for facilities to come into compliance with the proposed rule revisions. The department is proposing to add Section 501.5 (Annual Operator Training Records Required by Section 403 of this Rule) to list out the specific requirements for the training recordkeeping. This proposed list will make it clear for the owner or operator as well as for inspection purposes.

Section 100 Issues Raised and Discussed

Section 100, Table 342-1 (Applicable Standard Industrial Classification (SIC) Codes) is proposed to be added as a convenience to the reader. Stakeholders and department staff agreed that the addition of the table with the SIC title will make it easier to identify the type of woodworking to which the rule applies. Since the definition of WOOD FURNITURE AND FIXTURES in Section 236 of the rule lists the SIC numbers to identify what constitutes wood furniture and fixtures and therefore to what Rule 342 applies, the department is proposing to include such SIC in the Applicability section of the rule. Although SIC have been updated to North American Industry Classification System (NAICS), the department did not include NAICS in the proposed draft of Rule 342. The proposed draft of Rule 342 is intended to be

updated to match the CTG; the CTG uses SIC as the means by which to determine applicability; therefore, the department did not propose to include NAICS in the proposed draft of Rule 342.

The department proposes to add Section 103 (Exemptions) and delete Section 307 from the current rule. The exemptions described in current Rule 342, Section 307 are difficult to find. Stakeholders and department staff agreed that moving the exemptions to the beginning of the rule will make it easier to identify rule applicability to a facility. In addition, Stakeholders requested that the exemptions section be made more clear by including an exemption from other Maricopa County Air Pollution Control Regulations to which sources that are subject to Rule 342 are exempt. The department is proposing to add Section 103.1(c) to address this concern.

Section 200 Issues Raised and Discussed

The current definition of CERTIFIED PRODUCT DATA SHEET (CPDS) includes a requirement that "...an officer of a coating supplying operation..." sign the CPDS. Stakeholders stated that the suppliers do not sign the CPDS that accompany the VOC-containing materials; this creates a situation where the facility cannot comply with the rule as currently written. The CPDS definition was taken from the definitions in the CTG Model Rule language. In the years since the CTG was issued, manufacturers and suppliers have included the VOC content information on labels and on product information supplied to the facilities. The American Coatings Association supported the suggestion to remove the signature requirement for the CPDS. Further discussion addressed if the definition was even needed in the rule. Since Appendix A To Rule 342 references the CPDS, the Stakeholders and the department agreed to propose to delete the definition from Section 200 and to add the definition of "CPDS" to Appendix A To Rule 342.

The definition of a HIGH-VOLUME, LOW PRESSURE SPRAY GUN (HVLP) is proposed to be added. At the time the CTG was written, the "disadvantage of HVLP systems in general is that the HVLP systems are reportedly not always able to apply finishes as quickly as the other spray techniques."[1] (pg. 2-25) Since the HVLP spray gun operated at a 10 psi, a psi at or below a low pressure spray gun, it is assumed that by defining LOW PRESSURE SPRAY GUN, an HVLP gun would be included in the definition. Since the issuance of the CTG, manufacturers have continued to refine the HVLP spray gun. It is now the most common type of spray gun in use and considered the industry standard in which to measure spray gun efficiency against. The inclusion of the definition of HVLP spray gun will provide language consistent with current industry and manufacturing terms. In addition to adding the definition of HVLP, Stakeholders requested referencing HVLP spray guns whenever low pressure spray guns are specified. The department is proposing to add the definition of HVLP spray gun, retain the definition of LOW PRESSURE SPRAY GUN, and include references to HVLP spray guns where appropriate in the proposed rule.

Stakeholders requested that the definition of WORKING DAY be revised to limit the definition to when VOC-containing material is used. Stakeholders stated that there are times when "manufacturing" is taking place, but no VOC-containing materials are being used. Examples of these types of "manufacturing" operations include the prep work, such as cutting and sanding, of wood materials. Revising the definition to include just the operations involving VOC-containing material would follow the rule's purpose and applicability as stated in Section 100 of the rule. Since the rule does not cover the emissions of particulate matter and does limit the emissions to VOC emissions, the department proposes to limit the definition of WORKING DAY to a day or days when "...the application of VOC-containing finishing material [is applied] to wood furniture or fixtures."

Section 300 Issues Raised and Discussed

The department originally proposed to reduce the VOC emission limits for all coating types. After further review (refer to "RACT Issues Raised and Discussed" section above) the proposed Table 342-2 retains the current VOC emission limits and clarifies the VOC emission limits for specific types of coatings. Other suggested table revisions include the addition of strippable booth coating and low VOC topcoat VOC limits.

Section 304 is proposed to be added for VOC Leak Detection and Repair standards. Refer to "RACT Issues Raised and Discussed" section above for a detailed discussion.

Section 305 is proposed to be renumbered to Section 306 and to specify that the section is applicable to the handling and disposal of VOC-containing materials. Stakeholders expressed concerns that non-VOC-containing materials may be noted as being in non-compliance during an inspection. There was concern that Section 305.1 (Use and Storage) was unclear as to when a material is considered "in use". The department considered this issue and is proposing to revise the provision in Rule 342, Section 306 to specify that storage containers for VOC-containing materials must be covered when not in use.

Section 306 is proposed to be deleted in its entirety. The section includes requirements for manufacturers of wood furniture coatings and not to stationary sources. The department has authority (under Arizona Revised Statutes) to regulate stationary sources of air pollution, not manufacturers of coatings.

Section 307 is proposed to be deleted in its entirety. The exemptions are proposed to be included in new Section 103 of the proposed Rule 342. The exemptions as located in current Rule 342, Section 307, are difficult to find.

Section 400 Issues Raised and Discussed

Section 401.2 is revised to delete the past compliance dates. The requirement stated in Section 401.2(b) is now incorporated into the main paragraph in Section 401.2. Section 401.2(a) is proposed to be deleted since the compliance date has passed.

Section 403 (Gun Tagging Requirements) is proposed to be deleted. Gun tagging requirements are no longer needed.

Proposed Section 403 (Annual Operator Training Requirements to Reduce VOC Emissions) includes training requirements for employees. Section 5.3.3 General Work Practice Requirements of the CTG[1] (pg 5-14) outlines the minimum requirements for a training program. Refer to "RACT Issues Raised and Discussed" section above for a detailed discussion. The department is proposing to include specific training as recommended in the CTG and to allow up to six months after proposed rule adoption for facilities to come into compliance with the proposed rule revisions.

Section 500 Issues Raised and Discussed

Section 501.1 is proposed to be revised to specify that a current list of all VOC-containing material be updated by the end of the following month. Section 501.1(b) (How to Express VOC Content) and Section 501.1(c) (Acceptable Format) are proposed to be deleted. Section 501.1(d) (Mix Ratios) is proposed to be retained, re-numbered, and clarified; 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.

Proposed Section 501.4 (Monthly VOC Leak Detection Inspection and Repair Records) identifies the information that is required to document VOC leak detection and any required repairs. Stakeholders requested that the rule list out the specific information that is required for the inspection records. This proposed list will make it clear for the owner or operator as well as for inspection purposes. Refer to "RACT Issues Raised and Discussed" section above for a detailed discussion.

The department is proposing to add Section 501.5 (Annual Operator Training Records Required by Section 403 of this Rule) to list out the specific requirements for the training recordkeeping. This proposed list will make it clear for the owner or operator as well as for inspection purposes.

Appendix A(d)(1) definitions are proposed to be revised to include the definition of CERTIFIED PRODUCT DATA SHEET. Stakeholder discussion asked it the definition was even needed in the rule. Appendix A To Rule 342 does reference the certified product data sheet. The Stakeholders and department agreed to propose to delete the definition from Section 200 and add CERTIFIED PRODUCT DATA SHEET to the definitions in Appendix A To Rule 342.

The department is proposing to add Table 342-3 (Formula 2 Neutral Point VOC Content of Coating) in Appendix A(d)(6). The department felt a table would be easier to read and determine the neutral point for the various coatings; the department is not proposing to change the limits.

The Green Tag requirements in Appendix B(d)(2) are proposed to be deleted for consistency throughout the rule. The heading for Appendix B(e)(1) (Housekeeping Functions) is proposed to be changed. Stakeholders requested that "Keep Coatings" be changed to "Keep VOC-Containing Materials", so the header will read "Keep VOC-Containing Materials, Cleaners, & Waste-Materials Covered".

The department is proposing to clarify Appendix C To Rule 342(d) regarding the compliance schedule for Emission Control Systems (ECS). The section addresses all emissions that are vented to an ECS and does not apply to millwork.

Description of Proposed Amendments:

Propose to revise the following throughout the rule:

* To renumber the sections to reflect additions or deletions
* To change "subsection" to "section."
* To delete "no person" and insert "an owner or operator"
* To add references throughout the rule to HVLP spray guns where ever requirements for low-pressure spray guns are cited
* To delete the duplicate Section 307.2(e) and Errata Note 1
* To add the title of test methods

* To delete the past compliance dates
* To include English measurements followed by metric measurements in parenthesis
* To delete references to "red" and "green" tags for spray guns

Propose the following in Section 100:

* To add Table 342-1 (Applicable Standard Industrial Classification Codes)
* To add Section 103 (Exemptions)

Propose the following in Section 200:

* To delete the definition of CERTIFIED PRODUCT DATA SHEET
* To add the definition of HIGH-VOLUME, LOW PRESSURE SPRAY GUN (HVLP)
* To revise the definition of KILOGRAMS VOC PER KILOGRAM OF COATING SOLIDS
* To revise the definition of VOC SOLVENT to VOC-CONTAINING SOLVENT
* To revise the definition of WORKING DAY

Propose the following in Section 300:

* To revise the table in Section 301.1
* To revise the wording in Section 301.1 and delete 301.1(a) and (b)
* To delete section 301.1(c)
* To revise the wording in Section 302.1
* To retain text in Section 302.2(c)(2) regarding "…equipment having a total capacity not exceeding 2.1 gallons (8 liters)" instead of revising the text to "…equipment having a total capacity not exceeding 2.0 gallons (7.57 liters)"; text is from CTG, Appendix B(5)(g)(ii)
* To add Section 304 (VOC Leak Detection and Repair)
* To revise the wording in Section 305
* To delete Section 307

Propose the following in Section 400:

* To delete past compliance dates in Section 401
* To revise the wording in Section 401.2
* To delete Section 403 (Gun Tagging Requirements)
* To add Section 403 (Annual Operator Training Requirements to Reduce VOC Emissions)

Propose the following in Section 500:

* To revise Section 501.1(b) (List Maximum VOC Content of Finishing Material as Applied)
* To delete Section 501.1(b) (How to Express VOC Content)
* To delete Section 501.1(c) (Acceptable Format)
* To delete Section 501.1(d) (Mix Ratio)
* To add Section 501.4 (Monthly VOC Leak Detection Inspection and Repair Records)
* To add Section 501.5 (Annual Operator Training Records Required by Section 403 of this Rule)
* To revise Section 502 (Compliance Determination-Test Methods)

Propose the following in Appendix A:

* To add CERTIFIED PRODUCT DATA SHEET to Appendix A(d)(1)
* To add Table 342-3 (Formula 2 Neutral Point VOC Content of Coating) in Section d(6)

Propose the following in Appendix B:

* To change the text in Section B(e)(1) (Housekeeping Functions) to match the text in Sections 306.1 (Handling and Disposal of VOC-Containing Materials-Use and Storage) and 306.2 (Handling and Disposal of VOC-Containing Materials-Disposal of VOC and VOC-Containing Material)
* To change the text in Section B(e)(2) (Housekeeping Functions) to match the text in Section 305.1 (Cleanup and Cleaning Supply and Application Equipment-Booth Cleaning)
* To revise the title of Section d(2) (Conventional Spray Gun Restriction)
* To delete Section d(2)(a) (Green Tag Requirements)

Propose the following in Appendix C:

* To clarify (d) regarding the compliance schedule for Emission Control Systems (ECS). The section addresses all emissions that are vented to an ECS and does not apply to millwork.

References:

1. "Control of Volatile Organic Compound Emissions From Wood Furniture Manufacturing Operations", EPA-453/R-96-007, April 1996.
2. Arizona Administrative Register, 1 A.A.R. 100, February 17, 1995.
3. Maricopa County Clerk of the Board Certified Minutes, February 15, 1995.
4. Maricopa County Clerk of the Board Certified Minutes, April 03, 1996.
5. Arizona Administrative Register, 2 A.A.R. 4305, October 18, 1996.
6. Maricopa County Clerk of the Board Certified Minutes, November 20, 1996.
7. Arizona Administrative Register, 19 A.A.R. 3611, November 22, 2013.
8. Department email between Cheri Dale, Doug Kober and Philip McNeely, October 27, 2015.
9. Department email from David Darling, American Coatings Association, September 01, 2015.

6. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any Board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
   - **(a)** Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
   - **(b)** Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any Board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. While currently classified as a "marginal" ozone nonattainment area, the county recently failed to meet 2008 8-hour ozone standard by the marginal area attainment date and anticipates EPA will issue a notice proposing to re-classify the area to "moderate". Further, a portion of the county was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the county to continue to maintain the measures and requirements that allowed the county to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM_{10} 24-hour standard. This is the only serious PM_{10} nonattainment area in Arizona. Revisions to Rule 342 are being proposed to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The proposed amendments in Rule 342 include Reasonably Available Control Technology (RACT).

The department complies with A.R.S. § 49-112(B) in that the proposed amendments to Rule 342 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any Board or commission authorized to adopt rules pursuant to Title 49, address

the peculiar local conditions in Maricopa County, are authorized under A.R.S. Title 49, Chapter 3, Article 3, and are not in lieu of a state program.

7. **Documents and/or studies referenced and/or reviewed for this rulemaking:**
Not applicable

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

9. **Preliminary summary of the economic, small business, and consumer impact:**
The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

An identification of the rulemaking.
This rulemaking is proposing to revise Rule 342 (Coating Wood Furniture and Fixtures).

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.
The persons who will be directly affected by and bear the costs of this rulemaking will be facilities in Maricopa County that own or operate a facility in which the surface preparation and coating of wood furniture and fixtures takes place. The department has issued permits to 67 facilities subject to Rule 342.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**
The department anticipates that some of the permitted facilities might incur costs for VOC leak detection and repair (Sections 300 and 500), annual training requirements (Section 400), and associated recordkeeping (Section 500.). These costs are described in more detail in Section 9(c) below.
Rule 342 revisions include several changes that revisions are highly likely to ease the regulatory burden in terms of the number of entities regulated under the Rule or the amount of time required to comply with the Rule:
- Section 103.1 exempts sources subject to Rule 342 from Rule 330 (Volatile Organic Compounds) and Rule 336 (Surface Coating Compounds);
- Section 306 is deleted; thus removing all coatings manufacturers from being subject to Rule 342;
- Section 403 is deleted; spray gun tagging is no longer required.

It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. The benefits of the rule revision are anticipated to be a result of the following changes:
- Adding or clarifying Rule 342 text in order to meet the Control Techniques Guideline (CTG) for this rule "Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations", April 1996;
- Adding exemptions to Section 100 of Rule 342;
- Adding or revise definitions found in Section 200 of Rule 342;

Revising Section 300 to include the redesign of the table in Section 301for easier reading;
- Clarifying the use of spray guns;
- Clarifying requirements for handling and disposal of VOC-containing materials;

Revising the compliance schedule in Section 400 of Rule 342;
- Adding annual operator training requirements to Section 400 of Rule 342;
- Revising the finishing material list in Section 500 of Rule 342;
- Modifying the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**
The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**
The proposed Rule 342 revisions could result in the subject entities incurring costs for training, leak detection, and recordkeeping. In order not to underestimate the potential impacts of the Rule 342 revisions, a cost analysis was conducted that included the following assumptions:

- All facilities incur training, leak detection, and recordkeeping costs. That is, for the purpose of not underestimating the costs with the rule revisions, the department assumed that no permitted facility had in-house training prior to the Rule 342 revisions.
- Training New Employees. The owner/operator spends 30 minutes developing a training checklist, two hours in training the new employee during which the owner/operator will use the checklist to ensure all topics are covered, and spends 5 minutes to place the checklist in the employee's file when completed.
- Annual Refresher Training. The owner/operator is assumed to use the checklist to ensure he/she addresses all parts of the training. Other assumptions made to estimate costs: a single piece of paper is circulated for employees to sign, documenting that they received the annual training; the owner/operator takes 5 minutes to file the annotated checklist and sign-in sheet; the annual refresher training is conducted at the facility; and for a 30-minute refresher training, the estimated costs include 30 minutes for each employee as well as the owner/operator.
- Leak Inspection Program. For the purpose of estimating costs associated with the Rule 342 revisions, these assumptions were made: The owner/operator spends 60 minutes to list each piece of equipment and its specific checks and another 15 minutes generating 12 copies (one for each month) and placing these in a storage folder; and each month, a worker is assumed to spend 45 minutes going through the leak inspection checklist and performing the checks, 15 minutes to update the records for any repairs/ replacements done during the month, and 5 minutes to file the copy.

The economic analysis used the 25th percentile, average, and 90th percentile industry wages in Maricopa County for the new employee, average employee, and owner/operator. To estimate potential costs to a business, it was assumed that in the first year that rule revisions are in effect, every business hires a new employee, develops training for new and existing employees, conducts the training, develops the leak inspection program, conducts 12 monthly inspections, and incurs the recordkeeping costs for training and leak detection. Costs differ by business depending on the number of employees that receive the annual training. First-year costs are used in the economic analysis. Subsequent years will not require the development costs for the training and leak inspection program.

Table 1 illustrates the cost estimation calculations for a business with 10 employees in the first year of the proposed rule revisions. In this case, the cost is about $315 for a facility that has no training of new hires, no annual refresher training for all employees, and no leak detection program.

Table 1. Training, Leak Inspection, and Recordkeeping Costs—Example First-Year Costs

Cost Element	Estimated Cost
New Hire Training	$63.77
Leak Detection-ChecklistDevelopment	$22.48
Leak Detection-Inspection and Recordkeeping	$155.22
Annual Refresher Training--Trainer	$13.49
Per-Employee Cost	$5.97
Number of Employees	10
Refresher Training Costs	$59.70
Costs in Impact Analysis	$314.66

A leak inspection program and employee training would benefit a business by minimizing material lost through the leak as well as any imperfections caused by the malfunctioning equipment. It was assumed that most, if not all, businesses would have a leak inspection program in place because it is cost-effective to do so. Facilities to which Rule 342 applies would also benefit from the increased clarity of the rule to reduce non-compliance.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

Of the 67 facilities with Rule 342 permits, 8 belong to non-commercial entities such as educational or medical facilities, airport authorities, a military air force base, and a governmental entity. The estimated cost for any of these noncommercial entities is small

compared to its operating budget. As such, the department projects no discernable impacts on the noncommercial facilities.

The department examined the impacts on commercial facilities through two metrics: the ratio of first-year costs to (a) annual revenue and (b) projected net income. The data source for revenues is the location/business-specific data in the *DemographicsNow* commercial database. To estimate net income, the revenues were multiplied by the ratio of net income to revenues reported in IRS statistics for the wood product manufacturing industry. The national average is that net income is 3.9 percent of revenues for all businesses in the industry including businesses with no positive net income. The economic analysis indicates that, under the proposed revisions, the maximum impact was about one-quarter of one percent (0.24 percent) of revenues. All but five businesses showed less than a 3 percent reduction in net income as a result of potential incremental costs for complying with the Rule 342 revisions.

The aggregate estimated first-year costs for all commercial facilities is slightly less than $29,000. The U.S. Commerce Department, Bureau of Economic Analysis (BEA) developed the Regional Input-Output Modeling System (RIMS II) to estimate the loss in output, earnings, and employment associated with spending increases/decreases by industry and region. For this analysis, the department used the multipliers for the furniture and related product manufacturing industry in Maricopa Country. The department compared the estimated losses in output, earnings, and employment against the Gross Domestic Product (GDP) for durable goods manufacturing in the Phoenix-Mesa-Glendale Metropolitan Statistical Area (estimated by BEA), annual payroll data for wood furniture fabrication and coating from the Census County Business Patterns (CPB) data for Maricopa County, the employment data from the same CPB dataset, and the Bureau of Labor Statistics data on labor force and unemployment rate for Maricopa County, respectively. The aggregate costs of Rule 342 revisions lead to no discernable impact on output, employment, or unemployment rate in Maricopa County. The potential change in earnings is less than 0.07 percent.

A statement of the probable impact of the rulemaking on small businesses.

The economic analysis indicates that, under the proposed revisions, the maximum impact was about one-quarter of one percent (0.24 percent) of revenues for small businesses. Five small businesses showed more than a 3 percent reduction and less than a 6.5 percent in net income as a result of potential incremental costs for complying with the Rule 342 revisions. The actual impacts would be less because the comparison of costs to net income is made with pre-tax costs and not after-tax costs and could be lessened by any training programs currently in place.

(a) **An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County with surface preparation and coating of wood furniture and fixtures that have either fewer than 100 employees or less than $4 million in revenues for the most recent fiscal year. Of the 67 permitted facilities, 8 are non-commercial and of the 59 commercial businesses, 51 are considered small.

(b) **The administrative and other costs required for compliance with the rulemaking.**

The costs to comply with the annual refresher training in the proposed rule revisions will vary for each business depending on the number of employees. The department estimated that the first-year cost for a business with 10 employees to comply with all administrative and other costs from the Rule 342 revisions would be about $315. The aggregate estimated first-year costs for all commercial facilities is slightly less than $29,000.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**

By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**

Given that the maximum impact on commercial entities is about 0.36 percent of revenues, even a price increase to recover the costs associated with the Rule 342 revisions would not be discernable to consumers. Thus, the department projects no discernable impacts on consumers.

A statement of the probable effect on state revenues.

With no discernable costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability. The department also examined an alternative scenario in which the owner/operator successfully completes an on-line training class and uses the material in training the other staff. This alternative was more expensive and had less quantifiable benefits such as reduced VOC emissions. Thus, the department selected the less burdensome alternative.

10. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name: Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, AZ 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

11. **Time, place, and nature of the proceedings for the rulemaking:**

Written oral proceeding requests or written comments or both will be accepted until the record is closed on June 13, 2016, 5:00 p.m. Written oral proceeding requests or written comments or both may be mailed, e-mailed, or hand delivered to the department (see Item #4 of this notice). An oral proceeding will be scheduled only upon receipt of a written request before the record is closed on June 13, 2016, 5:00 p.m. Written comments received during the comment period and before the record is closed on June 13, 2016, 5:00 p.m. will be considered formal comments to the Notice of Proposed Rulemaking and will be responded to in the Notice of Final Rulemaking.

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

Not applicable

13. **Incorporations by reference and their location in the rule:**

Incorporations by reference are in Section 502 (Compliance Determination-Test Methods)

14. **Full text of the rule follows:**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 342
COATING WOOD FURNITURE AND FIXTURES
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~~Adopted 04/03/96~~
~~Revised 11/20/96~~
~~Revised 09/25/13~~

Adopted 04/03/1996; Revised 11/20/1996; Revised 09/25/2013; and **Revised MM/DD/YYYY**

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 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 of VOC emissions per year. For sources emitting less than 2 tons of VOC per year, ~~consult subsection 307.2d~~ 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 301.1of this rule, but shall comply with all other provisions of this rule:
(1) The annual total use of all of the following coating types 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 for completed finishes up to 3 dry mils thickness or does not exceed 2.3 lb VOC/lb 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 2.3 lb VOC/lb 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 103.2(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/lb solids if both the following conditions are met:

(1) The volume of such coating applied in this way is less than 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, ~~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 **ARCHITECTURALCOATING:** 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 isapplie d before graining inks, glazing coats, or other high-hiding finishing materials. A basecoated surface usually receives a topcoat ~~also~~.

~~206~~ ~~CERTIFIED PRODUCT DATA SHEET: A document, signed byan officer of a coating supplying operation, stating preciselythe maximum VOCconten t of a particular coating as supplied~~.

~~207~~ **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.

~~208~~ **207** **CONVENTIONAL AIR-ATOMIZED SPRAY:** Any spraycoating method in whichthe 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.

~~209~~ **208** **CUSTOM REPLICA FURNITURE:** Furnitureindividually produced or repaired after an order has been received from a client specifying a particular style and period, using both the style and the methodsof construction, including materials, joinery, and finishes, which are authentic to the period.

~~210~~ **209** **DAY:** A period of 24 consecutive hours beginning at midnight.

~~211~~ **210** **DILUENT:** For the purpose of this rule, any fluid in or added to a coating such as thinner, retarder, reducer, solvent, or dryingaccelerato r whichsolubilizes, adjusts concentration, viscosity, flow, or drying rates and which evaporates as the coating film solidifies and cures.

~~212~~ **211** **ELECTROSTATICAPPLICATION:** A m e t hodofapplyingcoating by electrically charging coating dropletso r particles causing their deposition onto a substrate by electrostatic attraction.

~~213~~ **212** **EMISSION CONTROLSYSTEM (ECS):** A s y s tem for reducingemissions of organic compounds, consisting of both collection and controldevices which are approved in writing by the Control Officer and are designed and operated in accordance with good engineering practice.

~~214~~ **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 o n e o more of the industrial groupings listed in Section ~~238~~ 236 of this rule.

~~215~~ **214** **FAUX FINISH:** A finish intended to simulate a surface other than wood, including, but not limited to, stone, sand, metal, fur and leather.

~~216~~ **215** **FINISHING MATERIAL:** A coating other thanone 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 graininginks.

~~217~~ **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, LOWPRESSURESPRAY GUN (HVLP)**: Spray equipment that is used to apply coating by means of a spraygun 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 anycoating, 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. ~~Abbreviations used include kg VOC/kg solids (lb VOC/lb solids) or simply kg/kg (lb/lb).~~

219 **LOW PRESSURE SPRAY GUN**: A n air-atomized spraygun which by design functions best at ~~tip~~ air cap pressures below10 psig (0.7 bar) measured according to ~~subsection~~ 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 ~~tip~~ air cap pressure exceeds 12 psig (0.8 bar) in measurements done pursuant to subsection 502.2 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 ~~subsection 502.3~~ 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 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) numbers 2434, 2511, 2512, 2515, 2517, 2519, 2521, 2531, or 2541~~, or 2599 as well as wood-product on convertible furniture under SIC number 2515~~.

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~~ the application of VOC-containing finishing material to wood furniture or fixtures.

SECTION 300 – STANDARDS

301 LIMITATIONS – VOC CONTENT:

301.1 ~~No person~~ 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 pounds of VOC per pound of solids (kg VOC/kg solids) or to the grams of VOC per liter~~ the VOC limits in one of the columns in Table 342-2 below:

a. ~~General VOC Limits of Coatings~~

~~Table1~~

	~~Column A~~ ~~Lb VOC/lb solids~~	~~Column B~~ ~~Grams VOC/liter **~~
~~Topcoat~~	~~1.8~~	~~635~~
~~Sealer~~	~~1.9~~	~~645~~
~~Acid-cured, alkyd amino topcoat~~	~~2.0~~	~~655~~
~~Acid-cured, alkyd amino vinyl sealer~~	~~2.3~~	~~680~~
	~~**less non-precursor compounds & water~~	

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	5.38lb/ gal	645 g/l
Topcoat	1.8	5.29lb/gal	635 g/l
Acid-Cured Alkyd Amino Vinyl Sealer	2.3	5.67lb/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

*** less non-precursor compounds and water**

b. ~~Option: Lower VOC topcoat and Unlimited Sealer: There is no VOC limit on sealer when the sealer's topcoat does not exceed 0.8 lb VOC/lb (0.8 kg/kg).~~

c. ~~Coatings with no VOC limits: Stains, washcoats, glazes, toners, inks, and other coatings not specified in this subsection 301.1 nor in subsection 301.2 have no VOC limits.~~

~~301.2~~ ~~Strippable Booth Coatings: No person shall use a strippable booth coating unless, as applied, the coating has either no more than 0.8 lb VOC/lb solids or no more than 3.0 lb/gal (360 g/l) less non- precursor volatile compounds.~~

~~301.3~~ **301.2** **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~~ Section 301.1 of this rule if the owner or operator complies with all provisions in this rule's Appendix C: ALTERNATIVECOMPLIANCEWITHSE CTION301VOC LIMITS AND/OR SECTION 302SPRAY-METHODRESTRICTIONSBYUSING AN EMISSIONS CONTROL DEVICE and with the other applicable provisions of this rule.

~~301.4~~ **301.3** **Averaging:** An owner or operator of a larger furniture coating facility meeting the applicabilityrequirements of subsection b., in this rule's Appendix A: AN AVERAGING ALTERNATIVE, may complywith ~~subsection 301.1a.~~ Section301.1 of this rule bycomplying with Averaging-Formula 1 or Averaging-Formula 2 in Appendix A and bycomplying with all other applicable provisions of Appendix A.

~~301.5~~ **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 operationsis exempted from all provisions under Sections 300, 400,an d 501 (but not Sections 100, 200, and 5 0 2) i f all provisions are complied with in this rule's Appendix B: A SHORT-FORM OPTION. Sources emitting less than 2 tonsof

VOC per year may be allowed exemptions pursuant to ~~subsection 307.2d~~ 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: ~~No person~~ 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 ~~of possession and use~~ 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 ~~applicable subsections of Section 307~~ Section 103 of this rule, or to any specific system which is approved by the Administrator as ~~having a transfer efficiency consistently exceeding 64%.~~ HVLP-equivalent.

302.2 Limitation of Air-Atomized Spray Gun other than Low Pressure or HVLP Spray Guns: ~~No person~~ 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) ~~such~~ The application is performed after completion of the entire finishing operation; or

(2) ~~such~~ 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 5% of all coating pursuant to ~~subsection 307.2.e~~ Section 103.2(e)(1) of this rule.

303 OPERATION AND MAINTENANCE: ~~Any person~~ 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 5 working days after the leak was first detected.

b. Final repairs shall be made within 15 working days after the leak was first detected unless the leaking equipment is to be either:

(1) Removed from service within three months after the leak was first detected; or

(2) Replaced by a new purchase within three months after the leak was first detected.

~~304~~ **305 CLEANUP AND CLEANING SUPPLY AND APPLICATION EQUIPMENT:**

~~304.1~~ **305.1 Booth Cleaning:** ~~No person~~ An owner or operator shall not clean spray booth components using a VOC-containing 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 and while refurbishing spray booths. If the ~~spray~~strippable booth coating is being replaced, ~~a person~~ an owner or operator shall not use ~~no~~ more than 1.0 gallon (3.8 liters) VOC-containing solvent per booth to clean the spray booth.

~~304.2~~ **305.2 Cleaning Guns and Lines:** ~~A person~~ 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 ~~immediately~~ closed or covered after all the VOC-containing solvent has been collected, and shall remain so except when in use.

~~305~~ **306 HANDLING AND DISPOSAL OF VOC-CONTAINING MATERIALS:**

~~305.1~~ **306.1 Use and Storage:** ~~A person~~ 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. ~~A person~~ An owner or operator shall store VOC-containing finishing and cleaning materials in closed containers.

~~305.2~~ **306.2 Disposal of VOC and VOC-Containing Material:** ~~A person~~ 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 are legibly labeled with their contents and~~ which shall remain covered ~~when not in use~~ except when contents are being added or removed.

~~306 DESIGNATION OF VOC CONTENT REQUIREMENT: Effective May 3, 1996, a manufacturer of wood furniture 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. For topcoats and sealers, this shall be in pounds of VOC per pound of coating solids (g/g) or in pounds VOC per gallon (g/lg) less water and non-precursor volatile 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 this rule.~~

~~b. The following shall be exempt from subsection 301.1 and Section 302:~~

~~(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): prepackaged aerosol spray cans which are not used for touch-up or repair, metal leaf finishes, and faux finishes.~~

~~(2) Refinishing, Replacement, and Custom Replica Furniture Operations: Any refinishing operation necessary for preservation, to return the furniture or fixture to original condition, to replace missing furniture to produce a matching set, or to produce custom replica furniture.~~

~~c. The coating for a single resin layer finish which does not exceed a VOC limit of 3 lb VOC/lb solids for completed finishes up to 3 dry mils thickness or does not exceed 2.3 lb/lb for finishes over 3 dry mils is exempt from the VOC limits of subsection 301.1 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 2.3 lb VOC/lb 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 subsections 307.2d (1) and (2) of this rule following, is exempt from all provisions of this rule except for Section 303 "Operation & 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 VOC solvent 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.

e. Using Conventional and other 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 1 lb VOC/lb 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 1 lb VOC/lb. 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.

Errata Note1 1

e. Using Conventional and other 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 1 lb VOC/lb 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 1 lb VOC/lb. 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 FOR APPENDIX C: The following schedule applies, with exceptions for an Emission Control System provided in Appendix C.

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 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 and have submitted 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.

Other Sources: The schedule follows for any 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 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.

a. A facility 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.

1 1 This errata note is not part of Rule 342. For the reader's convenience, the second subsection 307.2e. was an earlier draft of the section not intended to be left in the rule. It will be removed for the next revision of this rule.

402 REGULATORY CLARIFICATION

Status with Respect to Rules 330 (Volatile Organic Compounds) and 336 (Surface Coating Operations): ~~No~~ A wood furniture or fixture coating operation is not subject to Rule 330 or to Rule 336 of these rules.

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.

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.

Coating over Wood Coating(s) the same as Coating onto Wood: The VOC limits for finishing materials given in ~~section 301.1~~ 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 GUN TAGGING REQUIREMENTS: An owner or operator shall use a red 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 subsection 307.2e.~~

403 ANNUAL OPERATOR TRAINING REQUIREMENTS TO REDUCE VOC EMISSIONS:

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.

Employees hired after [adoption date of this rule], shall be trained upon hiring, unless previously trained within the past year.

Employees hired prior to [adoption date of this rule], shall be trained by [six months after adoption date of this rule].

Employees shall be given refresher training annually.

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 years.

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. How to Express VOC Content:~~

~~(1) Non-Coatings: Use grams VOC/liter or lb VOC/gal. for reducers, thinners, cleaners, etc.~~

~~(2) Stains: Use lb VOC/gal.~~

~~(3) Topcoats and Sealers: Use either lbs VOC/lb solids or g VOC/liter (lb VOC/gal) except:~~

~~(a) Any topcoat or sealer sprayed with a conventional or other restricted use gun shall be expressed in lbs VOC/lb solids.~~

~~(b) Two VOC content values must appear for each topcoat and each sealer that is expressed as grams VOC per liter or pounds VOC per gallon: both grams VOC/liter (lb VOC/gal) including water and non-precursor organic compounds, and grams VOC/liter (lb VOC/gal) less water and non-precursor organic compounds.~~

~~(4) Other Coatings: Use grams/liter (or lb/gal) or lbs VOC/lb solids for coatings that are neither sealers nor topcoats, such as washcoats, glazes, etc.~~

~~c. Acceptable Format: VOC-containing materials shall be listed neatly and completely. The following is an example of an acceptable method: Example: Identify and list each VOC-containing material in one of 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 material, record the VOC-content found on the container, an MSDS, an invoice, or other source.~~

~~d.~~ **b. Mix Ratios:** A current list of VOC-containing mix ratios for catalyst/hardeners shall be maintained if ~~of~~ the manufacturer's recommended mix ratio is not followed or ~~of components, including but not limited to adding reducers and catalyst/hardeners, except~~ when the manufacturer has no recommendations ~~for any additions~~.

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 ~~304~~ 305 of this rule shall be totaled and logged by the end of the following ~~workday~~ working day. VOC content shall be entered for each such material.

b. Monthly Update for Materials Compliant with Sections 301 and ~~304~~ 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 or in ~~grams/liter (lb/gal)~~ 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 ~~type~~ name of ~~organic~~ VOC-containing solvent used each month for stripping and cleaning.

(4) The quantity of ~~organic~~ 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.

Disposal/Recovery: An owner or operator shall keep records of disposal/recovery of all VOC-containing materials.

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 owner or operator 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.

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: ~~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.~~ An exceedance of the limits established in this Rule 342, determined by any of the applicable test methods, constitutes a violation of this rule. The EPA test methods 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 at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, AZ 85004.

~~Measurement of VOC content, pursuant to the VOC limits of subsections 301.1, 301.2, and 302.2, and subsections 304.1 and 307.2c., 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.~~

502.1 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 ~~tip~~ air cap ~~and air horns~~ 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 ~~subsection 307.2c~~ 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.

APPENDIX A TO RULE 342
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 ~~subsection~~ 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 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 (21.7 Mega Gram (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 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.

~~(1)~~ **(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.

~~(2)~~ **(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.

~~(3)~~ **(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).

~~(4)~~ **(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.

~~(5)~~ **(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 ~~kg VOC/kg~~ pound VOC per pound coating solids (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	VOCContentNeutralPoint	VOC Content NeutralPoint
Topcoat	1.62 lb VOC/lb solids	1.62k g 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
Basecoat	1.08 lb VOC/lb solids	1.08 kg VOC/kg solids
Stain	5.942lbVOC/ gallon	0.712 kg VOC/liter

~~The neutral point VOC content for each of the 5 types of coating in Formula 2 is as follows:~~
~~Topcoat - 1.62 kg VOC/kg solids; sealer coat - 1.71; washcoat - 8.1; basecoat - 1.08~~
~~The neutral point for stains is expressed in kilograms VOC per liter of coating - 0.712 kg VOC/liter~~

e. Basic Requirements for all Averaging Regimes:

(1) Entire ~~Workdays~~ **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 ~~workday~~ working day will be the calendar day in which work commences. However, an owner or operator may designate in writing a ~~workday~~ 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 ~~workday~~ working day may be changed if written notification has been given the Control Officer at least five ~~workdays~~ 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 ~~workday~~ 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 ~~kg VOC/kg solids~~ (1.71kg 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) and topcoats (1.62 lb VOC/lb solids) ~~(1.71 and 1.62, respectively)~~ 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 ~~production~~ working day by midday on the next ~~workday~~ 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 ± 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 ~~facility workdays~~ working days. The Control Officer may request that a hardcopy of the retrieved information be provided him/her by the same clock time, two ~~workdays~~ 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:

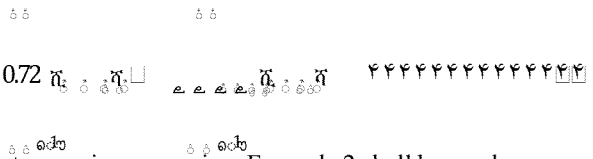
(1) If an exceedance of the limits of an averaging formula is determined to be in violation of this rule, at least two violations may be charged: at least one violation for exceeding the limits in ~~subsection 301.1~~ Section 301.1 and a separate violation for exceeding the limit determined by the averaging 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.

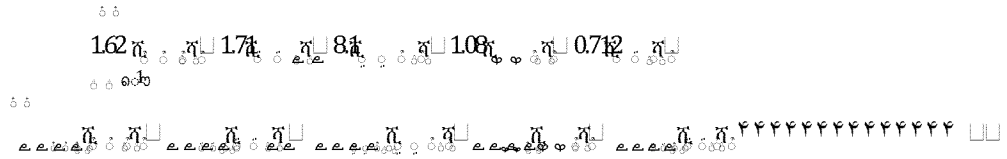
(2) Continuance: The Control Officer may disallow an owner or operator the continuance of averaging at a facility which has failed to comply with one or more provisions of this Appendix on three separate working days in any period of 12 consecutive months, or which has been found guilty of a major violation 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.



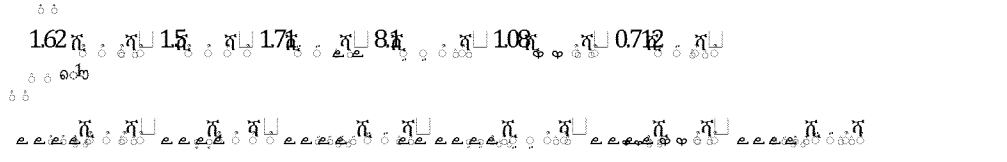
(2) For other coating systems using averaging, Formula 2 shall be used.



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 process one uses a high solids topcoat at 1.5 kg VOC/kg solids before 1993 (the year regulation negotiation began) and now thins 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. ERu 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 (TCi) becomes slightly altered to mean the total topcoat solids used of every other topcoat beside the unique topcoat "U":



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.

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, 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 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 ~~subsection~~ 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 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~~ air cap. ~~Examples: pure HVLP gun; a turbine gun.~~
- ☐ An HVLP gun or a turbine gun with 10 psig or less at air cap.
- ☐ Airless; includes air-assisted airless.
- ☐ An electrostatic system.

(2) ~~Green Tag Option: Restriction on conventional guns and other restricted use guns:~~
Conventional Spray Gun Restriction:

(a) ~~Green Tag Requirements: A conventional air-atomized or other restricted use gun shall have a durable and visible green 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 1 lb VOC/lb solids as applied. Coatings which have less than 4.30 lb VOC/gal (515 g/l) minus exempt materials also meet this requirement.~~

(b) ~~Prohibition:~~ No coating over 1 lb VOC/lb 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. ~~("Conventional air-atomized gun" is defined in Section 208. "Restricted use gun" is defined in Section 225.)~~

(3) Exemptions from VOC and Spray-Method Limits: Prepackaged aerosol spray in cans under 22 fl. oz., 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 ~~Coatings~~ **VOC-Containing Materials, 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.~~ 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:** ~~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.~~ An owner or operator shall not clean spray booth components using a VOC-containing 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 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/lb~~ lb VOC/lb solids or ~~lb/gal~~ lb VOC/gal. 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-~~c~~ontaining 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 or more. Otherwise, update monthly. You may record just once a year those types of materials of which 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.

APPENDIX C TO RULE 342

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 ~~subsections 301.1 and 301.2~~ 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 ~~subsection 302.2~~ 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 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 reinstituted 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 ~~subsection 301.3~~ 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 ~~subsection 501.2~~ 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 ~~is~~ are the total facility-wide VOC from all ~~wood coating~~ operations ~~and associated cleaning processes. It includes millwork coating.~~ 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 ~~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, its permit has a VOC-emissions 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 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 ~~by June 3, 1996,~~ listing dates of completion of increments of progress toward meeting the requirements of ~~subsection 301.3~~ Section 301.2 of this rule.

(b) An O&M Plan for the ECS ~~by November 15, 1996~~.

(2) **Other Sources:** ~~A~~ The owner or operator of a wood furniture coating facility shall be in compliance with Section 301 and Section 302 of this rule ~~by November 15, 1996 and with Section 301 by January 15, 1997~~, if ~~its~~ the total VOC in each of the years 1990 through 1995 ~~of~~ 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 ~~by June 3, 1996~~, listing the dates of completing the increments of progress toward meeting the requirements of the ~~subsection 301.3~~ Section 301.3 of this rule; and

(b) An O&M Plan for the ECS ~~by January 2, 1997~~.

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 ~~Reference~~ 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, 1001 N. Central Ave., Phoenix, Arizona, 85004.

(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: ~~2, 2A, 2C, or 2D.~~

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

NOTICE OF PROPOSED RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 350: STORAGE OF ORGANIC LIQUIDS AT BULK PLANTS AND BULK TERMINALS
PREAMBLE

1. **Rule affected** — **Rulemaking action**

Rule 350: Storage of Organic Liquids at Bulk Plants and Bulk Terminals	Amend

2. **Statutory authority for the rulemaking:**

Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. **List of public notices addressing the rulemaking:**

Notice of Briefing to Maricopa County Manager: May 2015
Notice of Stakeholder Workshops: June 29, 2015, September 14, 2015, and February 22, 2016

4. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name:	Cheri Dale or Hether Krause
	Maricopa County Air Quality Department
	Planning and Analysis Division
Address:	1001 N Central Avenue, Suite 125
	Phoenix, Arizona 85004
Telephone:	(602) 506-6010
Fax:	(602) 506-6179
E-mail:	aqplanning@mail.maricopa.gov

5. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary: Rule 350 limits the emission of volatile organic compounds (VOCs) from organic liquids under actual storage conditions. The rule is applicable to bulk storage of organic liquids in a bulk plant or bulk terminal stationary storage tank which is used primarily to fill delivery vessels for both the organic liquid (non-gasoline) and the gasoline industries.

Rule 350 was last revised over twenty-five years ago. Technologies have changed over time. The organic liquid (non-gasoline) and gasoline storage and distribution industries use different terminology, definitions and methods of operation. Proposed rule revisions include the separation of organic liquids (non-gasoline) from the gasoline storage requirements. In addition the proposed rule will add the organic liquid transfer requirements to Rule 351. The gasoline storage requirements currently in Rule 350 are proposed to be moved to Rule 351 (Loading of Organic Liquids). The proposed revisions in Rule 350 will update and clarify the county regulatory requirements and authority for the organic liquid (non-gasoline) industry and the gasoline industry. In addition, the proposed revisions to Rule 350 will address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS).

In addition, the proposed amendments correct typographical or other clerical errors; make minor grammatical changes to improve readability or clarity; modify the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or make various other minor changes of a purely editorial nature. As these changes do not alter the sense, meaning, or effect of the rules, they are not described in detail

here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 14 of this notice.

Background: As early at the 1960's, the Maricopa County Health Department (as the department was then called), Air Pollution Control regulations, Section IV, Handling of Materials, Regulation 1, required "Material such as…gasoline or other volatile compounds…be kept, processed, used, and transported in such a manner and by such means that they will not unreasonably leak, escape, evaporate or be otherwise discharged into the ambient air so as to cause or contribute to air pollution…"[1] This early rulemaking established the basis for the current Rule 350. In 1970, the passage of the Clean Air Act established federal air quality standards.

Congress established the basic structure of the Clean Air Act (CAA) in 1970. The CAA requires the U.S. Environmental Protection Agency (EPA) to establish national ambient air quality standards (NAAQS) for common and widespread pollutants based on the most current science available. For areas that were determined to be in nonattainment of the NAAQS, the state was required to adopt federally enforceable state implementation plans (SIP) in order to achieve and maintain air quality and meet the federally established air quality standards (the NAAQS)[2]. The states were responsible for developing and implementing rules that require reasonably available control technology (RACT) for sources of VOCs located in the designated ozone nonattainment areas. Local air agencies were required to establish RACT for source categories not already covered by EPA's Control Techniques Guidelines (CTGs) as well as tighten RACT for source categories for which RACT had already been defined in the NAAQS[3]. EPA defined RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility" (44 FR 53762; September 17, 1979).

In the 1970's, using the EPA NAAQS and CTGs to identify the established RACT standards, the Maricopa County Bureau of Air Pollution Control (as the department was then called) revised and renumbered the county air pollution rules and regulations. The revised county rules established specific requirements for petroleum products in Regulation III, Rule 33: Storage and Handling of Petroleum Products[4]. This rule established requirements to control vapor loss during storage; submerged filling of tanks; loading dock requirements; and leak proof fill pipe connections.

On March 3, 1978, EPA promulgated a list of ozone nonattainment areas under the provisions of the Clean Air Act, as amended in 1977 (1977 CAA or pre-amended Act). Maricopa County was included on such list 43 FR 8964, March 3, 1978). On February 24, 1984, EPA notified the Governor of Arizona, that the Maricopa County Air Pollution Control District's (MCAPCD), as the department was then called) portion of the Arizona SIP was inadequate and requested that deficiencies in the existing SIP be corrected (EPA's SIP-Call, 49 FR 18827, May 3, 1984). The department was in the process of revising Rule 33 to create Rules 350, 351, 352, and 353 to address the RACT requirements when EPA again notified the Governor of Arizona (May 26, 1988) that MCAPCD's portion of the Arizona SIP was inadequate and requested that deficiencies relating to VOC controls and the application of RACT in the existing SIP be corrected (EPA's second SIP-Call, 53 FR 34500, September 7, 1988).

On November 15, 1990, the Clean Air Act Amendments of 1990 were enacted. In an amended section of the CAA, Congress statutorily adopted the requirement that nonattainment areas fix their deficient RACT rules and established a deadline of May 15, 1991 for states to submit corrections of those deficiencies. The department further revised Rules 350, 351, 352, and 353 to meet the RACT standards. Rule 350 (Storage of Organic Liquids at Bulk Plants), revised July 13, 1988, and April 6, 1992, was approved by the EPA effective October 5, 1995 (60 FR 46024). Rule 351(Loading Organic Liquids) revised July 13, 1988 and November 16, 1992, was approved effective October 5, 1995 (60 FR 46024). Rule 352 (Gasoline Delivery Vessel Testing and Use), revised July 13, 1988, and November 16, 1992, was approved effective October 5, 1995, (60 FR 46024). Rule 353 (Transfer of Gasoline into Stationary Dispensing Tanks) revised July 13, 1988, and April 6, 1992, was approved effective March 4, 1996 (61 FR 3578).

More recently, EPA developed national emission standards for hazardous air pollutants (NESHAPS) for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities (73 FR 1933, Jan. 10, 2008); a NESHAP for Gasoline-Dispensing Facilities (73 FR 1945, Jan. 10, 2008); and the NESHAP for Organic Liquid Distribution (non-gasoline) (69 FR 5063, Feb. 3, 2004). These NESHAPS are often referred to as the maximum achievable control technology (MACT) standards since they were developed to reflect the maximum achievable degree of HAP emission reduction. New MACT standards required

additional or new emissions testing requirements reflecting the new technologies. New and revised test methods and leak detection methods were required in these MACT standards. Although the MACT standards typically apply to large sources, there are test methods and other good practices that are or may be applicable to small area sources of VOC emissions.

Current Rulemaking Background: The department originally adopted Rule 350 (Storage of Organic Liquids at Bulk Plants and Terminals) and Rule 351(Loading of Organic Liquids) to be inclusive of both non-gasoline and gasoline organic liquids. The purpose of the rules was to control the emission of volatile organic compounds (VOCs) from all organic liquids. These rules were required in order for the county to comply with the reasonably available control technology (RACT) documents and other policy statements published by the U.S. Environmental Protection Agency (EPA). Since that time, the organic liquid (non-gasoline) and the gasoline industry have evolved into two distinct industries. The use of different terminology, definitions and methods of operation has created confusion in the applicability of Rule 350 to each industry. In this rulemaking, the department is proposing to draft rules specific to the organic liquid (non-gasoline) storage and distribution industry and for the gasoline storage and distribution industry. This rulemaking is not proposing new rules for the industries but rather proposing revisions to current rules that will improve the clarity and enforceability of the regulatory requirements for each industry.

The proposed revisions include the separation of the organic liquid (non-gasoline) requirements and the gasoline requirements of Rule 350. The organic liquid (non-gasoline) storage requirements in Rule 350 and the organic liquid "loading" requirements Rule 351 (Loading of Organic Liquids) are proposed to be combined and included into one rule, Rule 350. The gasoline storage requirements in Rule 350 are proposed to be moved into Rule 351. Along with this proposed separation of the two industry requirements, the department is proposing to rename the rule to reflect the proposed rule revisions.

In addition, the department proposes to lower the rule applicability to include organic liquids (non-gasoline) with a true vapor pressure of 0.5 psia. The lowering of the applicability is proposed to meet current RACT.

Other proposed revisions include the relocation of any exemptions to Section 100; inclusion of definitions and terms specific to the organic liquid industry; to specify the organic liquid regulatory requirements for transferring the organic liquid; to add monthly equipment leak inspection requirement; to add optical gas imaging as an alternative work practice to monitor and identify leaking equipment.

Issues Raised and Discussed During This Rulemaking Process:

The department held three Stakeholder workshops: June 29, 2015, September 14, 2016, and February 22, 2016. Stakeholders included representatives from APS, Caljet, CDM Smith, Cemex, City of Glendale, City of Mesa, City of Phoenix, EnCore Consulting, Envirosure Solutions, Kiewit, Pinal County, SRP, Washington Elementary School, and EPA.

During the workshops, Stakeholders expressed concerns that the proposed Rule 350 would include any organic liquid stored at any site. The rule title was revised. The purpose and applicability of the proposed rule were revised to clarify the proposed rule was applicable to the storage and transfer of organic liquids at a distribution facility and not at a facility that is the end user of the organic liquid. The proposed rule does not apply to the storage and transfer of organic liquids at a facility that does not distribute the organic liquid to be "consumed by other parties." (Rule 350 definition of "Organic Liquid Distribution Facility")

Definitions pertaining to the gasoline industry are proposed to be deleted. The definition of GASOLINE was left in the rule because the proposed exemption section specifically exempts gasoline from the proposed rule. The proposed exemptions were taken from 40 CFR 63.2406, the Organic Liquid Distribution NESHAP. The proposed partial exemptions in proposed Rule 350 were either retained from current Rule 350 or taken from current Rule 351 if they pertained to organic liquid (non-gasoline).

Stakeholders were concerned that the applicability of the proposed rule would include all storage containers used for organic liquids. The department is proposing to include partial exemptions for organic liquids with a true vapor pressure less than 0.5 psia; storage containers with a capacity less than 250 gallons; a pressure tank; the floating of a floating roof tank; and gap inspections.

Stakeholders also requested the addition or revision of numerous definitions to reflect the rule applicability to the organic liquid industry and not the gasoline industry. The department is proposing to revise the definitions in the proposed rule.

To further clarify the requirements for organic liquid storage tanks, the department proposed to the Stakeholders to add a table describing tank size and the applicable rule section number

that describes the VOC emission control requirements. Stakeholders supported this addition to the rule.

Description of Proposed Amendments:

Propose to revise the following throughout the rule:

* To delete references to gasoline loading and storage
* To change the word "loading" to "transfer"
* To delete the word "person" and inset the words "owner or operator"
* To delete past compliance dates
* To add or revise specific rule section references

Propose the following in Section 100:

* To revise Section 101 (Purpose) to include the storage and transfer of organic liquid (non-gasoline) at an organic liquid distribution facility
* To revise Section 102 (Applicability) to apply to the bulk storage and transfer of organic liquid (non-gasoline) at an organic liquid distribution facility
* To add Section 103 (Exemptions) to include total exemptions and partial exemptions

Propose the following in Section 200:

* To delete BULK PLANT
* To delete BULK TERMINAL
* To delete DELIVERY VESSEL
* To add CARGO TANK
* To add CONTAINER
* To add EXCESS ORGANIC LIQUID DRAINAGE
* To add EXTERNAL FLOATING ROOF STATIONARY STORAGE
* To delete GAS TIGHT
* To add INTERNAL FLOATING ROOF STATIONARY STORAGE TANK WITH FIXED ROOF
* To add LEAK FREE
* To delete LOADING FACILITY
* To revise ORGANIC LIQUID
* To revise SUBMERGED FILL
* To add VAPOR COLLECTION/PROCESSING SYSTEM
* To add VAPOR BALANCE SYSTEM

Propose the following in Section 300:

* Section 301: To clarify the requirements of a stationary storage tanks
* Section 301.2: To list requirements of a stationary storage tank with a capacity greater than 250 gallons to have a gasketed covered fill pipe; submerged fill and a pressure/vacuum vent valve
* Section 302: To delete the gasoline storage tank requirement
* Section 303: To renumber to Section 301.2 and to list requirements of stationary storage tanks with a capacity of 20,000-40,000 gallons to include the requirements of proposed Section 301.1 and to comply with one method of vapor loss control
* Section 304: To renumber to Section 301.3 and to list requirements of stationary storage tanks with a capacity of 40,000 gallons or more to include the installation of a floating roof tank or a vapor collection/processing system
* Section 305: To renumber to Section 301.4 and to list out the existing requirements
* To add Table 350-1 Summary of Organic Liquid (Non-Gasoline) Stationary Storage Tank VOC Emission Control Requirements
* Section 306: To renumber to Section 302 Vapor Loss Control System and list out existing requirements for floating roof tanks and vapor balance systems
* Section 307: To renumber to Section 302.2 Internal Floating Roof Stationary Storage Tanks with Fixed Covering.
* Section 308: To renumber to Section 302.4 Vapor Collection/Processing System
* To add proposed Section 302.5 - equipment maintenance and repair requirements
* To add proposed Section 303: General Requirements for the Transfer of Organic Liquid into Storage Tanks and Into Cargo Tankers
* To delete Section 309
* To delete Section 310

Propose the following in Section 400:

* To delete Section 401 Annual Inspections of External Floating Roof Stationary Storage Tank
* To delete Section 402 Annual Inspections of Internal Floating Roof Tanks

* To delete Section 402 Annual Inspections of Internal Floating Roof Tanks
* To delete Section 403 Five-Year, Full Circumference Inspections
* To delete Section 404 Semi-Annual Inspections by Owner or Operator
* To delete Section 405 Compliance Schedule
- To add Section 401 Organic Liquid (Non-Gasoline Storage Tank Inspections
* To add Section 401.1 Semi-annual Inspections by Owner or Operator
* To add Section 401.2 Inspections of External Floating Roof Stationary Storage Tanks
- To add Section 401.3 Inspections of Internal Floating Roof Stationary Storage Tanks with a Fixed Roof Covering
* To add Section 402 Monthly Organic Liquid Transfer Equipment Leak Inspections
* To add Section 403 Organic Liquid (Non-Gasoline) Storage Tank Inspections-Availability to Control Officer
* To add Section 403.1 Annual Inspections of External Floating Roof Tanks
- To add Section 403.2 Annual Inspections of Internal Floating Roof Tanks
* To add Section 403.3 Five-Year, Full Circumference Inspections
* To add Section 404 Other Agencies Requirements

Propose the following in Section 500:

* To delete Section 501
* To delete Section 502
* To add Section 501 Compliance Inspections
* To add Section 502 Record Retention
* To add Section 503 Vapor Pressure Records
* To add Section 504 Leak Inspection Records
* To add Section 505 Leak Concentrations
* To add Section 506 Compliance Determination – Test Methods to include EPA Test Methods; California Air Resources Board (CARB) Test Procedure; ASTM Standard Test Methods; and Leak Detection Test Procedure

6. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
   (a) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
   (b) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. While currently classified as a "marginal" ozone nonattainment area, the county recently failed to meet 2008

8-hour ozone standard by the marginal area attainment date and anticipates EPA will issue a notice proposing to re-classify the area to "moderate". Further, a portion of the county was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the county to continue to maintain the measures and requirements that allowed the county to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM_{10} 24-hour standard. This is the only serious PM_{10} nonattainment area in Arizona. Revisions to Rule 350 are being proposed to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The department complies with A.R.S. § 49-112(B) in that the proposed amendments to Rule 350 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49, address the peculiar local conditions in Maricopa County, are authorized under A.R.S. Title 49, Chapter 3, Article 3, and are not in lieu of a state program.

7. **Documents and/or studies referenced and/or reviewed for this rulemaking:**
Not applicable

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

9. **Preliminary summary of the economic, small business, and consumer impact:**
The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

An identification of the rulemaking.
This rulemaking is proposing to revise Rule 350 (Storage of Organic Liquids at Bulk Plants and Terminals). The revised Rule will be titled: Storage and Transfer of Organic Liquids (Non-Gasoline) at An Organic Liquid Distribution Facility.

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.
The persons who will be directly affected by and bear the costs of this rulemaking will be facilities in Maricopa County that engage in the bulk storage and transfer of any organic liquid (non-gasoline) with a vapor pressure 0.5 psia or greater at an organic liquid distribution facility. The department has issued permits to 26 facilities subject to Rule 350, prior to revision.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**
Because this rulemaking does not impose any new compliance burdens on permitted regulated entities or introduce additional regulatory requirements, the department deemed that none of the revisions have potentially significant economic impacts on permitted sources. It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.
The assumptions of savings with the rule revisions will be reviewed after rule implementation to confirm their effectiveness. However, the benefits of the rule revision are anticipated to be a result of the following changes:

- Changing the title of the rule to: Storage and Transfer of Organic Liquids (Non-gasoline) at An Organic Liquid Distribution Facility);
- Requiring standards at organic liquid distribution facilities for stationary storage tanks with a capacity greater than 250 gallons for organic liquids with a true vapor pressure (TVP) of 0.5 psia or more;
- Moving requirements originally in Rule 351 that applied to organic liquid (non-gasoline) storage and transfer to revised Rule 350 to consolidate all of the organic liquid requirements in one rule.
- Allowing partial exemptions for organic liquids with a true vapor pressure less than 0.5 psia; storage containers with a capacity less than 250 gallons; a pressure tank; the floating of a floating roof tank; and gap inspections;
- Defining numerous additional and revised definitions to reflect the rule applicability to the organic liquid industry and not the gasoline industry.

The sources subject to revised Rule 350 already have permits in which these requirements are addressed. Therefore, this revised rule does not impose new

requirements on the permitted facilities, and no costs would be incurred for compliance with the rule revisions.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity provided by the Rule 350 revisions will provide a benefit to the regulated community; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision will not impose increased monetary or regulatory costs on individuals so regulated.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated.

(a) **An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County that engage in the bulk storage and transfer of any organic liquid (non-gasoline) with a vapor pressure of 0.5 psia or more.

(b) **The administrative and other costs required for compliance with the rulemaking.**

This rulemaking updates and clarifies existing rule provisions and definitions to be consistent with federal performance standards, and to reduce confusion and improve understanding and readability. The department considered the implications of the proposed amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**

By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**

This rulemaking does not impose any new compliance burdens on permitted regulated entities or introduce additional regulatory requirements and will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated. As such, there are no costs to pass through to consumers, which means there are no impacts on consumers.

A statement of the probable effect on state revenues.

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

10. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name: Cheri Dale or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, AZ 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

11. **Time, place, and nature of the proceedings for the rulemaking:**

Written oral proceeding requests or written comments or both will be accepted until the record is closed on June 13, 2016, 5:00 p.m. Written oral proceeding requests or written comments or both may be mailed, e-mailed, or hand delivered to the department (see Item #4 of this notice). An oral proceeding will be scheduled only upon receipt of a written request before the record is closed on June 13, 2016, 5:00 p.m. Written comments received during the comment period and before the record is closed on June 13, 2016, 5:00 p.m. will be considered formal comments to the Notice of Proposed Rulemaking and will be responded to in the Notice of Final Rulemaking.

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

Not applicable

13. **Incorporations by reference and their location in the rule:**

The following test methods are incorporated by reference in Rule 350, Section 506:

* EPA Method 2A - Direct Measurement of Gas Volume Through Pipes and Small Ducts
* EPA Method 18 - Measurement of Gaseous Organic Compound Emissions by Gas Chromatography
* EPA Method 21 - Determination of Volatile Organic Compound Leaks
* EPA Method 25A - Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer
* EPA Method 25A - Determination of Total Gaseous Organic Concentration Using a Nondispersive Infrared Analyzer
* EPA Method 27 - Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure Vacuum Test
* Optical Gas Imaging: Alternative Work Practice for Monitoring Equipment Leaks, 40 CFR 60.18(g)
* California Air Resources Board (CARB) - Test Procedure TP-201.1E Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves, October 8, 2003
* ASTM D2879-10 Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope
* ASTM D6420-99 (Reapproved 2004), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry

14. **Full text of the rule follows:**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 350
STORAGE AND TRANSFER OF ORGANIC LIQUIDS (NON-GASOLINE) AT ~~BULK PLANTS AND BULK TERMINALS~~ AN ORGANIC LIQUID DISTRIBUTION FACILITY
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~~Revised 07/13/88~~

Revised 07/13/1988; Revised 04/06/1992; **Revised MM/DD/YYYY**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 350

STORAGE AND TRANSFER OF ORGANIC LIQUIDS (NON-GASOLINE) AT ~~BULK PLANTS AND TERMINALS~~ 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 ~~transfer and~~ bulk storage and transfer of any organic liquid (non-gasoline) with a true vapor pressure greater than 0.5 psia ~~in a bulk plant or bulk terminal stationary storage tank which is used primarily to fill delivery vessels.~~ at an organic liquid distribution facility. Compliance with the provisions of this rule shall not relieve any person subject to the requirements of this rule from complying with any other federally enforceable New Sources Performance Standards (NSPS) 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 true vapor pressure less than 0.7 kilopascals (0.1 psia). [40 CFR §63.2406]

103.2 **Partial Exemptions:**

a. Organic liquids having a true vapor pressure less than 0.5 psia (25.8 mm Hg) as determined by test methods in Section 500 of this rule are exempt from the organic liquid transfer requirements of Section 304 of this rule.
b. 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.
c. 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(c)(i) 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 owners or operators 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.
d. **Submerged Fill:** A 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.
e. 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.

f. 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.

g. 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.

h. **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 loading process.

(2) When VOC vapors from organic liquids are present within a non-exempt cargo tank, authorized government agents as well as owners or operator and their contractors may open vapor containment equipment while performing operations required by Department rules 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 transfer is complete or cargo tank has stopped 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 BULK PLANT - Any loading facility at which gasoline and/or other organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under any actual storage conditions are received from delivery vessels for storage in on-site stationary tanks, and from which such liquids also are transferred to delivery vessels.~~

~~202 BULK TERMINAL - Any primary distributing loading facility which has ever received in any consecutive 30-day period over 600,000 gallons (2,271,180 l) of gasoline and/or other organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under actual storage conditions; or any loading facility where delivery of such liquids to the facility is primarily by pipeline.~~

~~203 DELIVERY VESSEL - Any vehicular-mounted container such as a railroad tank car, tanker truck, tank trailer or any other mobile container used to transport organic liquids.~~

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) ~~per disconnect.~~ 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.

~~204 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.~~

205 GASOLINE - ~~Any petroleum distillate, petroleum distillate/alcohol blend, petroleum distillate/organic compound blend, or alcohol having a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under any actual conditions of storage and handling, and which is used as a fuel for internal combustion engines.~~ 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.

~~206~~ ~~LOADING FACILITY - Any operation or facility such as a gasoline storage tank farm, pipeline terminal, bulk plant, loading dock or combination thereof, where organic liquids are transferred or loaded into or out of delivery vessels 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 person or persons under common control.~~

~~207~~ **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]

~~208~~ **210** **STATIONARY STORAGE TANK:** Any tank, reservoir or other container used to store, but not transport, organic liquids.

~~209~~ **211** **SUBMERGED FILL** ~~PIPE~~**:** Any organic liquid discharge pipe or nozzle which meets at least one of the applicable specifications: ~~as follows:~~

~~209.1~~ **211.1** **Top-Fill or Bottom-Fill** ~~Tanks~~**:** 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.

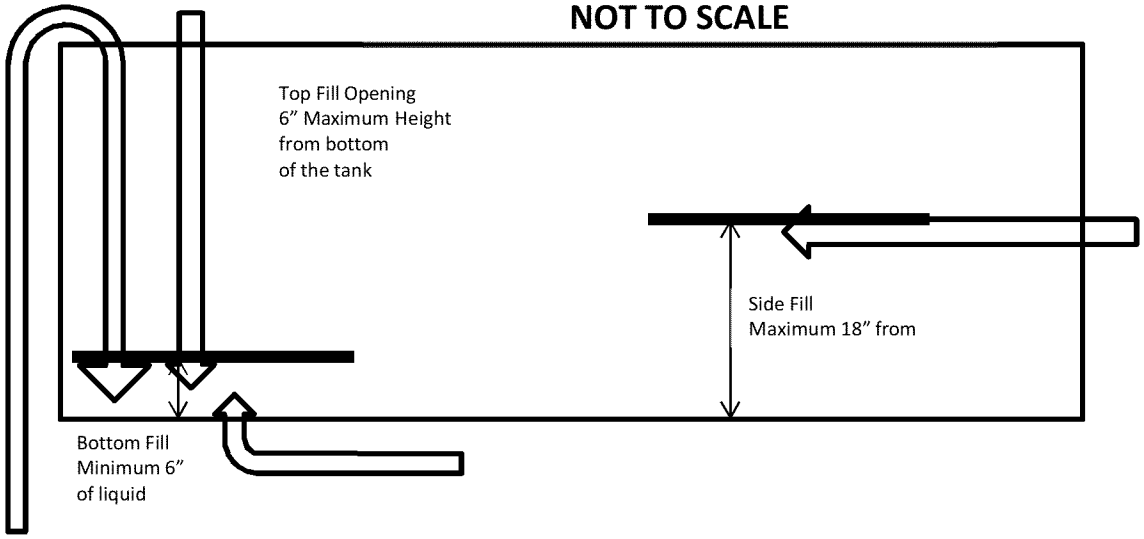
~~209.2~~ **211.2** **Side-Fill:** At its highest point within the storage tank, ~~The~~the end of the discharge pipe or nozzle is totally submerged when the liquid level is 18 inches (46 cm) from the bottom of the tank.

211.3 **API Standard 650 Compliant:** A floating roof storagetank containingan organic liquid meets the submerged fill requirements of this Rule 350 if the discharge pipe or nozzle meets both of the following requirements:

a.Is kept completely submerged, including when the roof rests on its legs, except when the tank is being emptied completely and refilled; and

b.Is designed and installed according to the API Standard 650.

Submerged Fill Diagram
NOT TO SCALE



~~210~~ **212** **TRUE VAPOR PRESSURE (TVP):** Absolute vapor pressure of a liquid at its existing temperature of storage and handling.

213 **VAPOR BALANCESYSTEM:** A s y s tm 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/PROCESSINGSYSTEM:** A v a p oloss 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.

~~211~~ **215** **VAPOR LOSS CONTROL** ~~DEVICE~~ **SYSTEM:** ~~Any piping, hoses, equipment, and devices which are used to collect, store and/or process organic vapors at a bulk terminal, bulk plant, service station or other operation handling gasoline and/or other organic liquids.~~ 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.

~~212~~ **216** **VAPOR TIGHT:** A condition ~~where no organic vapor leak reaches or exceeds 100 percent of the lower explosive limit at a distance of one inch (2.5 cm) from a leak when measured with a combustible gas detector or an organic vapor analyzer, both calibrated with propane~~ 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 LEL (lower explosive limit) subsequent to calibration with a gas specified bythe manufacturer and is used according to the manufacturer'sinstructions.

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):** ~~No person shall install or use a stationary storage tank with a capacity greater than 250 gallons (946 l) for storing organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or more unless such a tank meets the following requirements:~~ An owner or operator of a stationary storage tank with a capacity greater than 250 gallons (946 l) shall store organic liquid with a true vapor pressure (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.

~~301.1~~ **b.** ~~The~~ 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 6 inches of the tank bottom shall be used to fill the tank.

~~Note[2]~~

~~[2] This note is not part of Rule 350, but is provided for the reader's convenience. The requirement of subsection 301.2 for a pressure/vacuum valve is not applicable to floating roof tanks.~~

301.2 **c.** Each fixed roof stationary storage ~~The~~ tank has a pressure/vacuum valve that complies with both Section 301.2(c)(i) and 301.2(c)(ii) of this rule. ~~which is set within ten percent of the tank's maximum, safe working pressure.~~ An owner or operator shall:

(1) Install a pressure/vacuum vent valve that is either:

(a) Set the within ten percent 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.

~~302 GASOLINE STORAGE TANKS BETWEEN 250 AND 40,000 GALLONS (946 - 151,400 L): No person shall store gasoline in a stationary storage tank with a capacity less than 40,000 gallons (151,400 l) but greater than 250 gallons (946 l) unless the tank is equipped with a vapor recovery system which collects and returns displaced vapors to the delivery vessel using vapor-tight fittings and lines; or such tank uses at least one of the vapor loss control methods in Sections 306, 307, or 308 of this rule.~~

~~303~~ **301.2 Organic Liquid Stationary Storage Tanks with a Capacity of 20,000 ~~Through 39,999~~ Gallons to Less than 40,000 Gallons ~~Capacity (75,700~~ (946 L - 151,396 L):** ~~No person shall store organic liquids with a true vapor pressure (TVP) of 1.5 psia through 11.0 psia (77.5 mm 569 mm Hg) in a stationary tank with a capacity from 20,000 through 39,999 gallons (75,700 - 151,396 l) unless the tank is equipped with a vapor recovery system which collects and returns displaced vapors to the delivery vessel using vapor-tight fittings and lines; or such tank uses at least one of the vapor loss control methods specified in Sections 306, 307, or 308 of this rule.~~ An owner or operator of an organic liquid stationary storage tank with a capacity between 20,000 gallons but less than 40,000 gallons, shall store organic liquid with a true vapor pressure (TVP) of 0.5 psia through 11.0 psia (26 mm - 569 mm Hg) in a stationary storage meeting all of the following requirements:

a. The 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.

~~304~~ **301.3 Organic Liquid Stationary Storage Tanks with a Capacity Equal to or Greater than ~~Of~~ 40,000 Gallons (151,400 L) ~~or More~~:** ~~No person shall place, store or hold in any stationary storage tank having a capacity of 40,000 gallons (151,400 L) or more, any gasoline or organic liquid having a true vapor pressure of 1.5 or greater 1.5 through 11.0 psia (77.5 mm Hg - 569 mm Hg) under actual storage conditions, unless such storage tank is equipped with at least one of the vapor loss control devices specified in Sections 306, 307, or 308.~~ An owner or operator of organic liquid stationary storage tanks with a capacity equal to or greater than 40,000 gallons, shall store any organic liquid with a true vapor pressure (TVP) 0.5 through 11.0 psia (26 mm Hg - 569 mm Hg) in a stationary storage tank 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. Install and maintain a vapor collection/processing system.

~~305~~ **301.4 Organic Liquid Stationary Storage TanksStorin g Liquids Having Vapor Pressures Exceeding 11 Psia:** ~~No person shall place, store, or hold in a stationary tank having a capacity over 250 gallons (946 l) organic liquid(s) with a true vapor pressure above 11.0 psia (569 mm Hg) unless such a tank is either a pressure tank~~

~~maintaining working pressure sufficient at all times to prevent organic vapor/gas loss to the atmosphere or is equipped with a vapor collection/processing system specified in Section 308 of this rule.~~ An owner or operator shall place, store, or hold organic liquid with a true vapor pressure above 11.0 psia (569 mm Hg) in a stationary storage tank that meets at least one of the vapor loss control methods specified in 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≥ psia <1.5	1.5≥ psia <11.0	≥11.0 psia
Tank Capacity	Applicable Rule 350Section:	Applicable Rule 350Section:	Applicable Rule 350 Section:
All organic liquid (non-gasoline) stationary storage tanks 250 gallons	Section301.1	Section301.1	Section 301.4
All organic liquid (non-gasoline) storage tanks 20,000 gallons to <40,000 gallons	Section301.1	Section 301.1 and Section 301.2	Section 301.4
All organic liquid (non-gasoline) storage tanks ≥40,000 gallons	Section 301.1	Sections 301.1 and Section 301.3	Section 301.4

302 VAPOR LOSS CONTROL SYSTEM:

~~306~~ **302.1 External Floating Roof Stationary Storage Tanks:** ~~This vapor loss control device is an uncovered floating roof consisting of either a pontoon type or a double-deck type roof. It must rest on and be supported by the surface of the liquid contents, be equipped with a continuous primary seal to close the space between the roof eave and tank wall, except as provided in subsection 309.1 and 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 following requirements:~~ An external floating roof storage tank must meet the following requirements:

a. The owner or operator of an external floating roof tank and associated emission control equipment shall properly install, properly maintain and operate the equipment.

b. **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 petroleum industry. The secondary seal shall meet the following requirements of Section 302.1(c) of this rule.

c. **Secondary Seal Requirements:**

~~306.1~~ **(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 ~~subsection 306.2~~ Section 302.1(c)(ii) of this rule. Storage tanks constructed after July 13, 1988, shall have a secondary seal that is rim-mounted. Except for tanks having metallic shoe primary seals onto which secondary seals were installed prior to July 13, 1988, ~~by October 6, 1993 no person~~ an owner or operator shall operate an external floating roof tank subject to the provisions of this rule unless a secondary seal extends from the roof to the tank shell (a rim-mounted seal) and is not attached to the primary seal.

~~306.2~~ **(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 cm^2 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).

~~306.3 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.~~

d. **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 10 square inches per foot of tank diameter (212 cm^2 ~~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.

~~307~~ **302.2 Internal Floating Roof Stationary Storage Tanks with Fixed Covering:** ~~This vapor loss control device is a covered tank with an internal floating roof resting on the contained liquid. This~~ 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.

~~307.1~~ **b.** ~~Bulk terminal tanks~~ 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, as incorporated by reference July 1, 2016.

~~307.2~~ **c.** All stationary storage tanks not subject to ~~subsection 307.1~~ Section 302.2(b) of this rule 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 ~~subsection 309.1~~Section 302.1(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 306 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 (212 cm^2 ~~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.

~~308~~ **302.3** **Vapor Collection/Processing System:** This vapor loss control ~~device~~ 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 in any consecutive 30-day period, shall install, operate and maintain a vapor loss control system.

~~308.1~~ **b.** The vapor processing subsystem shall be ~~gas-tight~~ vapor-tight except for the designated exhaust.

~~308.2~~ **c.** Any tank gauging or sampling device on a tank, vented to such a vapor ~~collection/processing~~loss control system, shall be equipped with a ~~gas-tight~~ vapor-tight cover which shall be closed at all times except during gauging or sampling procedures.

~~308.3~~ **d.** All pressure-vacuum vent valves shall be constructed and maintained in a ~~gas tight~~ 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: Except as superseded by Rule 100, Section 501 of these rules, the owner or operator of a vapor loss control system that exceeds the standards of this rule shall notify the Control Officer and observe the following time schedule in ending such exceedances:

a. Concentrations at or above the lower explosive limit must be brought into compliance within 24 hours of detection.
b. Leak concentrations exceeding 10,000 ppm but less than 50,000 ppm as methane for vapor collection/processing equipment subject to gas-tight standard 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 15 minutes of recommencing use; if leak standards are exceeded in this test, the use of the faulty equipment shall be discontinued within 15 minutes 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 Tankers:**

a. Verify that the cargo tanker 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.

~~309 ADDITIONAL REQUIREMENTS:~~

~~309.1 Prohibition - Floating Roof Openings: Floating roof tanks subject to the provisions of Section 306 or 307 of this rule shall have no visible holes, tears or other openings in the seal or in any seal fabric. The accumulated area of gaps between a tank's wall and primary seal shall not exceed 10 square inches per foot of tank diameter (212 cm^2 per meter) and the width of any portion of any gap shall not exceed 1½ inches (3.8 cm). Where applicable, all openings except drains shall be equipped with a cover seal or lid. The cover seal or lid shall be in a closed position at all times, except when the device is in actual use. Automatic bleeder vents shall be closed at all times, except when the roof is floated off or landed on the roof leg supports. 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.~~

~~309.2 Tanks and all required emission control equipment shall be properly installed, properly maintained and be properly operating.~~

~~310 EXEMPTIONS:~~

~~310.1 A pressure tank maintaining working pressure sufficient at all times to prevent organic vapor or gas loss to the atmosphere is exempt from Sections 301, 302, 303, and 304 of this rule.~~

~~310.2 During the following periods a floating roof is exempt from the requirement that its 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.~~

~~310.3 A horizontal filling nozzle at its highest point within a floating roof tank exceeding 2,000,000 gallons (7,580,000 l) capacity may be up to 39.4 inches (1 meter) above the tank bottom if: except when the tank is emptied completely, the nozzle is kept completely submerged, including when the roof rests on its legs.~~

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

~~401 ANNUAL INSPECTIONS OF EXTERNAL FLOATING ROOF STATIONARY STORAGE TANKS: The owner or operator of any tank which uses an external floating roof to meet the vapor loss control 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 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.~~

~~402 ANNUAL INSPECTIONS OF INTERNAL FLOATING ROOF TANKS: The owner or operator of any tank which uses an internal floating roof to meet the vapor loss control requirements of this rule shall make the entire tank including the internal floating roof available for inspection prior to filling. It shall be made available for visual inspection through the manholes or roof hatches on the fixed covering on an annual basis.~~

~~403 FIVE-YEAR, FULL CIRCUMFERENCE INSPECTIONS: As of July 13, 1988, the owner or operator of a floating roof tank of 20,000 gallons (75,700 l) or more storing an organic liquid with a TVP of 1.5 psia (77.5 mm Hg) or greater shall make the primary seal envelope available for inspection by the Control Officer for its full length every five years. However, if prior thereto 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 working days prior to removal of the secondary seal. The owner or operator shall perform a complete inspection of the primary seal and floating roof, including measurement of gap area and maximum gap, whenever the tank is emptied for non-operational reasons or at least every five years, whichever is more frequent.~~

~~404 SEMI-ANNUAL INSPECTIONS BY OWNER OR OPERATOR: The owner or operator of any floating roof tank subject to this rule shall inspect the tank and seals at least once every six months to determine ongoing compliance with both the applicable standards of this rule and any permit conditions pertaining to the tank. Determinations of secondary seal gap area on external floating roofs need be made only once per year. Records of these inspections shall be maintained and shall be made available to the Control Officer upon request.~~

~~405 COMPLIANCE SCHEDULE: By October 6, 1992, any person subject to Section 300 who does not comply with all its provisions shall submit to the Control Officer for approval an emission control plan describing the method(s) to be used to achieve full compliance by October 6, 1993. This plan shall specify dates for completing increments of progress, such as the contractual arrival date of new control equipment. The Control Officer may require a person submitting such an emission control plan to submit subsequent reports on progress in achieving compliance.~~

401 ORGANIC LIQUID (NON-GASOLINE) STORAGE TANK INSPECTIONS

Semi-Annual Inspections by Owner or Operator: The owner or operator of any floating roof tank subject to this rule shall visually inspect the tank and seals at least once every six months to determine ongoing compliance with both the applicable standards of this rule and any permit conditions pertaining to the tank. Determinations of secondary seal gap area on external floating roofs need be made only once per year. Records of these inspections shall be maintained and shall be made available to the Control Officer upon request.

Inspections of External Floating Roof Stationary Storage Tanks:

a. **Annual and Empty Tank Inspection:** The owner or operator of any tank which uses an external floating roof to meet the vapor loss control requirements of this rule shall conduct a visual inspection each time the external floating roof 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 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.
   (3) Verify there are no holes, tears, or other openings in the seal or seal fabric.

b. **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 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 gasoline storage tank as described in Section 401.2 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 212 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm.

INSPECTIONS OF INTERNAL FLOATING ROOF STATIONARY STORAGE TANKS WITH A FIXED ROOF COVERING:

a. The owner or operator of any tank which uses an internal floating roof to meet the vapor loss control requirements of this rule shall conduct a visual inspection each time the internal floating roof 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.

b. **Five Year Inspection and Empty Tank Inspection:** The owner or operator of any tank which uses an internal floating roof to meet the vapor loss control

requirements of this rule shall conduct a visual inspection each time the internal floating roof tank is emptied and degassed or at least once every five (5) years. The visual inspection shall include all of the following:

(1) The internal floating roof shall be free of any defects.

(2) The primary seal shall not have any holes, tears or other openings.

(3) The secondary seal if one is in service, shall not have any holes, tears or other openings.

(4) Gaskets shall prevent liquid surfaces from exposure to atmosphere.

(5) 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 detection methods can include one or more of the following methods located in Section 501 of this rule:

Incorporation of sight, sound, smell and/or touch.

Use of a combustible gas detector or organic vapor analyzer (OVA).

Method 21-Determination of Volatile Organic Compound Leaks, Alternative Screening Procedure 8.3.3, use of a soap solution.

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 tank which uses an external floating roof to meet the vapor loss control 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 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 tank which uses an internal floating roof to meet the vapor loss control requirements of this rule shall make the entire tank including the internal floating roof available for inspection prior to filling. It 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 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 working days prior to removal of the secondary seal.

404 OTHER AGENCIES' REQUIREMENTS: Compliance with this rule does not relieve or otherwise affect a person'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 Weights and Measures, local fire department codes, and local zoning ordinances.

SECTION 500 – MONITORING AND RECORDS

~~501 VAPOR PRESSURE RECORDS: A person whose tanks are subject to the provisions of this rule shall keep accurate records of liquids stored in such tanks including either the true or the Reid vapor pressure ranges of each such liquid. The temperature of the contents of each affected tank located at bulk terminals shall be recorded at least weekly and the true vapor pressure of each shall be recorded at least once each month. These records shall be kept a minimum of three years.~~

~~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 determined by any of the applicable test methods constitutes a violation of this rule.~~
~~Determination Of Vapor-Tight Condition: Applicable procedures of Rule 351, Section 501.~~
~~Emission Rates And Control Device Efficiency: EPA Reference Methods 2A, 2B, 18 and 25A.~~
~~Gaseous Leak Detection And Determination Of Gas-Tight Condition: EPA Method 21.~~
~~Reid Vapor Pressure: Reid vapor pressure shall be determined by ASTM Method D323-82 or by ASTM Method D-5191.~~
~~True Vapor Pressure: True vapor pressure shall be determined by ASTM Method 2879-83 and by temperature measurement under actual conditions using an instrument accurate to within ± 1 degree Fahrenheit or ± 0.5 degree Celsius. For purposes of recording and reporting, the Reid vapor pressure and the foregoing temperature determination may be used in conjunction with the method of American Petroleum Institute Bulletin 2517,February, 1980, to determine true vapor pressure, unless the Control Officer specifies ASTM Method 2879-83.~~

501 MONITORING FOR LEAKS

COMBUSTIBLE GAS DETECTOR 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 combustible gas detector or organic vapor analyzer (OVA) as follows:

a. **Calibration:** Within four (4) hours prior to monitoring the combustible gas detector or OVA shall be calibrated with 10,600 ppm propane by volume in air for a 50 percent lower explosive limit (LEL) response.

b. **Probe Distance:** The probe inlet shall be one inch (2.5 cm) or less from the potential leak source when searching for leaks. The probe inlet shall be one 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 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 a potential or actual 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 a 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 402 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 leakage shall be recorded along with the date and time.

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: An owner or operator 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.

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 VAPOR PRESSURE RECORDS: The owner or operator of an organic liquid distribution facility shall keep accurate records including, but not limited to the records listed in Section 502 of this rule.

An owner or operator shall keep accurate records of liquids stored in each storage tank subject to this Rule 350.

The temperature of the contents of each storage tank subject to this Rule 350, shall be determined and recorded using at least one of the following methods:

a. Take the actual temperature of the contents of the storage tank each week and record the weekly temperature of the contents of each storage tank.
b. Obtain the maximum local monthly average ambient temperature as reported by the National Weather Service and record monthly for each storage tank.
c. AP 42, Section 7.1 emission estimation procedures and record monthly for each storage tank.

The true vapor pressure of each organic liquid in each storage tank subject to this Rule 350, 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, but is not limited to the items listed in Section 503 of this rule.

The owner or operator shall sign the log at the completion of each monthly inspection for equipment leaks.

Each monthly inspection shall include shall contain a list, summary description or diagram(s) showing the location of all equipment at the organic liquid distribution facility.

Each monthly inspection shall include any maintenance that occurred.

Each annual inspection shall include any maintenance that occurred.

These records shall be kept a minimum of five (5) years.

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 system, an organic liquid transfer rack's vapor loss control systems, a transfer 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.

~~502~~ **506 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. Copies of the code of federal regulations are available electronically at: http://www.gpo.gov/fdsys/browse/collectionCfr. action?collectionCode=CFR;at the Maricopa County Air Quality Department, 1001 N. Central Ave., Suite 125, Phoenix, AZ, 85004; or by calling (602) 506-6010 for information. ASTM standards are available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428, or from its website at www.astm.org.

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 Isoteniscope.

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).

~~Last Formatted - Fall 1997~~

NOTICE OF PROPOSED RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 351: LOADING OF ORGANIC LIQUIDS
PREAMBLE

1. **Rule affected** **Rulemaking action**

Rule 351: Loading of Organic Liquids — Amend

2. **Statutory authority for the rulemaking:**

Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. **List of public notices addressing the rulemaking:**

Notice of Briefing to Maricopa County Manager: May 2015
Notice of Stakeholder Workshops: June 30, 2015, September 14, 2015, and February 22, 2016

4. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name: Cheri Dale or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, Arizona 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

5. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary: Rule 351 limits the emission of volatile organic compounds (VOCs) from organic liquids under actual loading conditions. The rule is applicable to the transfer of organic liquids having a true vapor pressure of 1.5 psia or greater under actual loading conditions. The rule regulates the transfer of organic liquids from a stationary storage tank located at a bulk plant or bulk terminal into and out of delivery vessels. Rule 351 applies to both the organic liquid (non-gasoline) and the gasoline industries.

Rule 351 was last revised over twenty-five years ago. Technologies have changed over time. The gasoline industry and the organic liquid (non-gasoline) industry and use different terminology, definitions and methods of operation. Revisions proposed in Rule 351 include the separation of gasoline requirements from the organic liquids (non-gasoline). The organic liquid (non-gasoline) transfer requirements are proposed to be included in Rule 350 (Storage of Organic Liquids at Bulk Plants and Bulk Terminals). The gasoline storage requirements currently in Rule 350 are proposed to be moved to Rule 351. These proposed rule revisions

will update and clarify the county regulatory requirements and authority for the both the gasoline industry and the organic liquid (non-gasoline) industry. In addition, the proposed revisions to Rule 351 will address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS).

In addition, the proposed amendments correct typographical or other clerical errors; make minor grammatical changes to improve readability or clarity; modify the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or make various other minor changes of a purely editorial nature. As these changes do not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 14 of this notice.

Background: As early at the 1960's, the Maricopa County Health Department (as the department was then called), Air Pollution Control regulations, Section IV, Handling of Materials, Regulation 1, required "Material such as…gasoline or other volatile compounds…be kept, processed, used, and transported in such a manner and by such means that they will not unreasonably leak, escape, evaporate or be otherwise discharged into the ambient air so as to cause or contribute to air pollution…"[1] This early rulemaking established the basis for the current Rule 350. In 1970, the passage of the Clean Air Act established federal air quality standards.

Congress established the basic structure of the Clean Air Act (CAA) in 1970. The CAA requires the U.S. Environment Protection Agency (EPA) to establish national ambient air quality standards (NAAQS) for common and widespread pollutants based on the most current science available. For areas that were determined to be in nonattainment of the NAAQS, the state was required to adopt federally enforceable state implementation plans (SIP) in order to achieve and maintain air quality and meet the federally established air quality standards (the NAAQS)[2]. The states were responsible for developing and implementing rules that require reasonably available control technology (RACT) for sources of VOCs located in the designated ozone nonattainment areas. Local air agencies were required to establish RACT for source categories not already covered by EPA's Control Techniques Guidelines (CTGs) as well as tighten RACT for source categories for which RACT had already been defined in the NAAQS[3]. EPA defined RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility" (44 FR 53762; September 17, 1979).

In the 1970's, using the EPA NAAQS and CTGs to identify the established RACT standards, the Maricopa County Bureau of Air Pollution Control (as the department was then called) revised and renumbered the county air pollution rules and regulations. The revised county rules established specific requirements for petroleum products in Regulation III, Rule 33: Storage and Handling of Petroleum Products[4]. This rule established requirements to control vapor loss during storage; submerged filling of tanks; loading dock requirements; and leak proof fill pipe connections.

On March 3, 1978, EPA promulgated a list of ozone nonattainment areas under the provisions of the Clean Air Act, as amended in 1977 (1977 CAA or pre-amended Act). Maricopa County was included on such list 43 FR 8964, March 3, 1978). On February 24, 1984, EPA notified the Governor of Arizona, that the Maricopa County Air Pollution Control District's (MCAPCD), as the department was then called) portion of the Arizona SIP was inadequate and requested that deficiencies in the existing SIP be corrected (EPA's SIP-Call, 49 FR 18827, May 3, 1984). The department was in the process of revising Rule 33 to create Rules 350, 351, 352, and 353 to address the RACT requirements when EPA again notified the Governor of Arizona (May 26, 1988) that MCAPCD's portion of the Arizona SIP was inadequate and requested that deficiencies relating to VOC controls and the application of RACT in the existing SIP be corrected (EPA's second SIP-Call, 53 FR 34500, September 7, 1988).

On November 15, 1990, the Clean Air Act Amendments of 1990 were enacted. In an amended section of the CAA, Congress statutorily adopted the requirement that nonattainment areas fix their deficient RACT rules and established a deadline of May 15, 1991 for states to submit corrections of those deficiencies. The department further revised Rules 350, 351, 352, and 353 to meet the RACT standards. Rule 350 (Storage of Organic Liquids at Bulk Plants), revised July 13, 1988, and April 6, 1992, was approved by the EPA effective October 5, 1995 (60 FR 46024). Rule 351(Loading Organic Liquids) revised July 13, 1988 and November 16, 1992, was approved effective October 5, 1995 (60 FR 46024). Rule 352 (Gasoline Delivery Vessel Testing and Use), revised July 13, 1988, and November

16, 1992, was approved effective October 5, 1995, (60 FR 46024). Rule 353 (Transfer of Gasoline into Stationary Dispensing Tanks) revised July 13, 1988, and April 6, 1992, was approved effective March 4, 1996 (61 FR 3578).

More recently, EPA developed national emission standards for hazardous air pollutants (NESHAPS) for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities (73 FR 1933, Jan. 10, 2008); a NESHAP for Gasoline-Dispensing Facilities (73 FR 1945, Jan. 10, 2008); and the NESHAP for Organic Liquid Distribution (non-gasoline) (69 FR 5063, Feb. 3, 2004). These NESHAPS are often referred to as the maximum achievable control technology (MACT) standards since they were developed to reflect the maximum achievable degree of HAP emission reduction. New MACT standards required additional or new emissions testing requirements reflecting the new technologies. New and revised test methods and leak detection methods were required in these MACT standards. Although the MACT standards typically apply to large sources, there are test methods and other good practices that are or may be applicable to small area sources of VOC emissions.

Current Rulemaking Background: The department originally adopted Rule 351(Loading of Organic Liquids) and Rule 350 (Storage of Organic Liquids at Bulk Plants and Terminals) to be inclusive of both gasoline and non-gasoline organic liquids. The purpose of the rules was to control the emission of volatile organic compounds (VOCs) from all organic liquids. These rules were required in order for the county to comply with the reasonably available control technology (RACT) documents and other policy statements published by the U.S. Environmental Protection Agency (EPA). Since that time, the gasoline industry and the organic liquid (non-gasoline) have evolved into two distinct industries. The use of different terminology, definitions and methods of operation have created confusion in the applicability of Rule 351 to each industry. In this rulemaking, the department is proposing to draft rules specific to the gasoline storage and distribution industry and for the organic liquid (non-gasoline) storage and distribution industry. This rulemaking is not proposing new rules for the industries but rather proposing revisions to current rules that will improve the clarity and enforceability of the regulatory requirements for each industry.

The proposed revisions include the separation of the gasoline requirements and the organic liquid (non-gasoline) requirements in Rule 351. The gasoline storage requirements from Rule 350 and the gasoline loading requirements in Rule 351 are proposed to be combined and included into one rule, proposed Rule 351. The organic liquid (non-gasoline) loading requirements in Rule 351 are proposed to be moved into Rule 350. Along with this proposed separation of the two industry requirements, the department is proposing to rename the rule to reflect the proposed rule revisions.

Other proposed revisions include the relocation of any exemptions to Section 100; the deletion of definitions and terms specific to the organic liquid (non-gasoline) industry; the inclusion of definitions specific to the gasoline industry and in line with terms defined in 40 CFR 63.11100, the Gasoline Distribution Bulk Terminal, Bulk Plants and Pipeline Facilities NESHAP; to clarify the regulatory requirements for storing and loading gasoline at bulk plants and bulk terminals; to add monthly equipment leak inspection requirement; and to add optical gas imaging as an alternative work practice to monitor and identify leaking equipment. The department is also including the recommendations set forth in the Maricopa Environmental Quality, Air Pollution Control Division, Technical Guidance TC-003, May 19, 1993, to clarify the vapor vent/vacuum valve requirement at bulk plants and bulk terminals.

Issues Raised and Discussed During This Rulemaking Process:

The department held three Stakeholder workshops: June 30, 2015, September 14, 2016, and February 22, 2016. Stakeholders included representatives from APS, Caljet, CDM Smith, CDM Smith, Cemex, City of Glendale, City of Mesa, City of Phoenix, EnCore Consulting, Envirosure Solutions, Kiewit, Luke Air Force Base, Pinal County, Ping, SRP, Tamura Environmental, Washington Elementary School, and the EPA.

Proposed Rule 351 is applicable to the storage of gasoline and the loading of gasoline at bulk plants and bulk terminals. Stakeholders questioned if the rule was only applicable to gasoline. Per one Stakeholder the proposed rule does not take into account other petroleum products such as denatured ethanol and transmix, a mixture of refined petroleum products such as gasoline, diesel, and/or jet fuel. There is a wide variety of other petroleum products. The department has defined gasoline in the rule as having a Reid vapor pressure between 4.0 and 14.7 psi and is used as a fuel for internal combustion engines. If a petroleum product meets the definition of gasoline as defined in the proposed rule, then the rule is applicable.

The terms VAPOR COLLECTION/PROCESSING SYSTEM and VAPOR LOSS CONTROL DEVICE were used inconsistently within the rule. A vapor balance system is different than a

vapor loss control system. A vapor balance system is a system that is designed to capture the VOC emissions that occur during the loading of gasoline cargo tanks. No destruction of the VOC emissions occurs during this type of loading process. A vapor loss control system is a system that collects the VOC emissions and uses an abatement device to reduce the VOC emissions. The department is proposing to delete the definition of VAPOR COLLECTION/PROCESSING SYSTEM and VAPOR LOSS CONTROL DEVICE; to add the definition of a VAPOR BALANCE SYSTEM and VAPOR LOSS CONTROL SYSTEM; and to revise sections throughout the rule that refer to VAPOR COLLECTION/PROCESSING SYSTEM and VAPOR LOSS CONTROL DEVICE.

The current definitions of BULK TANK and BULK TERMINAL were confusing. Stakeholders recommended clarification and applicability of terms to be consistent throughout the department's rules pertaining to gasoline.

Stakeholders requested the addition or revision of numerous definitions to reflect the rule applicability to the gasoline industry, specifically to include a definition for LEAK or LEAK FREE and PURGING. A request was made to clarify the definitions VAPOR TIGHT and GAS TIGHT. The department is proposing to revise the definitions in the proposed rule.

In proposed Section 400, the owner or operator "shall make the primary seal envelope available for inspection by the Control Officer for its full length every five years." is it Maricopa County's intention to perform the inspection when the tank is in service or out of service? Does this requirement apply to internal floating roof tanks as well? Per discussions with the Stakeholder, the primary seal envelope can be inspected when the tank is "in-service." The department will not require the floating roof tank to be emptied prior to each five-year inspection if the primary seal envelope is available for inspection by the Control Officer.

Stakeholders questioned the intent of the weekly monitoring requirement under vapor pressure records? Monitoring the product temperature on a weekly basis for a facility that has more than 70 tanks requires a great deal of manpower and coordination. TVP of products stored in storage tanks operated at ambient temperature are typically calculated using meteorological data provided in the EPA TANKS 4.0 database. Stakeholders requested that the department reduce the monitoring requirement from weekly to monthly. The requirement for weekly monitoring of temperature came from Rule 350, Section 501. Reducing the temperature monitoring to once a month may be considered a relaxation of current rule; therefore, the department is not proposing to reduce the frequency of the current weekly requirement.

The department originally proposed to remove the "horizontal fill" pipe maximum height from the rule. Per Stakeholder comment, at least one terminal has multiple side fill pipes that would exceed the proposed maximum height of 18". These tanks were built between the 1950's and the 1990's. The Stakeholder suggested referencing the American Petroleum Institute storage tank design specifications API Standard 650, Welded Tanks for Oil Storage, 12th Edition, 2013. The department has included the storage tank specifications in Section 504 of the proposed rule.

Description of Proposed Amendments:

Propose to revise the following throughout the rule:

* To delete references to organic liquid loading and storage
* To change "transfer" to "loading"
* To change "delivery vessel" to "gasoline cargo tank"
* To delete the word "person" and inset the words "owner or operator"
* To delete past compliance dates
* To add or revise specific rule section references

Propose the following in Section 100:

* To revise Section 101 (Purpose) to include the storage and loading of gasoline at a bulk plant or at a bulk terminal
* To revise Section 102 (Applicability) to apply to the bulk storage and loading of gasoline at a bulk plant or a bulk terminals
* To add Section 103 (Exemptions)

Propose the following in Section 200:

* To delete BULK PLANT
* To add BULK GASOLINE PLANT
* To revise BULK TANK
* To revise BULK TERMINAL to BULK GASOLINE TERMINAL
* To delete DELIVERY VESSEL

* To revise DISPENSING TANK
* To revise EXCESS GASOLINE DRAINAGE
* To add EXTERNAL FLOATING ROOF STATIONARY STORAGE
* To delete FUGITIVE LIQUID LEAK
* To add INTERNAL FLOATING ROOF STATIONARY STORAGE TANK WITH FIXED ROOF
* To add LEAK FREE
* To add PURGING
* To revise SUBMERGED FILL
* To revise SWITCH LOADING
* To delete TRUE VAPOR PRESSURE
* To revise VAPOR LOSS CONTROL DEVICE

Propose the following in Section 300:

* To delete Section 301 General Requirements for Loading Facilities
* To renumber Section 302 to Section 305 Operating Requirements for Vapor Loss Control Devices
* To add Section 301 Federal Standards of Performance for Bulk Gasoline Plants and Bulk Gasoline Terminals
* To add Section 302 Gasoline Stationary Storage Tank Standards
* To add Section 302.1 Submerged Fill Pipes
* To add Section 302.2 All Gasoline Stationary Storage Tanks with a Capacity Between 250 Gallons and 40,000 Gallons (946 -151,400 L)
* To add Section 302.3 Gasoline Storage Tanks with a Capacity Equal to or Greater than 40,000 Gallons (151,400 L)
* To add Section 303 Vapor Loss Control Device
* To add Section 303.1 External Floating Roof Storage Tanks
* To add Section 303.2 Internal Floating Roof Tanks with Fixed Covering
* To add Section 303.3 Vapor Balance System
* To add Section 303.4 Vapor Collection/Processing System
* To add Section 303.5 Equipment Maintenance, Operation and Repair
* To add Section 304 General Requirements for the Loading of Gasoline
* To add Section 304.1 Loading of Gasoline into Storage Tanks
* To add Section 304.2 Loading of Gasoline into Cargo Tanks
* To add Section 304.3 Loading of Gasoline at Bulk Gasoline Terminals
* To add Section 304.4 Loading of Gasoline at Bulk Gasoline Plants
* To revise Section 305 Operating Requirements for Vapor Loss Control Devices

Propose the following in Section 400:

* To delete Section 402 Compliance Schedules
* To add Section 402 Gasoline Storage Tank Inspections
* To add Section 402.1 Semi-Annual Inspections of External Floating Roof Tanks
* To add Section 402.2 Inspection of External Floating Roof Tanks
* To add Section 402.3 INSPECTIONS OF INTERNAL FLOATING ROOF TANKS
* To add Section 402.4 FIVE-YEAR, FULL CIRCUMFERENCE INSPECTIONS OF EXTERNAL FLOATING ROOF TANKS:
* To add Section 403 Performance Testing
* To add Section 404 GASOLINE STORAGE TANK INSPECTIONS-AVAILABILITY TO CONTROL OFFICER
* To add Section 404.1 ANNUAL INSPECTIONS OF EXTERNAL FLOATING ROOF TANKS
* To add Section 404.2 ANNUAL INSPECTIONS OF INTERNAL FLOATING ROOF TANKS
* To add Section 404.3 FIVE-YEAR, FULL CIRCUMFERENCE INSPECTIONS

Propose the following in Section 500:

* To revise Section 501 Leak Detection to Monitoring for Leaks
* To revise Section 501.1 Combustible Gas Detector OR Organic Vapor Analyzer (OVA)-Test Procedure
* To revise Section 502 Compliance Inspections
* To revise Section 503 Record Retention
* To add Section 503 Vapor Pressure Records
* To add Section 503.1 Vapor Pressure Records
* To add Section 503.2 Leak Inspection Records

* To revise Section 504 Compliance Determination-Test Methods
* To add Section 505 Leak Concentrations
* To add Section 506 Compliance Determination – Test Methods to include EPA Test Methods; California Air Resources Board (CARB) Test Procedure; ASTM Standard Test Methods; and Leak Detection Test Procedure
* To add Section 504.1 EPA Test Methods
* To add Section 504.2 California Air Resources Board (CARB) TEST PROCEDURES:
* To add Section 504.3 ASTM Standards
* To add Section 504.4 American Petroleum Institute Standard

6. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
   (a) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
   (b) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. While currently classified as a "marginal" ozone nonattainment area, the county recently failed to meet 2008 8-hour ozone standard by the marginal area attainment date and anticipates EPA will issue a notice proposing to re-classify the area to "moderate". Further, a portion of the county was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the county to continue to maintain the measures and requirements that allowed the county to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM_{10} 24-hour standard. This is the only serious PM_{10} nonattainment area in Arizona. Revisions to Rule 351 are being proposed to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS).

The department complies with A.R.S. § 49-112(B) in that the proposed amendments to Rule 351 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49, address the peculiar local conditions in Maricopa County, are authorized under A.R.S. Title 49, Chapter 3, Article 3, and are not in lieu of a state program.

7. **Documents and/or studies referenced and/or reviewed for this rulemaking:**

Not applicable

8. **Showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**

Not applicable

9. **Preliminary summary of the economic, small business, and consumer impact:**

The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

An identification of the rulemaking.

This rulemaking is proposing to revise Rule 351 (Loading of Organic Liquids). The revised Rule will be titled: Storage and Loading of Gasoline at Bulk Gasoline Plants and Bulk Gasoline Terminals.

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.

The persons who will be directly affected by and bear the costs of this rulemaking to revised Rule 351 will be facilities in Maricopa County that engage in the storage of gasoline in a stationary storage tank at a bulk gasoline plant or bulk gasoline terminal, and 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. The department has issued permits to 27 facilities subject to Rule 351, prior to revision.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**

Because this rulemaking does not impose any new compliance burdens on permitted regulated entities or introduce additional regulatory requirements, the department deemed that none of the revisions have potentially significant economic impacts on permitted sources. It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

The benefits of the rule revision are anticipated to be a result of the following changes:

- Consolidating the gasoline requirements in Rule 351 while moving the organic liquid loading requirements to Rule 350.
- Deleting some definitions and adding new definitions specific to the gasoline industry and in line with terms defined in 40 CFR 63.11100, the Gasoline Distribution Bulk Terminal, Bulk Plants and Pipeline Facilities NESHAP;
- Clarifying the regulatory requirements for storing and loading gasoline at bulk plants and bulk terminals;
- Adding monthly equipment leak inspection requirement;
- Adding optical gas imaging as an alternative work practice to monitor and identify leaking equipment;
- Clarifying vapor vent/vacuum valve requirement at bulk plants and bulk terminals pursuant to the Maricopa Environmental Quality, Air Pollution Control Division, Technical Guidance TC-003, May 19, 1993.

The permitted sources subject to revised Rule 351 already have permits in which these requirements are addressed. Therefore, this revised rule does not impose new requirements on the permitted facilities, and no costs would be incurred for compliance with the rule revisions.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity provided by the Rule 351 revisions will provide a benefit to the regulated community; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision will not impose increased monetary or regulatory costs on individuals so regulated.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated.

(a) **An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County that engage in the storage of gasoline in a stationary storage tank at a bulk gasoline plant or bulk gasoline terminal, and 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.

(b) **The administrative and other costs required for compliance with the rulemaking.**

This rulemaking updates and clarifies existing rule provisions and definitions to be consistent with federal performance standards; and to reduce confusion and improve understanding and readability. The department considered the implications of the proposed amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**

By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**

This rulemaking does not impose any new compliance burdens on regulated entities that are permitted or introduce additional regulatory requirements and will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated. As such, there are no costs to pass through to consumers, which means there are no impacts on consumers.

A statement of the probable effect on state revenues.

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

10. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name: Cheri Dale or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, AZ 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

11. **Time, place, and nature of the proceedings for the rulemaking:**

Written oral proceeding requests or written comments or both will be accepted until the record is closed on June 13, 2016, 5:00 p.m. Written oral proceeding requests or written comments or both may be mailed, e-mailed, or hand delivered to the department (see Item #4 of this notice). An oral proceeding will be scheduled only upon receipt of a written request before the record is closed on June 13, 2016, 5:00 p.m. Written comments received during the comment period and before the record is closed on June 13, 2016, 5:00 p.m. will be considered formal comments to the Notice of Proposed Rulemaking and will be responded to in the Notice of Final Rulemaking.

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

Not applicable

13. **Incorporations by reference and their location in the rule:**

The following test methods are incorporated by reference in Rule 351, Section 504:

EPA Method 2A - Direct Measurement of Gas Volume through Pipes and Small Ducts

EPA Method 2B- Determination of Exhaust Gas Volume Flow Rate from Gasoline Vapor Incinerators

EPA Method 18 - Measurement of Gaseous Organic Compound Emissions by Gas Chromatography

EPA Method 21 - Determination of Volatile Organic Compound Leaks

EPA Method 25A - Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer

EPA Method 25A - Determination of Total Gaseous Organic Concentration Using a Nondispersive Infrared Analyzer

EPA Method 27 - Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure Vacuum Test

California Air Resources Board (CARB) Test Procedures TP-201.1E Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves, October 8, 2003.

ASTM D323-15a "Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)

ASTM D2879-10 Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope

ASTM D4953-15 "Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method)

ASTM D5191-15 "Standard Test Method for Vapor Pressure of Petroleum Products (Mini Method)"

ASTM D6420-99 (Reapproved 2004), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry

American Petroleum Institute: API STD 650 Welded Tanks for Oil Storage, Twelfth Edition, Includes Errata 1 (2013), Errata 2 (2014), and Addendum 1 (2014)

14. **Full text of the rule follows:**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS
RULE 351
STORAGE AND LOADING OF ~~ORGANIC LIQUIDS~~ GASOLINE AT BULK GASOLINE PLANTS AND BULK GASOLINE TERMINALS
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~~Revised 07/13/88~~
~~Revised 04/06/92~~
~~Revised 02/15/95~~

Revised 07/13/1988; Revised 04/06/1992; Revised 02/15/1995; and **MM/DD/YYYY**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS
RULE 351

STORAGE AND LOADING OF ~~ORGANIC LIQUIDS~~ GASOLINE AT BULK PLANTS AND BULK TERMINALS

SECTION 100 - GENERAL

101 PURPOSE: To limit emissions of volatile organic compounds (VOCs) ~~from~~ emitted during the storage and ~~the~~ loading of ~~organic liquids~~ gasoline at bulk gasoline plants and bulk gasoline terminals under actual storage and loading conditions.

102 APPLICABILITY: This rule is applicable to: ~~the transfer of organic liquids having a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under actual loading conditions. It regulates~~

~~transfers at bulk terminals and bulk plants from stationary storage tanks to delivery vessels and from delivery vessels to stationary storage tanks.~~

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 storage tanks at airports, and the subsequent transfer 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 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:** A floating roof is exempt from the requirement that its roof be floating as long as either of the following processes is accomplished continuously and as rapidly as practicable:

a. When the tank is being drained completely.

b. When 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 302 is not required at the loading rack when all of the following are complied with:

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 302 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 Department upon request for at least five (5) years.

c. Load gasoline using submerged fill only.

d. The owners or operators 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 cargo tank or rail car when the gasoline is in the process of being loaded 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 loading process.

(2) When VOC vapors from gasoline are present within a non-exempt cargo tank, authorized government agents as well as owners or operator and their contractors may open vapor containment equipment while performing operations required by Department rules 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 cargo tank has stopped 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~~ ~~BULK PLANT - Any loading facility at which gasoline and/or other organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under any actual storage conditions are received from delivery vessels for storage in on-site stationary tanks, and from which such liquids also are transferred to delivery vessels.~~

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.

~~202~~ **203** **BULK TANK:** Any stationary storage tank serving a loading rack which loads ~~delivery vessels~~ gasoline cargo tanks with ~~organic liquids~~ gasoline

~~203~~ **204** **BULK GASOLINE TERMINAL:** Any ~~primary distributing~~ gasoline storage and loading facility that meets all of the following: ~~which has ever received in any consecutive 30-day period over 600,000 gallons (2,271,180 l) of gasoline and/or other organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under actual storage conditions; or any loading facility where delivery of such liquids to the facility is primarily by pipeline.~~

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 gasoline cargo tanks 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.

~~204 DELIVERY VESSEL - Any vehicular-mounted container such as a railroad tank car, tanker truck, tank trailer or any other mobile container used to transport organic liquids.~~

~~205~~ **205** **DISPENSING TANK:** Any stationary tank which dispenses ~~organic liquid fuel~~ gasoline directly into ~~the fuel tanks of motor vehicles including aircraft.~~ 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). ~~This includes aircraft.~~

~~206~~ **206** **EXCESS** ~~ORGANIC LIQUID~~ **GASOLINE DRAINAGE:** More than 10 milliliters (0.34 fluid ounces or 2 teaspoonsful) ~~per disconnect.~~ 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 tube'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.

~~207~~ ~~FUGITIVE LIQUID LEAK: An organic liquid leak of more than three drops per minute from any single leak source other than the disconnect operation of liquid fill line and vapor line.~~

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 ~~having a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under any actual conditions of storage and handling, and which is~~ 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 ~~and which 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.

~~210~~ **211** **GASOLINE DISPENSING OPERATION:** All gasoline dispensing tanks and associated equipment located on one or more contiguous or adjacent properties under the control of the same person or persons under common control.

~~211~~ **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 ~~organic liquids are transferred or~~ gasoline is loaded into or out of ~~delivery vessels~~ 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 person or persons 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.

~~212~~ ~~OFFSET FILL LINE: Any organic liquid fill line (piping and fittings) which contains one or more bends.~~

~~213~~ **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.

~~214~~ **217** **STATIONARY STORAGE TANK:** Any tank, reservoir or other container used to store, but not transport, ~~organic liquids~~gasoline.

~~215~~ **218** **SUBMERGED FILL** ~~PIPE~~**:** ~~Any discharge pipe or nozzle which meets the applicable specification as follows:~~ Any gasoline discharge pipe or nozzle which meets at least one of the applicable specifications:

~~215.1~~ **218.1** **Top-~~Filled~~ Fill or Bottom-~~Filled~~ Fill ~~Tanks~~:** 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 103.2.

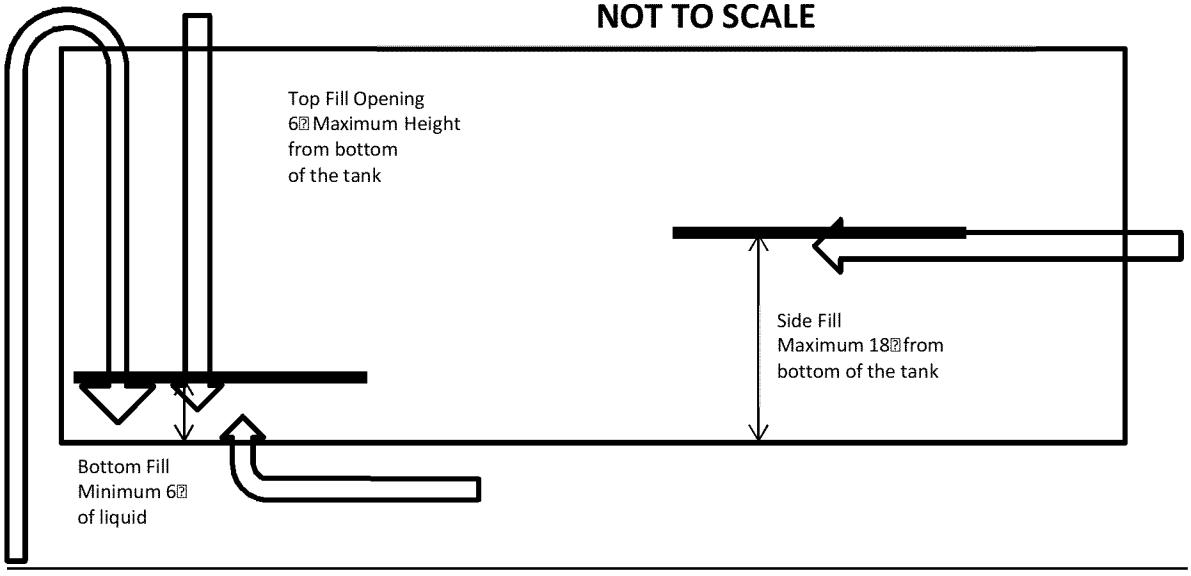
~~215.2~~ **218.2** **Side-~~Filled~~ Fill:** The end of the discharge pipe or nozzle is totally submerged when the liquid level is 18 inches (46 cm) from the bottom of the tank unless exempted by Section 103.2.

218.3 **API Standard 650 Compliant:** A floating roof storage tank containing an organic liquid meets the submerged fill requirements of this Rule 351 if the discharge pipe or nozzle meets both of the following requirements:

a. Is kept completely submerged, including when the roof rests on its legs, except when the tank is being emptied completely and refilled; and

b. Is designed and installed according to the API Standard 650.

Submerged Fill Diagram
NOT TO SCALE



~~216~~ **219** **SWITCH LOADING:** Loading diesel fuel into a ~~delivery vessel~~ gasoline cargo tank whose previous load was gasoline; or loading any organic liquid not subject to this rule into a ~~delivery vessel~~ gasoline cargo tank whose previous load was ~~an organic liquid~~ gasoline and subject to this rule.

~~210 TRUE VAPOR PRESSURE (TVP): Absolute vapor pressure of a liquid at its existing temperature of storage and handling.~~

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 cargo tank from which the gasoline is being loaded.

~~218 VAPOR COLLECTION/PROCESSING SYSTEM: A vapor loss control device 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.~~

~~219 VAPOR LOSS CONTROL DEVICE: Any piping, hoses, equipment, and devices which are used to collect, store and/or process organic vapors at a bulk terminal, bulk plant, service station or other operation handling gasoline and/or other organic liquids.~~

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 specified in the applicable standard(s) during the loading of gasoline.

~~220~~ **222** **VAPOR TIGHT:** A condition where no organic vapor leak reaches or exceeds 100 percent of the lower explosive limit at a distance of one inch (2.5 cm) from a vapor leak when measured with a combustible gas detector or an organic vapor analyzer, both calibrated with propane.

SECTION 300 – STANDARDS

~~301 GENERAL REQUIREMENTS FOR LOADING FACILITIES: All bulk terminals and plants must have submerged fill pipes in all tanks over 250 gallons (946 l) storing organic liquids, observe designated procedures and be equipped with applicable equipment as follows:~~

~~301.1 Bulk Terminals: No person shall load organic liquids having a TVP of 1.5 psia (77.5 mm Hg) or greater into any delivery vessel from a stationary storage tank at a bulk terminal unless the vessel bears a current pressure test decal issued by the Control Officer and the terminal uses a vapor collection/processing system which reduces the emissions of volatile organic compounds to not more than .08 pounds per 1000 gallons of such liquids transferred (10 grams per 1000 liters). Switch loading shall be subject to this standard. The terminal owner or operator and the operator of the receiving vessel shall act to ensure that the vapor line is connected before such liquids are transferred.~~

~~301.2 Bulk Plant Tanks Over 250 Gallons (>946 L):~~

~~a.Transfer To Bulk Plant Tanks: No person shall transfer gasoline from a delivery vessel into a bulk plant tank exceeding 250 gallons (946 l) capacity unless the delivery vessel bears a current county pressure test decal and uses a vapor balance system equipped with fittings which are vapor tight; or, alternatively, a vapor loss control system is used which emits to atmosphere less than 0.6 pound of volatile organic compounds per 1000 gallons transferred (72 grams per 1000 liters).~~

~~b.Loading From Bulk Plant Tanks: No person shall transfer gasoline from a bulk plant tank exceeding 250 gallons (946 l) into a delivery vessel unless both the loading rack and delivery vessel use a vapor balance system equipped with fittings which are vapor tight; or, alternatively, a vapor loss control system is used which emits to atmosphere less than 0.6 pounds of volatile organic compounds per 1000 gallons loaded (72 grams per 1000 liters).~~

~~302 OPERATING REQUIREMENTS FOR VAPOR LOSS CONTROL DEVICES: The owner or operator of a vapor loss control device subject to this rule shall operate the device and organic liquid transfer equipment as follows:~~

~~302.1 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 tank truck. Each owner or operator of a facility shall act to ensure that any vapor recovery system required by this Rule 351 is connected between the delivery vessel and the storage tank during all organic liquid transfers.~~

~~302.2 Loading shall be accomplished in a manner that prevents overfills, fugitive liquid leaks or excess organic liquid drainage. Owners or operators of bulk plants or operators of delivery vessels shall observe all parts of the transfer and shall discontinue transfer if any leaks are observed. 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 loading or unloading operations, potential leak sources shall be vapor tight as demonstrated by the test procedure described in Section 501 of this rule.~~

~~302.3 Loading operations which use vapor collection/processing equipment shall be accomplished in such a manner that the displaced vapor and air will be vented only to the vapor collection/processing 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.~~

~~302.4 Vapor transfer lines 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.~~

~~303 REPAIR AND RETESTING REQUIREMENT: Except as superseded by Division actions pursuant to the procedures of Rule 100, Section 501 ("Malfunctions"), the owner/operator of a vapor loss control device that exceeds the standards of this rule shall notify the Control Officer and observe the following time schedule in ending such exceedances:~~

~~303.1 Concentrations at or above the lower explosive limit must be brought into compliance within 24 hours of detection.~~

~~303.2 Leak concentrations exceeding 10,000 ppm but less than 50,000 ppm as methane for vapor collection/processing equipment subject to gas-tight standard shall be brought into compliance within 5 days of detection.~~

~~303.3 Except as the Control Officer otherwise specifies, a leak source subject to Sections 303.1 or 303.2 must be tested after presumed leak-correction within 15 minutes of recommencing use; if leak standards are exceeded in this test, the use of the faulty equipment shall be discontinued within 15 minutes until correction is verified by retesting.~~

~~304 EQUIPMENT MAINTENANCE AND OPERATING PRACTICES: All equipment associated with delivery and loading operations shall be maintained to be leak-free, vapor tight and in good working order. Gasoline shall not be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation to the atmosphere. Purging of gasoline vapors and of JP-4 (jet petrol) vapors is prohibited.~~

~~305 EXEMPTIONS:~~

~~305.1 Less Than 120,000 Gallons Per 30-Day Period: At bulk plants built before October 2, 1978, vapor loss control specified in Section 301.2b is not required at the outloading rack when all of the following are complied with:~~

~~a.After April 6, 1992, the bulk plant loads less than 120,000 gallons (454,800l) of gasoline into delivery vessels in any consecutive 30-day period. Any plant that becomes subject to all of the provisions of Section 301.2b by exceeding this threshold will remain subject to these provisions even if its output later falls below the threshold.~~

~~b.Keep current records of amount of gasoline loaded and keep them readily accessible to the Division upon request for at least three (3) years.~~

~~c.Load outgoing gasoline using submerged fill only.~~

~~d.The owners or operators of the bulk plant or the owners or operators of the delivery vessel shall observe all parts of the transfer and shall discontinue the transfer if any leaks are observed.~~

~~305.2 Opening Hatches: When VOC vapors from organic liquids are present within a non-exempt delivery vessel, authorized government agents as well as owners/operators and their contractors may open vapor containment equipment while performing operations required by Division rules 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 onloading is complete or delivery vessel has stopped before opening hatch or other vapor seal.~~

~~b.Reclose hatch or other sealing device within 3 minutes of opening.~~

~~c.Limit windspeed at opened hatch or other opened sealing device to not more than 3 mph (1.34 m/sec).~~

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 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 63, Subpart BBBBBB- 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.

302 **GASOLINE STATIONARY STORAGE TANK STANDARDS:**

302.1 **Submerged Fill Pipes:** The owner or operator of a gasoline stationary storage tank shall only allow the loading of gasoline into a stationary storage tank or a gasoline cargo tank using submerged fill.

302.2 **All Gasoline Stationary Storage Tanks with a Capacity Between 250 Gallons and 40,000 Gallons (946 -151,400 L):** An owner or operator shall store gasoline in a stationary storage tank that meets all of the following requirements for gasoline stationary storage tanks with a capacity greater than 250 gallons but less than 40,000 gallons:

a. Each tank has a fill pipe that is maintained leak free and vapor tight when gasoline is not in the process of being loaded.

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 complies with both Section 302.2.c.(1) and 302.2.c.(2) of this rule. An owner or operator shall:

(1) Install a pressure/vacuum vent valve that is either:

(a) Set the within ten percent of the tank's maximum, safe working-pressure; or

(b) Set at least at 0.5 psia (25.8 mm Hg)

(2) Maintain the pressure/vacuum vent in good working order.

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 stationary gasoline storage tank with a capacity equal to or greater than 40,000 gallons, shall store gasoline in a stationary storage tank that is equipped with at least one of the vapor loss control systems listed below:

a. Install and maintain an external floating roof storage tank; or

b. Install and maintain an internal floating roof storage tank with a fixed cover; or

c. Install and maintain a vapor collection/processing system.

303 **VAPOR LOSS CONTROL:**

303.1 **External Floating Roof Storage Tanks:** An external floating roof storage tank must meet the following requirements:

a. The owner or operator of an external floating roof tank and associated emission control equipment shall properly install, properly maintain and operate the equipment.

b. **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 103.3 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 following requirements of Section 303.1(c) of this rule.

c. **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.c.ii of this rule. Storage tanks constructed after July 13, 1988, shall have a secondary seal that is rim-mounted. Except for tanks having metallic shoe primary seals onto which secondary seals were installed prior to July 13, 1988, owner or operator shall operate an external floating roof tank subject to the provisions of this rule unless a secondary seal extends from the roof to the tank shell (a rim-mounted seal) and is not attached to the primary seal.

(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 cm^2 ~~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).

d. **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 (212 cm^2 ~~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.

303.2 **Internal Floating Roof Stationary Storage Tank with Fixed Roof Covering:** An internal floating roof tank with fixed coverings and its appurtenances shall meet the applicable requirements as follows:

a. The owner or operator of an internal floating roof tank and associated emission control equipment shall properly install, properly maintain and 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 (212 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 install, operate and maintain a vapor balance system to achieve a 95% reduction in VOC emissions.

303.4 **Vapor Loss Control System:** A vapor loss control system shall be capable of collecting and processing vapors and gases, preventing at least 95 percent by weight of the volatile organic compounds escaping into the atmosphere.
a. An owner or operator of a bulk gasoline terminal 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.
e. The vapor loss control system shall reduce emissions of VOC to not more than 0.08 pounds per 1000 gallons of gasoline transferred. Switch loading shall be subject to this standard.
f. The terminal owner or operator and the operator of the receiving vessel shall act to ensure that the vapor line is connected before such liquids are transferred.

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 loss control system that exceeds the standards of this rule shall notify the Control Officer and observe the following time schedule in ending such exceedances:
(1) Concentrations at or above the lower explosive limit must be brought into compliance within 24 hours of detection.
(2) Vapor Leak concentrations exceeding 10,000 ppm but less than 50,000 ppm as methane for vapor collection/processing equipment subject to gas-tight standard shall be brought into compliance within 5 days of detection.
(3) Except as the Control Officer otherwise specifies, a leak source subject to Section 303.5(b)(1) or Section 303.5(b)(2) of this rule must be tested after presumed leak-correction within 15 minutes of recommencing use; if leak standards are exceeded in this test, the use of the faulty equipment shall be discontinued within 15 minutes until correction is verified by retesting.

304 **GENERAL REQUIREMENTS FOR THE LOADING OF GASOLINE:** The owner or operator of bulk gasoline tank or bulk gasoline terminal shall comply with the following:

304.1 **Loading of Gasoline into Storage Tanks:**
a. Comply with Section 302.1 of this rule.
b. Verify the proper connection to a vapor balance system or other vapor loss control systems prior to loading gasoline 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 loading gasoline at facilities that utilize a vapor balance system.

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 Cargo Tankers:**

a. Verify that the cargo tanker has a current Maricopa County (MC) Vapor Tightness Test Certification Decal or a signed affidavit indicating an exemption from vapor tightness testing.
b. Verify the proper connection to a vapor balance system or other vapor loss control systems prior to the loading of gasoline.
c. Verify the proper disconnection from a vapor balance system or other vapor loss control systems 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 Bulk Gasoline Plant Tanks:** No person shall load gasoline from a gasoline cargo tank into a bulk gasoline plant tank exceeding 250 gallons (946 l) capacity unless the gasoline cargo tank bears a current Maricopa County Air Pollution Vapor Tightness Certification decal and uses a vapor balance system equipped with fittings which are vapor tight; or, alternatively, a vapor loss control system is used which emits to atmosphere less than 0.6 pound of volatile organic compounds per 1000 gallons loaded (72 grams per 1000 liters).
b. **Loading from Bulk Gasoline Plant Tanks:** No person shall load gasoline from a bulk gasoline plant tank exceeding 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, a vapor loss control system is used which emits to atmosphere less than 0.6 pounds of volatile organic compounds per 1000 gallons loaded (72 grams per 1000 liters).

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 at a bulk gasoline terminal if the following conditions are met:

a. The owner or operator meets all the conditions in Section 304.2 of this rule; and
b. The gasoline cargo tank bears a current Maricopa County Air Pollution Vapor Tightness Certification decal issued by the Control Officer; and
c. The terminal uses a vapor collection/processing system which reduces the emissions of volatile organic compounds to not more than 0.08 pounds per 1000 gallons of such liquids loaded (10 grams per 1000 liters). Switch loading shall be subject to this standard.

305 **OPERATING REQUIREMENTS FOR VAPOR LOSS CONTROL DEVICES:** The owner or operator of a vapor loss control device subject to this rule shall operate the device 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 tank truck. Each owner or operator of a facility shall act to ensure that any vapor recovery system required by Rule 351 is connected between the gasoline cargo tank and the 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 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. 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 device in such a manner that the displaced vapor and air will be vented only to the vapor loss control device, 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 vapor is being transferred, for liquid and vapor leaks and for faulty equipment. In these monthly inspections detection methods incorporating sight, sound, smell and/or touch may be used or methods listed in 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 ~~loading facility or by a consultant, at the expense of the owner~~ gasoline plant or bulk gasoline terminal. Testing shall be done according to procedures in Section ~~501~~ 504 of this rule, except that EPA Method 21 shall be used to test for leaks from a vapor collection/ processing unit and its associated piping outside the loading area. Equipment shall conform to the specifications of those test methods cited in Section ~~504.2~~ 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 or his representatives shall at their discretion observe the tests.

~~402 COMPLIANCE SCHEDULE: By September 30, 1995, the owner or operator of any loading facility which requires modification subject to a requirement of Section 300 of this rule shall submit to the Control Officer for approval an emission control plan and a schedule for achieving compliance with all requirements by April 30, 1996. The plan shall specify the date of completion of each major step leading to compliance.~~

402 GASOLINE STORAGE TANK INSPECTIONS

Semi-Annual Inspection by an Owner or Operator: The owner or operator of any floating roof tank subject to this rule shall visually inspect the tank and seals at least once every six months to determine ongoing compliance with both the applicable standards of this rule and any permit conditions pertaining to the tank. Determinations of secondary seal gap area on external floating roofs need be made only once per year. Records of these inspections shall be maintained and shall be made available to the Control Officer upon request.

Inspection of an External Floating Roof Stationary Storage Tanks:

a. **Annual and Empty Tank Inspection:** The owner or operator of any tank which uses an external floating roof to meet the vapor loss control requirements of this rule shall conduct a visual inspection each time the external floating roof 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 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

(3) Verify there are no holes, tears, or other openings in the seal or seal fabric.

b. **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 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 212 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm.

Inspections of Internal Floating Roof Stationary Storage Tanks with a Fixed Roof Covering:

a. The owner or operator of any tank which uses an internal floating roof to meet the vapor loss control requirements of this rule shall conduct a visual inspection each time the internal floating roof tank is emptied and degassed or at least once a year. The visual inspection 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.

b. **Five Year Inspection and Empty Tank Inspection:** The owner or operator of any tank which uses an internal floating roof to meet the vapor loss control requirements of this rule shall conduct a visual inspection each time the internal floating roof tank is emptied and degassed or at least once every five (5) years. The visual inspection shall include all of the following:

(1) The internal floating roof shall be free of any defects.

(2) The primary seal shall not have any holes, tears or other openings.

(3) The secondary seal if one is in service, shall not have any holes, tears or other openings.

(4) Gaskets shall prevent liquid surfaces from exposure to atmosphere.

(5) The slotted membrane shall not have more than a ten percent (10%) open area.

403 PERFORMANCE TESTING: A pressure tap shall be placed in the loading facility's vapor control system, as close as possible to the gasoline cargo tank. The pressure shall be recorded periodically during performance testing, at least once every minute. Instantaneous maximum pressure shall be recorded either automatically or by visual observation. 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.

404 GASOLINE STORAGE TANK INSPECTIONS-AVAILABILITY TO CONTROL OFFICER:

Annual Inspections of External Floating Roof Tanks: The owner or operator of any tank which uses an external floating roof to meet the vapor loss control 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 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 Stationary Storage Tanks with a Fixed Roof Covering: The owner or operator of any tank which uses an internal floating roof to meet the vapor loss control requirements of this rule shall make the entire tank including the internal floating roof available for inspection prior to filling. It 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 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 working days prior to removal of the secondary seal.

~~403~~ **405** **OTHER AGENCIES' REQUIREMENTS:** Compliance with this rule does not relieve or otherwise affect a person'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 Weights and Measures, 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 ~~gasoline~~ bulk gasoline plant or ~~gasoline~~ bulk gasoline terminal shall comply with the following:

501 MONITORING FOR LEAKS

501.1 ~~LEAK DETECTION~~ **Combustible Gas Detector or Organic Vapor Analyzer - Test Procedure:** During loading ~~into or unloading out of delivery vessels~~of cargo tanks, the peripheries of all potential sources of leakage at the loading facility are checked with a combustible gas detector or organic vapor analyzer (OVA) as follows:

~~501.1 Pressure: A pressure tap shall be placed in the loading facility's vapor control system, as close as possible to the delivery vessel's tank. The pressure shall be recorded periodically during testing, at least once every minute. Instantaneous maximum pressure shall be recorded either automatically or by visual observation. 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.~~

~~501.2~~ **a. Calibration:** Within 4 hours prior to monitoring the combustible gas detector or OVA shall be calibrated with 10,600 ppm propane by volume in air for a 50 percent lower explosive limit (LEL) response.

~~501.3~~ **b. Probe Distance:** The probe inlet shall be one inch (2.5 cm) or less from the potential leak source when searching for leaks. The probe inlet shall be one 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 inch (2.5 cm) of an actual or potential leak source, the closest practicable probe distance shall be used.

~~501.4~~ **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 a potential or actual leak source, the probe shall be positioned to locate the point of highest meter response.

~~501.5~~ **d. Probe Position:** The probe inlet shall be positioned in the path of the vapor flow from a leak such that the central axis of the probe-tube inlet shall be positioned coaxial with the path of the most concentrated vapors.

~~501.6~~ **e. Wind:** Wind shall be blocked as much as possible from the space being monitored. The annual leak detection test required by Section 401 shall be valid only when wind speed in the space being monitored is 5 mph or less.

~~501.7~~ **f. Data Recording:** The highest detector reading and location for each incidence of leakage shall be recorded along with the date and time.

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:** An owner or operator 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.

502 **COMPLIANCE INSPECTIONS:** The Control Officer, at any time, may monitor a ~~delivery vessel~~ gasoline cargo tank vapor collection system, a loading rack's vapor loss control devices, a loading facility or a vapor collection/processingsystem 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 ~~three~~ five (5) years.

Vapor Pressure Records:

a. **Bulk Gasoline Plant:** An owner or operator of a storage tank located at a bulk gasoline plant that is subject to the provisions of this rule 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 years.

b. **Bulk Gasoline Terminal:** An owner or operator of a 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 storage tank subject to this Rule 351, shall be determined and recorded using at least one of the following methods:
      (a) Take the actual temperature of the contents of the storage tank each week and record the weekly temperature of the contents of each storage tank.
      (b) The maximum local monthly average ambient temperature as reported by the National Weather Service and record monthly for each storage tank.
      (c) AP 42, Section 7.1 emission estimation procedures and record monthly for each storage tank.
   (3) The Reid vapor pressure of each 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 as required by Section 400 of this rule. The log book shall include, but is not limited to 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 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 shall include any maintenance that was performed.
d. Each annual inspection shall include any maintenance that was performed.
e. For an external floating roof, record the seal gap measurements, including the raw data obtained and any calculations performed.
f. The date the gasoline 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.

504 **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. Copies of the code of federal regulations are available electronically at: http://www.gpo.gov/fdsys/browse/collectionCfr. action?collectionCode=CFR;at the Maricopa County Air Quality Department, 1001 N. Central Ave., Suite 125, Phoenix, AZ, 85004; or by calling (602) 506-6010 for information. ASTM standards are available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428, or from its website at www.astm.org.

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 Isoteniscope.
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).

~~504.1 Vapor Collection/Processing System: Control efficiency of a vapor collection/-processing system shall be determined according to EPA Reference Method 25A or Method 25B subsequent to the Control Officer's approval of the test protocol. Leak tests to verify a gas-tight state of the equipment associated with the vapor collection/-processing device, including the piping outside of the loading area, shall be conducted according to EPA Reference Method 21. Gas volume flow rates shall be determined by Method 2B for a thermal oxidizer; otherwise, by Method 2A.~~

~~504.2 Vapor Balance And Loading Systems: Vapor tightness shall be determined using the method described in Section 501 of this rule.~~

~~504.3 True Vapor Pressure shall be determined by ASTM Method 2879-83 and by temperature measurement under actual conditions using an instrument accurate to within ±1 degree Fahrenheit or ±0.5 degree Celsius. For purposes of recording and reporting, the Reid vapor pressure and the foregoing temperature determination may be used in conjunction with the method of American Petroleum Institute Bulletin 2517, February, 1980, to determine true vapor pressure, unless the Control Officer specifies ASTM Method 2879-83.~~

~~504.4 Reid Vapor Pressure shall be determined by ASTM Method D 323-82 or by ASTM Method D 5191~~

NOTICE OF PROPOSED RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 352: GASOLINE DELIVERY VESSEL TESTING AND USE
PREAMBLE

1. **Rule affected** **Rulemaking action**

Rule 352: Gasoline Delivery Vessel Testing and Use — Amend

2. **Statutory authority fortherulemakin g:**

Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. **List of public notices addressing the rulemaking:**

Notice of Briefing to Maricopa County Manager: May 2015
Notice of Stakeholder Workshops: June 30, 2015, September 14, 2015, and February 22, 2016

4. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name: Cheri Dale or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, Arizona 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

5. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary: Rule 352 (Gasoline Delivery Vessel Testing and Use) limits the emission of volatile organic compounds (VOCs) from gasoline delivery vessels and applies to any gasoline delivery vessel used to receive or deliver gasoline within Maricopa County. Rule 352 also applies to all persons who own, operate, maintain, repair or test the delivery vessel. Maricopa County Air Pollution Control Regulation, Rule 352, was last revised over fifteen years ago. The proposed revisions to Rule 352 will update the rule to use current industry language; update test methods; and clarify the loading requirements for bulk terminals, bulk plants and gasoline dispensing facilities. In addition, the proposed revisions to Rule 352 will address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS).

Background: As early at the 1960's, the Maricopa County Health Department (as the department was then called), Air Pollution Control regulations, Section IV, Handling of Materials, Regulation 1, required "Material such as…gasoline or other volatile compounds…be kept, processed, used, and transported in such a manner and by such means that they will not unreasonably leak, escape, evaporate or be otherwise discharged into the ambient air so as to cause or contribute to air pollution…" This early rulemaking established the basis for the current Rule 350. In 1970, the passage of the Clean Air Act established federal air quality standards.

Congress established the basic structure of the Clean Air Act (CAA) in 1970. The CAA requires the U.S. Environmental Protection Agency (EPA) to establish national ambient air quality standards (NAAQS) for common and widespread pollutants based on the most current science available. For areas that were determined to be in nonattainment of the NAAQS, the state was required to adopt federally enforceable state implementation plans (SIP) in order to achieve and maintain air quality and meet the federally established air quality standards (the NAAQS)[2]. The states were responsible for developing and implementing rules that require reasonably available control technology (RACT) for sources of VOCs located in the designated ozone nonattainment areas. Local air agencies were required to establish RACT for source categories not already covered by EPA's Control Techniques Guidelines (CTGs) as well as tighten RACT for source categories for which RACT had already been defined in the NAAQS[3]. EPA defined RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility" (44 FR 53762; September 17, 1979).

In the 1970's, using the EPA NAAQS and CTGs to identify the established RACT standards, the Maricopa County Bureau of Air Pollution Control (as the department was then called) revised and renumbered the county air pollution rules and regulations. The revised county rules established specific requirements for petroleum products in Regulation III, Rule 33: Storage and Handling of Petroleum Products.

On March 3, 1978, EPA promulgated a list of ozone nonattainment areas under the provisions of the Clean Air Act, as amended in 1977 (1977 CAA or pre-amended Act). Maricopa County was included on such list 43 FR 8964, March 3, 1978). On February 24, 1984, EPA notified

the Governor of Arizona, that the Maricopa County Air Pollution Control District's (MCAPCD), as the department was then called) portion of the Arizona SIP was inadequate and requested that deficiencies in the existing SIP be corrected (EPA's SIP-Call, 49 FR 18827, May 3, 1984). The department was in the process of revising Rule 33 to create Rules 350, 351, 352, and 353 to address the RACT requirements when EPA again notified the Governor of Arizona (May 26, 1988) that MCAPCD's portion of the Arizona SIP was inadequate and requested that deficiencies relating to VOC controls and the application of RACT in the existing SIP be corrected (EPA's second SIP-Call, 53 FR 34500, September 7, 1988).
On November 15, 1990, the Clean Air Act Amendments of 1990 were enacted. In an amended section of the CAA, Congress statutorily adopted the requirement that nonattainment areas fix their deficient RACT rules and established a deadline of May 15, 1991 for states to submit corrections of those deficiencies. The department further revised Rules 350, 351, 352, and 353 to meet the RACT standards. Rule 350 (Storage of Organic Liquids at Bulk Plants), revised July 13, 1988, and April 6, 1992, was approved by the EPA effective October 5, 1995 (60 FR 46024). Rule 351(Loading Organic Liquids) revised July 13, 1988 and November 16, 1992, was approved effective October 5, 1995 (60 FR 46024). Rule 352 (Gasoline Delivery Vessel Testing and Use), revised July 13, 1988, and November 16, 1992, was approved effective October 5, 1995, (60 FR 46024). Rule 353 (Transfer of Gasoline into Stationary Dispensing Tanks) revised July 13, 1988, and April 6, 1992, was approved effective March 4, 1996 (61 FR 3578).
More recently, EPA developed national emission standards for hazardous air pollutants (NESHAPS) for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities (73 FR 1933, Jan. 10, 2008); a NESHAP for Gasoline-Dispensing Facilities (73 FR 1945, Jan. 10, 2008); and the NESHAP for Organic Liquid Distribution (non-gasoline) (69 FR 5063, Feb. 3, 2004). These NESHAPS are often referred to as the maximum achievable control technology (MACT) standards since they were developed to reflect the maximum achievable degree of HAP emission reduction. New MACT standards required additional or new emissions testing requirements reflecting the new technologies. New and revised test methods and leak detection methods were required in these MACT standards. Although the MACT standards typically apply to large sources, there are test methods and other good practices that are or may be applicable to small area sources of VOC emissions. Both MACT standards included requirements for cargo tanks, the industry term now used for delivery vessels.
Current Rulemaking Background: Rule 352 was revised in 1992 and 1999 in order for the county to comply with RACT and other policy statements published by the EPA. In 2013, a limited scope rulemaking was drafted to clarify the definition of volatile organic compounds within all of the Maricopa County Air Quality rules. For this rulemaking, the department is proposing revisions to improve the clarity of the loading requirements and update test methods. This rulemaking is includes proposed revisions to improve the clarity and enforceability of the regulatory requirements for gasoline cargo tanks.
Other proposed revisions include the relocation of any exemptions to Section 100; the inclusion of definitions specific to the gasoline industry and in line with terms defined the Code of Federal Regulations; clarification of the regulatory requirements for loading gasoline at bulk terminals, bulk plants and gasoline dispensing facilities; increasing the amount of notification time in advance of cargo tank testing; and the addition of optical gas imaging as an alternative work practice to monitor and identify leaking equipment.
Issues Raised and Discussed During this Rulemaking Process:
Prior to Stakeholder workshops, one Stakeholder submitted a written request to the department concerning the notification time for testing of cargo tanks. Rule 352 requires the owner or operator or tester of a gasoline cargo tank to notify the Control Officer "…no more than 24 hours in advance of [vapor tightness] testing." The Stakeholder expressed concern that gasoline cargo tanks operating in different regulatory jurisdictions require different notification requirements; this presented a challenge for the Stakeholder when conducting vapor tightness testing for cargo tanks that operate outside of Maricopa County. The department acknowledged this "challenge presented by the inconsistency of our [the department] testing notification periods compared to those required by other jurisdictions." (Department letter to Massey's Truck and Tank Repair, June 11, 2014) At that time, the department agreed to allow the notification time of up to 72 hours in advance of the cargo tank testing. This time frame is proposed to be included in this rulemaking.
The department held three Stakeholder workshops: June 30, 2015, September 14, 2016, and February 22, 2016. Stakeholders included representatives from APS, Caljet, CDM Smith,

Cemex, City of Glendale, City of Mesa, City of Phoenix, EnCore Consulting, Envirosure Solutions, Kiewit, Pinal County, SRP, Washington Elementary School, and the EPA.
The current definitions of "bulk tank" and "bulk terminal" were confusing. Stakeholders recommended clarification of the terms and their applicability to be consistent throughout the department's rules that pertain to gasoline.
Stakeholders questioned if cargo tanks were subject to the required pressure testing requirements of Rule 352. The rule did not seem clear if there were any exceptions to this pressure test requirement. Rule 352, Section 305.1 does provide an exemption from the pressure testing requirements if a cargo tank meets all of the conditions listed in the section. The proposed rule retains the exemptions in Section 305.1 but is proposing to move the exemptions into the proposed Section 103 (Partial Exemptions). Additional questions were asked concerning the rule's applicability to a cargo tank that only loads aviation gasoline. The MACT standards that include requirements for cargo tanks exempt the following: "…transfer of aviation gasoline within the airport, is not subject to this subpart. (40 CFR 63.11081(d) and 40 CFR 63.11111(g))." Maricopa County is proposing in Section 103 to include an exemption from Rule 352 for cargo tanks that load only the following fuels: aviation fuel, diesel fuel and liquefied petroleum gas.

Description of Proposed Amendments:

Propose to revise the following throughout the rule:

* To change "transfer" to "loading"
* To change "delivery vessel" to "gasoline cargo tank"
* To delete the word "person" and inset the words "owner or operator"
* To delete past compliance dates
* To add or revise specific rule section references

Propose the following in Section 100:

* To add Section 103 (Exemptions)

Propose the following in Section 200:

* To delete 2-POINT SYSTEM
* To add BULK GASOLINE PLANT
* To add BULK GASOLINE TERMINAL
* To add COAXIAL VAPOR BALANCE SYSTEM
* To add DUAL-POINT VAPOR BALANCE SYSTEM
* To delete GASOLINE DELIVERY VESSEL
* To add GASOLINE CARGO TANK
* To add GASOLINE DISPENSING FACILITY
* To revise MARICOPA COUNTY (MC) PRESSURE VAPOR TIGHTNESS TEST
* To add MOBILE REFUELER
* To add SUBMERGED FILL

Propose the following in Section 300:

* To delete Section 301 PREVENT LEAKS AND SPILLS
* To delete Section 302 GASOLINE DELIVERY VESSEL LEAK TEST REQUIRED
* To delete Section 303 DISPLAY A VALID DECAL
* To delete Section 304 PURGING PROHIBITED
* To delete Section 305 EXEMPTIONS
* To add Section 301 GASOLINE CARGO TANK REQUIREMENT
* To add Section 301.1 Gasoline Cargo Tank Integrity
* To add Section 301.2 Maricopa County Air Pollution Vapor Tightness Certification
* To add Section 301.3 Purging
* To add Section 302 LOADING OF GASOLINE
* To add Section 302.1 Loading of Gasoline into a Gasoline Cargo Tank from a Bulk Plant
* To add Section 302.2 Loading of Gasoline at a Bulk Terminal
* To add Section 302.3 Loading of Gasoline into a Stationary Gasoline Storage Tank at a Non-Retail Gasoline Dispensing Facility
* To add Section 302.4 Loading of Gasoline into a Stationary Gasoline Storage Tank at a Retail Gasoline Dispensing Facility

Propose the following in Section 400:

* To revise Section 401 MARICOPA COUNTY AIR POLLUTION VAPOR TIGHTNESS TESTING
* To revise Section 401.1 Notification of Required Testing
* To revise Section 401.2 Registration
* To revise Section 401.3 Expiration

* To revise Section 401.4 Loss, Defaced or Destroyed Maricopa County Vapor Tightness Certification Decal
* To revise Section 402 TIME FRAME FOR INSTALLATION OF CONTROL DEVICE

Propose the following in Section 500:

* To renumber Section 501 RECORDKEEPING AND REPORTING REQUIREMENTS to Section 502
* To add Section 501 GASOLINE CARGO TANK VAPOR TIGHTNESS TESTING REQUIREMENT
* To renumber Section 502 MONITORING FOR LEAKS to Section 503
* To renumber Section 503 COMPLIANCE to Section 504
* To renumber Section 504 TEST METHODS to Section 505
* To add Section 505.1 Alternative Work Practice for Monitoring Equipment Leaks
* To add Section 505.2 EPA Method 21
* To renumber Section 504.1 EPA Method 27 to Section 505.3
* To renumber Section 504.2 ASTM D323 to Section 505.4
* To renumber Section 504.3 Test of Internal Vapor Valves to Section 505.5
* To renumber Section 504.4 Delivery Vessel Vapor Tightness Test to Section 505.6

6. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
   (a) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
   (b) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. While currently classified as a "marginal" ozone nonattainment area, the county recently failed to meet 2008 8-hour ozone standard by the marginal area attainment date and anticipates EPA will issue a notice proposing to re-classify the area to "moderate". Further, a portion of the county was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the county to continue to maintain the measures and requirements that allowed the county to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM_{10} 24-hour standard. This is the only serious PM_{10} nonattainment area in Arizona. Revisions to Rule 352 are being proposed to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS).

The department complies with A.R.S. § 49-112(B) in that the proposed amendments to Rule 352 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49, address the peculiar local conditions in Maricopa County, are authorized under A.R.S. Title 49, Chapter 3, Article 3, and are not in lieu of a state program.

7. **Documents and/or studies referenced and/or reviewed for this rulemaking:**
Not applicable

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

9. **Preliminary summary of the economic, small business, and consumer impact:**
The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

An identification of the rulemaking.
This rulemaking is proposing to revise Rule 352 (Gasoline Delivery Vessel Testing and Use). The revised Rule will be titled: Gasoline Cargo Tank Testing and Use.

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.
The persons who will be directly affected by and bear the costs of this rulemaking to revised Rule 352 will be facilities in Maricopa County that have a gasoline cargo tank which is used to load gasoline, and to all persons who own, operate, maintain, repair, or test such a cargo tank. The department has issued permits to six facilities subject to Rule 352.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**
Because this rulemaking does not impose any new compliance burdens on permitted regulated entities or introduce additional regulatory requirements, the department deemed that none of the revisions have potentially significant economic impacts on permitted sources. It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.
The benefits of the rule revision are anticipated to be a result of the following changes:
- Adding definitions specific to the gasoline industry and in line with terms defined the Code of Federal Regulations;
- Clarifying the regulatory requirements for loading gasoline at bulk terminals, bulk plants and gasoline dispensing facilities;
- Increasing the amount of notification time in advance of cargo tank testing;
- Adding optical gas imaging as an alternative work practice to monitor and identify leaking equipment.

The sources subject to revised Rule 352 already have permits in which these requirements are addressed. Therefore, this revised rule does not impose new requirements on the permitted facilities, and no costs would be incurred for compliance with the rule revisions.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**
The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**
The department anticipates that increased clarity provided by the Rule 352 revisions will provide a benefit to the regulated community; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision will not impose increased monetary or regulatory costs on individuals so regulated.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated.

(a) **An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County have a gasoline cargo tank which is used to load gasoline, and own, operate, maintain, repair, or test such a cargo tank.

(b) **The administrative and other costs required for compliance with the rulemaking.**

This rulemaking updates and clarifies existing rule provisions and definitions to be consistent with federal performance standards; and to reduce confusion and improve understanding and readability. The department considered the implications of the proposed amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**

By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**

This rulemaking does not impose any new compliance burdens on regulated entities that are permitted or introduce additional regulatory requirements and will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated. As such, there are no costs to pass through to consumers, which means there are no impacts on consumers.

A statement of the probable effect on state revenues.

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

10. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name:	Cheri Dale or Hether Krause
	Maricopa County Air Quality Department
	Planning and Analysis Division
Address:	1001 N Central Avenue, Suite 125
	Phoenix, AZ 85004
Telephone:	(602) 506-6010
Fax:	(602) 506-6179
E-mail:	aqplanning@mail.maricopa.gov

11. **Time, place, and nature of the proceedings for the rulemaking:**

Written oral proceeding requests or written comments or both will be accepted until the record is closed on June 13, 2016, 5:00 p.m. Written oral proceeding requests or written comments or both may be mailed, e-mailed, or hand delivered to the department (see Item #4

of this notice). An oral proceeding will be scheduled only upon receipt of a written request before the record is closed on June 13, 2016, 5:00 p.m. Written comments received during the comment period and before the record is closed on June 13, 2016, 5:00 p.m. will be considered formal comments to the Notice of Proposed Rulemaking and will be responded to in the Notice of Final Rulemaking.

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

Not applicable

13. **Incorporations by reference and their location in the rule:**

The following test methods are incorporated by reference in Rule 352, Section 505:

* Optical Gas Imaging: Alternative Work Practice for Monitoring Equipment Leaks, 40 CFR 60.18(g)
* 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)

14. **Full text of the rule follows:**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 352
GASOLINE ~~DELIVERY VESSEL~~ CARGO TANK TESTING AND USE
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~~504~~ 505 TEST ~~MZETHODS~~METHODS

~~Revised 07/13/88~~
~~Revised 11/16/92~~
~~Revised 05/05/99~~
~~Revised 09/25/13~~

Revised 07/13/1988; Revised 11/16/1992; Revised 05/05/1999; Revised 09/25/2013; and **Revised MM/DD/YYYY**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 352
GASOLINE ~~DELIVERY VESSEL~~ CARGO TANK TESTING AND USE

SECTION 100 – GENERAL

101 **PURPOSE:** To limit emissions of volatile organic compounds (VOC) from gasoline ~~delivery vessels~~ cargo tanks.

102 **APPLICABILITY:** This rule applies to any gasoline ~~delivery vessel~~ cargo tank which is used to ~~receive or deliver~~ load gasoline within Maricopa County, and to all persons who own, operate, maintain, repair, or test such a ~~vessel~~ cargo tank.

103 **EXEMPTIONS:**

103.1 This rule does not apply to a 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(d)of this rule; and
  - (6) The owner or operator has a complete copy of the signed affidavit available in the vehicle for inspection by a bulk gasoline plant operator or the Control Officer. Maricopa County will not issue a decal to any vehicle 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 in another state.
  - (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 can provide documentation from another agency that attests to the vapor integrity of the cargo tank. Maricopa County will issue a decal to any vehicle claiming this exemption upon submittal of vapor tightness testing documentation.

103.3 An owner or operator of a gasoline cargo tank exempted by Section 103.1(a) of this rule is allowed to incidentally purge gasoline vapors from such vessel as a passive result of loading, or briefly when lids or ports must be open for inspection.

103.4 **Opening Hatches on Non-Exempt Gasoline Cargo Tanks:**

a. Owners or operators, their contractors, and authorized government agents may open vapor containment equipment on a nonexempt 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 when:
(a) Loading of gasoline is complete.
(b) A gasoline cargo tank has stopped.
(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 hose before a gasoline cargo tank 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 2-POINT SYSTEM: A fill pipe and a vapor recovery pipe pair which are in close proximity to one another and are connected directly to and emerge directly above the tank they serve.~~

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 operations; and
202.3 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 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 operations; and
203.3 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.

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.

~~202~~ **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 ~~delivery~~ loading hose,~~;~~ or any quantity of gasoline ~~lost during those processes~~ 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 tube's spill containment receptacle.

~~203~~ **207** **GASOLINE:** Any petroleum distillate, petroleum distillate/alcohol blend, petroleum distillate/organic compound blend, or alcohol having ~~or blend of petroleum distillate with~~

~~other combustible liquid(s), such as alcohol, that is used as a fuel for internal combustion engines and has~~ a Reid vapor pressure between 4.0 and 14.7 psi (200–760 mm Hg.) as determined by Section 505 ofthis rule, and which is used as a fuel for internal combustion engines. ~~For the purposesof this rule, liquefied petroleum gas (LPG) is excluded.~~

~~204~~ ~~GASOLINE DELIVERY VESSEL: Any vehicular-mounted container such as a tanker truck, tank trailer, cargo tank or any other wheel-mounted container used to transport gasoline. This includes any hoses the vessel carries through which deliveries must be made.~~

208 **GASOLINE CARGO TANK:** Adeliverytan k 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.

209 **GASOLINE DISPENSINGFACILITY:** Any stationaryfacilit y 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 enginesand equipment.

~~205~~ **210** **GASOLINE VAPORS:** Vapors, originating from liquid gasoline, that are usually found in mixture with air. Included are anydroplets of liquid gasoline or of gasoline-vapor condensate that are entrained by the vapor.

~~206~~ **211** **LEAK FREE:** Having no single liquid gasoline leak of more than 3 drops per minute from a gasoline delivery vessel, 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.

~~207~~ **212** **MARICOPA COUNTY(MC)** ~~PRESSURE~~ **VAPOR TIGHTNESS TEST:** The complete pressure, vacuum, and vapor-valve testing of a gasoline ~~deliveryvessel~~ cargo tank that is performed according to Maricopa County specifications as described in ~~subsection 302.2~~ Section 501 of this rule.

~~208~~ **213** **PURGING:** Removing, cleaning, or scouring out gasoline vapors from all or a portion of a ~~delivery vessel~~ gasoline cargo tank by active or passive means and emitting the vapors into the atmosphere.

~~209~~ **214** **STAGE 1 VAPOR RECOVERYSYSTEM (VR SYSTEM):** Any piping, hoses, equipment, and/or devices which are used to collect, store, or process gasoline vapors displaced by the ~~delivery~~loading of gasoline and also by the onloading of gasoline into a vapor laden ~~delivery vessel~~ gasoline cargo tank.

215 **SUBMERGED FILL:** Anydischarge pipe or nozzle which meetsthe applicable specification as follows:

215.1 **Top-Fill or Bottom-Fill Tanks:** 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.

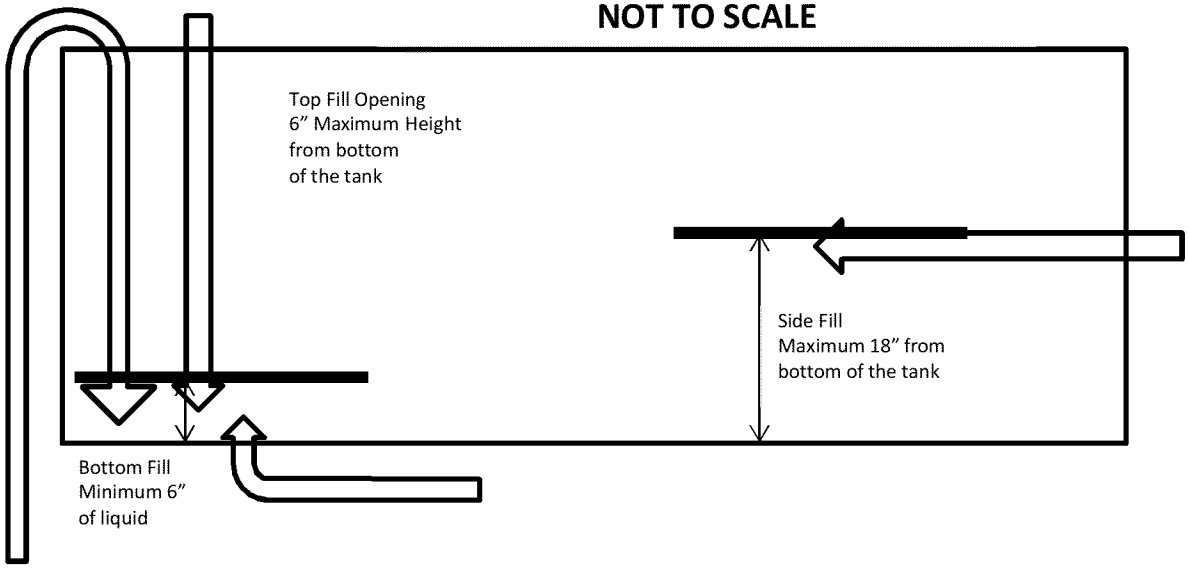
215.2 **Side-Fill:** At its highest point within the storage tank less 2,000,000 gallon capacity, the end of the discharge pipe or nozzle is totally submerged when the liquid level is 18 inches (46 cm) from the bottom of the tank.

215.3 **API Standard 650 Compliant:** A floating roof storagetank containingan organic liquid meets the submerged fill requirements of this Rule 351 if the discharge pipe or nozzle meets both of the following requirements:

a. Is kept completely submerged, including when the roof rests on its legs, except when the tank is being emptied completely and refilled; and

b. Is designed and installed according to the API Standard 650.

Submerged Fill Diagram
NOT TO SCALE



~~210~~ **216** **SWITCH LOADING:** Loading diesel fuel into a ~~delivery vessel~~ gasoline cargo tank whose previous load was gasoline; or loading any liquid not subject to this rule into a ~~delivery vessel~~ gasoline cargo tank whose previous load wasgasoline.

~~211~~ **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 LEL (lower explosive limit) subsequent to calibration with a gas specified by t h e manufacturer and is used according to the manufacturer's instructions.

SECTION 300 – STANDARDS

~~301 PREVENT LEAKS AND SPILLS:~~

~~301.1 Vessel Integrity: In Maricopa County, no person shall store or transport gasoline in or otherwise use or operate any gasoline delivery vessel unless such vessel is designed and maintained to be vapor tight and leak free.~~

~~301.2 Onloading Measures:~~

~~a. At any bulk loading rack, connect a vapor return hose before connecting any loading hose.~~

~~b. At a bulk plant, connect an additional vapor hose before connecting any additional loading hose, unless an assisted vapor return system is serving the vapor hose that is already connected.~~

~~c. Use a bucket or other effective capture device to catch any liquid dripping during the connection or disconnection of both the loading hose from the truck and the vapor hose from the loading dock's vapor receiving pipe.~~

~~(1) Either dispose of the captured liquid in a tank designated for that purpose, or use a receptacle or a material designed to absorb the liquid.~~

~~(2) Any gasoline that escapes or spills must be collected and contained.~~

~~301.3 Prevent Spills and Excess Drainage: A driver/operator of a gasoline delivery vessel shall:~~

~~a. Thoroughly drain a fill hose and a vapor recovery hose into the dispensing tank before disconnecting it from the tank's fittings.~~

~~b. Connect and disconnect fill 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.~~

~~c. Spills and any gasoline that is deposited in or on an area other than within the dispensing 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.~~

~~301.4 Vapor Hose use Required at Retail Gas Stations:~~

~~a. A driver/operator shall not deliver gasoline to a dispensing tank at a retail gas station unless a vapor hose is first connected from the vessel to a vapor return-line serving the tank.~~

~~b. No delivery shall be made to a retail tank if:~~

~~(1) it is not served by a vapor return, or~~

(2) if it has a locked cap that cannot be removed, or
(3) if broken fittings prevent correct connection of the vapor hose.

301.5 Prevent Vapor Escape During Deliveries: For gasoline dispensing tanks that are equipped with a Stage 1 vapor recovery system (VR System):

a. During delivery, the vessel 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 delivery vessel.
b. Connect a vapor recovery hose before connecting any gasoline delivery hose.
c. Disconnect a delivery hose from a tank before disconnecting the vapor recovery hose.
d. Restriction on Multiple Connection: A delivery vessel shall not simultaneously have more than one gasoline delivery hose connected, unless each delivery hose is connected to a dispensing tank's 2-point system that already has a vapor hose connecting it to the vessel.

301.6 Vapor Recovery Systems Having Remote Vapor Return Lines: If a delivery vessel's vapor hose is connected to a vapor return line that is not part of a 2-point system, then there shall not be more than one gasoline delivery hose connected to the vessel, and no other hoses connected to a fill tube; viz., no more than one compartment of the delivery vessel shall be emptied at a time.

302 GASOLINE DELIVERY VESSEL LEAK TEST REQUIRED: A gasoline delivery vessel shall first pass the MC Pressure Test before delivering or onloading gasoline within Maricopa County, and to continue, must pass the MC Pressure Test each year thereafter. This does not apply to loads that originate solely in another state, nor to loads originating in Maricopa County that are not delivered in Maricopa County.

302.1 Testing: The MC Pressure Test shall be performed according to subsection 302.2.

a. Scheduling and notification of an initial test or annual retest shall be done in accordance with subsection 401.1 and subsection 401.3.
b. A tester shall record the results of a Pressure Test according to the format in subsection 501.2.
c. A valid Maricopa County Air Quality Department decal shall be affixed to the vessel consequent to passing the MC Pressure Test before the vessel may deliver or onload gasoline.
d. An owner or operator of a delivery vessel shall comply with subsection 401.2 registration requirements to obtain a valid Maricopa County Air Quality Department decal after a successful MC Pressure Test.

302.2 MC Pressure Test: A vessel that is being MC Pressure Tested shall pass all 3 of the following pressure subtests, in the following order, and use the same vapor hose during the test as will be used for deliveries by that same unit:

a. Positive Pressure Subtest: 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 504 of this rule; and
b. Vapor Valve Subtest: Lose no more than 5.0 inches (127 mm) of water column in 5.0 minutes, measured in the vapor system after the vessel 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 subsection 503.2 of this Rule 352; and
c. Partial Vacuum Subtest: 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 504 of this rule.
d. Pressure Instability: A subtest is invalidated if during either of the pressure subtests, more than 1/2 inch water pressure is gained, or if during the vacuum test the vacuum is increased by more than minus ½ inch.

302.3 A vessel shall be repaired, retested, and pass all 3 subtests in the same testing period within 15 days of testing if it does not pass all 3 subtests of subsection 302.2 of this rule.

303 DISPLAY A VALID DECAL: Each gasoline delivery vessel shall clearly display a valid Maricopa County Air Quality Department decal that is permanently mounted near the front on the right (passenger) side of the vessel.

304 PURGING PROHIBITED:

~~304.1 No person shall purge gasoline vapors into the atmosphere from a delivery vessel unless the following conditions are met:~~

~~a. 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~~

~~b. Such purging shall be done only after all delivery 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.~~

~~304.2 An operator of a delivery vessel shall not purge gasoline vapors from such vessel as a passive result of switch loading, except for vessels exempted by subsection 305.1.~~

~~305 EXEMPTIONS:~~

~~305.1 A delivery vessel is exempt from pressure test requirements of Section 302 if all of the following conditions are met:~~

~~a. The vessel was placed in operation before July 13, 1988; and~~

~~b. The vessel transported gasoline within Maricopa County before January 1, 1998; and~~

~~c. The vessel never loads at a gasoline terminal; and~~

~~d. The vessel serves only farm tanks and/or those non-resale dispensing operations having a yearly throughput not exceeding 120,000 gallons of gasoline, verified by monthly records pursuant to subsection 501.1a; and~~

~~e. The vessel either has a sticker affixed to it that indicates to a bulk plant operator that the vessel may be loaded in Maricopa County, or has an affidavit signed by an owner or officer of the operating company filed with the Maricopa County Air Quality Department, with a complete copy of the signed affidavit available in the vehicle for inspection by a bulk plant operator or the Control Officer.~~

~~305.2 An operator of a delivery vessel exempted by subsection 305.1 is allowed to incidentally purge gasoline vapors from such vessel as a passive result of loading, or briefly when lids/ports must be open for inspection.~~

~~305.3 Opening Hatches on Non-Exempt Vessels:~~

~~a. Required by Rule: Owners/operators, their contractors, and authorized government agents may open vapor containment equipment on a nonexempt gasoline delivery vessel 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 after onloading is complete and after a delivery vessel has stopped before opening its hatch or other vapor seal.~~

~~(2) Reclose hatch or other sealing device within 3 minutes of completing the required procedures.~~

~~(3) Limit windspeed at opened hatch or other opened sealing device to not more than 3 mph (1.34 m/sec), using a barrier if necessary.~~

~~b. Defueling: Hatches of a delivery vessel may be open for monitoring to prevent overflow during the period that the vessel is receiving 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 hose before a gasoline delivery hose do not apply to coaxial VR connection fittings.~~

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 Maricopa County 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 cargo tank, if not exempted by Section 103 of this rule.

301.2 **Maricopa County Air Pollution Vapor Tightness Certification:** A gasoline cargo tank shall pass the Maricopa County Air Pollution Vapor Tightness Test before loading gasoline within Maricopa County unless exempted by Section 103 of this rule.

a. **Testing:** The vapor tightness test shall be performed according to Section 501 of this rule.
   (1) Scheduling and notification of gasoline cargo tank vapor tightness testing shall be done in accordance with Section 401.1 of this rule.
   (2) A tester shall record the results of the 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 Maricopa County Air Pollution 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 Section 401.2 of this rule for registration requirements to obtain a valid Maricopa County Vapor Tightness Certification decal after passing the Maricopa County Air Pollution 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 vessel 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 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 103.1(a)(6) of this rule is readily available.

b. A vapor return hose shall be connected prior to the connection of any gasoline loading hose at any bulk loading rack.

c. Connect an additional vapor 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 fill 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 liquid dripping during the connection or disconnection of both the gasoline loading hose from the truck and the vapor hose from the loading dock's vapor receiving pipe.
   (1) Either dispose of the captured liquid in a tank designated for that purpose, or use a receptacle or a material designed to absorb the liquid.
   (2) Any gasoline that escapes or spills 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 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 return hose shall be connected prior to the connection of any gasoline loading hose at any bulk loading rack.

c. Connect an additional vapor 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 fill 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 liquid dripping during the connection or disconnection of both the gasoline loading hose from the truck and the vapor hose from the loading dock's vapor receiving pipe.

(1) Either dispose of the captured liquid in a tank designated for that purpose, or use a receptacle or a material designed to absorb the liquid.

(2) Any gasoline that escapes or spills must be collected and contained.

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 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 103.1(a)(6) of this rule is readily available.

b. A vapor return 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 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 tube.

d. 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 loading hose connecting it to the gasoline cargo tank.

e. A portable fill tube 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 hose connecting it to the gasoline cargo tank.

g. Thoroughly drain a fill hose and a vapor recovery hose into the gasoline cargo tank before disconnecting it from the gasoline cargo tank's fittings.

h. Disconnect fill 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.

i. 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.

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 load gasoline at a retail gasoline dispensing facility when the following conditions are met:

a. The owner or operator of a gasoline cargo tank shall:

(1) Maintain the cargo tank integrity; and

(2) Clearly display 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 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 fill hose and a vapor recovery hose into the gasoline cargo tank before disconnecting it from the gasoline cargo tank's fittings.

h. Disconnect a delivery hose from a stationary gasoline storage tank before disconnecting the vapor recovery hose.

i. Disconnect fill 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 AIR POLLUTION VAPOR TIGHTNESS TESTING: Testing required by ~~subsections 302.2a, b, and c~~ Section 301.2 of this rule, shall be conducted by the owner or operator of the ~~delivery vessel~~ gasoline cargo tank., ~~or by a consultant, at the expense of the owner or operator.~~ The Control Officer may at any time observe the tests. An owner or operator shall comply with the following provisions:

Notification of Required Testing: The owner, operator, or tester shall notify the Control Officer as follows for each ~~vessel~~ gasoline cargo tank being tested to meet requirements of ~~Section 302 or subsection 301.2~~ Section 301 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; ~~and~~

b. ~~Give~~ 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 ~~24 hours in advance of~~ 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 ~~302~~ 301.2 of this rule requirements, except if the Control Officer gives specific, advance permission for a particular occasion.

Registration: To obtain a Maricopa County Vapor Tightness Certification decal, ~~do~~ the following information shall be submitted to the Department for each vessel and each vapor recovery hose that passes the required ~~annual~~ gasoline cargo tank vapor tightness test:

a. ~~Assemble in 1 packet the following 3 items: (1) A properly~~ A completed "APPLICATION FOR AIR POLLUTION VAPOR ~~RECOVERY~~ TIGHTNESS CERTIFICATION" (~~also called "The Application"~~ application)~~, and~~ that

includes, at a minimum, all of the following information required by Section 502.2 of this rule.

~~(2)~~ **b.** A ~~properly~~completed copyof the ~~MCESD~~ "Maricopa County Air Quality Department Gasoline Cargo Tank Vapor Tightness ~~"Tank Truck Leak~~ Certification Check List"(checklist), and

~~(3)~~ **c.** The annual fee remittance. (The fee amount appears in Rule 280.)

~~b. Send or convey this single packet to the Maricopa County Air Quality Department at the address on the top of the application.~~

~~c.~~ **d.** Upon receipt of ~~these 3 properlycomplete d items~~ the completed application, checklist and feeremittance, a Maricopa County Vapor Tightness Certification decal will be issued by the Control Officer.

Expiration:

a. A Maricopa County Vapor Tightness Certification decal that is issued to a ~~vessel~~ 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 ~~vessel~~ 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 year. ~~For example, if the test is passed between July 1, 2000, through February 28, 2001, the decal expires on June 30, 2001.~~

Loss, Defaced or Destroyed Maricopa County Vapor Tightness Certification Decal:

a. An owner or operator shall notify the Control Officer immediately if a valid ~~decal/sticker~~ Maricopa County Vapor Tightness Certification decal is lost, defaced, or destroyed.

b. The Control Officer may require a demonstration of need for 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 ~~decal/sticker~~ Maricopa County Vapor Tightness Certification Decal, if the Control Officer determines that the Department is not at fault.

402 ~~TIME FRAME FOR~~ **INSTALLATION OF CONTROL DEVICE:** An owner or operator of a ~~vessel~~ gasoline cargo tank testing operation who chooses to comply with the Section ~~304~~ 301.3 of this rule purging provisions through the use of a control device shall submit ~~by August 1, 1999~~, an application for a Maricopa County Air Pollution Control Permit and an Operation and Maintenance Plan for the control device. ~~The device shall be fully functioning by May 1, 2000.~~

SECTION 500 – RECORDS AND MONITORING

501 GASOLINE CARGO TANK VAPOR TIGHTNESS TESTING REQUIREMENT: Each gasoline cargo tank shall pass 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 vessel 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 vessel shall be repaired, retested, and pass all three (3) tests in the same testing period within 15 days of testing if it does not pass all three (3) tests of Section 501.1 of this rule.

~~501~~ **502 RECORDKEEPING AND REPORTING REQUIREMENTS:**

502.1 The owner or operator of a gasoline ~~delivery vessel~~ 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, or a designee of 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.

502.2 The records of the gasoline cargo tank vapor tightness certification testing required by Section 302 301 of this rule, must be recorded in both of the following documents: the "Application for Air Pollution Vapor ~~Recovery~~ Tightness Certification" and the "Maricopa County Air Quality Department Gasoline Cargo Tank Vapor Tightness ~~"Tank Truck Leak~~ 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 "Application for Air Pollution Vapor ~~Recovery~~ Tightness Certification":

(1) Owner's name and address.

(2) ~~Tank ID number, the location of the test, the time of the test, and the date of the test.~~ The manufacturer's ~~Tank ID~~ gasoline cargo tank serial number,~~.~~

(3) The location of the test.

(4) The time of the test.

(5) The date of the test.

~~(3)~~ **(6)** For the pressure ~~subtest~~test, ~~2~~ two (2) readings: the change in pressure (in inches ~~H2O~~ of water) for Run 1 and the change in pressure for Run 2.

~~(4)~~ **(7)** For the vapor-valve loss test ~~subtest (subsection 302.2b), 1~~ one (1) reading: the total change in pressure during the test.

~~(5)~~ **(8)** For the vacuum test, ~~2~~ two (2) readings: the total change in vacuum during Run 1 and the same for Run 2.

(9) The signature of the person conducting the vapor tightness test.

b. The "Maricopa County Air Quality Department Gasoline Cargo Tank Vapor Tightness ~~"Tank Truck Leak~~ Certification Check List" ~~(or its successor document)~~ shall contain at least the following information:

(1) ~~The same information required in subsections a(1) and a(2) of this subsection 501.2; and~~

(2) ~~The time the subtest began, the initial pressure of the subtest, the finish time, the final pressure of the subtest, and the pressure change between the start and end of the subtest; the vessel's unit number, manufacturer's serial number, the tank capacity, whether the tank was purged of gasoline vapors, and the date of the next leakage test if the set of 3 subtests are not all passed.~~

(3) ~~If the initial pressure test was not passed, one set of readings in the row "Initial Test", also giving the elapsed time if the pressure reached zero before 5 minutes. For example, the row marked "Initial Test" will normally contain the results of the initial failed subtest if any repairs were made subsequent to any pressurization or evacuation of the tank.~~

(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, and

(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; and
(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.

~~502~~ **503** **MONITORING FOR LEAKS:** The Control Officer may at any time monitor a ~~delivery vessel~~ gasoline cargo tank, including the vapor collection system, for vapor and liquid leaks to ascertain if it is vapor tight and leak free. ~~Leakage of vapor exceeding 1/5 of the lower explosive limit, or 10,000 ppm as methane, when performed according to subsection 504.4, shall be an exceedance of the vapor-tight standard of subsection 301.1.~~ The Control Officer may use one or more of the following to determine vapor tight and leak free conditions:

503.1 Combustible gas detector or an organic vapor analyzer:

a. **Calibration:** Within 4 hours prior to monitoring, the combustible gas detector or organic vapor analyzer shall be suitably calibrated for a 20 percent LEL response, or to 10,000 ppm with methane.

b. **Probe Distance:** The probe inlet shall be 1 inch (2.5 cm) or less from the potential leak source when searching for leaks. The probe inlet shall be 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 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 a potential or actual 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 a leak such that the central axis of the probe-tube inlet shall be positioned coaxially with the path of the most concentrated vapors.

e. **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 determine if a vapor leak exists.

503.3 **Optical Gas Imaging:** An owner or operator 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 determine if a vapor leak exists.

~~503~~ **504** **COMPLIANCE:** ~~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.~~ 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 at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, AZ 85004. 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.

504.1 **Pressure and Vacuum Tests:** The subtests to determine compliance with ~~subsection 302.2a and subsection 302.2c~~ Section 301 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 352~~ rule.

504.2 **Test of Internal Vapor Valves:** The test to determine compliance with ~~subsection 302.2b~~ Section 301 of this rule, shall be performed immediately after successfully passing the pressure subtest ~~(pursuant to subsection 302.2a)~~, without performing any intervening maintenance or repair on the vapor valves.

504.3 Confirmation of a vapor leak detected on a vessel during ~~onloading~~ loading shall be determined by properly deploying a pressure tap adapter that conforms to Method 27 provisions, and demonstrating the leak according to ~~subsection 504.4~~ Section 505 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 ~~American Society for Testing and Materials (ASTM) Method D 323-90~~ ASTM D323 - 15a: Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).

~~504~~ **505** **TEST METHODS:** The EPA test ~~method~~ methods as ~~it exists~~ they exist in the Code of Federal Regulations (CFR) (~~July 1, 1998~~ July 1, 2016), as listed below, ~~is~~ 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 ~~504~~ 505 of this rule, are available at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, Arizona 85004.

505.1 **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 21to monitor for equipment volatile organic compound leaks.

505.2 EPA Method 21 – Determination of Volatile Organic Compound Leaks.

505.3 EPA Method 27 ~~("~~Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure-Vacuum Test.~~") in 40 CFR 60, Appendix A.~~

505.4 ~~American Society for Testing and Materials (ASTM) Method D 323-90, 1990 (Reid vapor pressure).~~ ASTM D323 - 15a: Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).

505.5 **Test of Internal Vapor Valves:**

- **a.** Pressurize the delivery vessel to 18 inches (45.7 cm) of water column, using the first 2 procedures of the "Pressure Test" section of EPA Method 27.
- **b.** Close all the vessel's internal valves, including the internal vapor valves, thereby isolating the vapor system (vapor return line plus vapor manifold) from the compartments.
- **c.** Relieve the pressure in the vapor return line (to atmospheric pressure).
- **d.** Seal the vapor return line and after 5.0 minutes record the pressure present in the vapor system.

505.6 **Delivery Vessel Vapor Tightness Test:** A vapor tight condition will be determined for vessels by the following method:

- **a.** **Calibration:** Within 4 hours prior to monitoring, the combustible gas detector or organic vapor analyzer shall be suitably calibrated for a 20 percent LEL response, or to 10,000 ppm with methane.
- **b.** **Probe Distance:** The probe inlet shall be 1 inch (2.5 cm) or less from the potential leak source when searching for leaks. The probe inlet shall be 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 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 a potential or actual 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 a leak such that the central axis of the probe-tube inlet shall be positioned coaxially with the path of the most concentrated vapors.

e. **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.

NOTICE OF PROPOSED RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 353: GASOLINE IN STATIONARY DISPENSING TANKS
PREAMBLE

1. **Rule affected** — **Rulemaking action**

Rule 353: Gasoline in Stationary Dispensing Tanks — Amend

2. **Statutory authority for the rulemaking:**

Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

3. **List of public notices addressing the rulemaking:**

Notice of Briefing to Maricopa County Manager: May 2015
Notice of Stakeholder Workshops: June 30, 2015, September 14, 2015, and February 22, 2016

4. **Name and address of department personnel with whom persons may communicate regarding the rulemaking:**

Name: Cheri Dale or Hether Krause
Maricopa County Air Quality Department
Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
Phoenix, Arizona 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-Mail: aqplanning@mail.maricopa.gov

5. **Explanation of the rule, including the department's reasons for initiating the rulemaking:**

Summary: Rule 353 (Gasoline in Stationary Dispensing Tanks) limits the emission of volatile organic compounds (VOCs) from gasoline stored in stationary dispensing tanks and from gasoline delivered into such tanks. Revisions to Rule 353 are being proposed to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS).

The Maricopa County Air Quality Department (department) is proposing to revise Rule 353 to be consistent with current gasoline industry terms and definitions; to clarify the storage and loading requirements of an underground storage tank and an above ground storage tank; to update test methods to be consistent with state and federal test methods; and to clarify the inspection requirement for gasoline dispensing facilities that receive gasoline less than once per week.

In addition, the proposed amendments will correct typographical or other clerical errors; make minor grammatical changes to improve readability or clarity; modify the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or make various other minor changes of a purely editorial nature. As these changes do not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the "underline/ strikeout" version of the rules contained in Item 14 of this notice.

Background: In the early 1970's, the United States Environmental Protection Agency (EPA) issued transportation control plans that included requirements to control VOC emissions during the loading of gasoline into a storage tank. In 1978, the EPA followed up by issuing a Control Techniques Guideline (CTG) for the "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems." The purpose of this CTG was to "…define leak tight conditions and related test procedures for vapor collection systems and

tank trucks while loading and unloading …" The CTG represented the reasonably available control technology (RACT) that could be applied to existing facilities. The CTG was issued to provide a guideline for areas of nonattainment for the NAAQS.

The Clean Air Act Amendments (CAAA) of 1990 required ozone nonattainment areas to implement RACT to control VOC emissions. This RACT determination for the associated industry was to be incorporated into the SIP. RACT is defined by the EPA as "The lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." (44 FR53761, September 17, 1979) To assist state and local agencies in determining RACT, the EPA issues CTGs for specific sources. A CTG describes the "presumptive norm" for RACT and includes a review of current knowledge, technology and costs of a variety of emission control techniques. These guidelines provide state and local environmental agencies a guide in establishing RACT regulations for gasoline dispensing operations. The state or local agency can then use the presumptive norm for RACT or develop more stringent measures to meet the established ozone standards.

On January 10, 2008, the EPA issued the National Emission Standards for Hazardous Air Pollutant (NESHAP) for Source Category: Gasoline Dispensing Facilities (73 FR 1945). The NESHAP set forth national emission limits and identified management practices for the gasoline dispensing facilities. Most importantly, the NESHAP did not exclude any gasoline storage tank from the management practices, no matter what the gasoline storage tank capacity.

Current Rulemaking Background: Maricopa County drafted the first county-wide air quality rules pertaining to the storage and loading of gasoline in the 1970's. Rule 33 put into rule requirements for the storage and handling of petroleum products. In the 1980's, Rule 33 was broken into specific sections to address bulk loading facilities, delivery vessels, and loading into stationary storage tanks. Rule 33.3 (Loading into Stationary Storage Containers) specifically addressed the control of VOC emissions from gasoline service stations (now referred to as gasoline dispensing facilities). Rule 33.3 was submitted for inclusion in the 1982 Arizona State Implementation Plan (SIP). The rule included requirements for loading to include the use of submerged fill and the capture of at least 90% of the gasoline vapors displaced during the loading of gasoline. Gasoline storage tanks that were used "exclusively for the fueling of implements of normal cultural farm practices…" were exempted from the rule. Partial exemptions for provided for storage tanks with under 1,000 gallon capacity; non-resale gasoline storage tanks; and tanks installed prior to specific dates. In 1985, Rule 33.3 was again submitted to the EPA for inclusion into the SIP. Per the department evaluation on February 11, 1986, Rule 33.3 was consistent with the requirements in the Clean Air Act and 40 CFR 51.22.

The department again revised Rule 33 in order to submit the rules as part of the NAAQS SIP. On July 13, 1988, the Maricopa County Board of Supervisors adopted revisions to Rule 33.3 to include the reformatting of Rule 33.3 to Rule 353 (Transfer of Gasoline into Stationary Storage Tanks); and the reformatting of the rule.

In 1992, the department revised Rule 353 to be consistent with the RACT guidance documents issued by the EPA in 1978. These revisions included the incorporation of EPA policy statements that were issued after the promulgation of the RACT guidance documents. The 1999 revisions by the department clarified the responsibility of owners and operators of gasoline dispensing facilities with respect to vapor recovery equipment. The fill pipe and vapor recovery return provisions were expanded. A dual point vapor recovery system was required to be install in each new gasoline storage tank or when a major modification occurred. California Air Resources Board (CARB) certified equipment was required for Stage I vapor recovery systems. The installation of poppetted valves was required. Standards were included for spill containment devices. Leak detection test procedures were spelled out in detail. Record retention was expanded to five years. These revisions currently are in place.[7]

A limited scope revision to Rule 353 was drafted in 2013 (19 A.A.R. 3636, November 22, 2013) to delete the definition of non-precursor organic compound. The department relocated the list of EPA recognized "non-precursor organic compounds" (40 CFR 51.100(s)) into Maricopa County Air Pollution Control Regulations, Appendix G (Incorporated Materials) to provide a means to expeditiously update any revisions to the EPA definition of VOC.

Issues Raised and Discussed During This Rulemaking Process:

The department held three Stakeholder Workshops: June 30, 2015, September 14, 2015, and February 22, 2016. Stakeholders included representatives from APS, Caljet, CDM Smith,

Cemex, City of Glendale, City of Mesa, City of Phoenix, EnCore Consulting, Envirosure Solutions, Kiewit, Pinal County, SRP, Washington Elementary School, and the EPA.
The department is proposing revisions to Rule 353 definitions for consistency with current gasoline industry terms and definitions; to clarify the storage and loading requirements of an underground storage tank and an above ground storage tank; to update test methods to be consistent with state and federal test methods; and to clarify the inspection requirement for gasoline dispensing facilities that receive gasoline less than once per week.
Previously (December 20, 2000) the department had issued a technical guidance, #TG00-002, addressing the issue of inspection of gasoline dispensing tanks that receive a load of gasoline once per week. Per the discussion in the document, "The intended purpose of requiring inspections…is to assure both that the fill and vapor return assemblies are fit to receive gasoline and that the integrity of these assemblies is maintained so as to prevent gasoline evaporation between deliveries." The guidance concluded that if gasoline was loaded at a frequency of less than once per week, that the inspection and recording of the inspection could be conducted at the time of each gasoline delivery. The department is proposing to incorporate this technical guidance into the rule.
The department is proposing to revise the rule title to "Storage and Loading of Gasoline at Gasoline Dispensing Facilities" to clarify the specific activities at the site that this rule would apply to. In addition, the purpose and applicability sections are also proposed to be revised to further add clarification in the rule.
Current rule language and definitions are not consistent between the county rules relating to gasoline nor with the federal language for gasoline dispensing facilities. The department is proposing to revise rule language and definitions to be consistent with other Maricopa County rules and federal rule language. This will provide consistency between regulatory agencies as well as between rules to provide clear and consistent definitions and terms for Stakeholders. At the workshops, it was discussed as to how many terms used in the federal regulations should or are reasonable to include in local rules. The Stakeholders and department staff recommended that definitions that are applicable to the county should be included but not necessarily all the federal definitions.
The department is proposing to add an alternative to the installation of only California Air Resources Board (CARB) certified equipment. The proposed rule language would allow equipment approved by an industry recognized third party to be installed. Prior to installation of the non-CARB certified equipment, the proposed rule would require the owner or operator to provide a written request to the Control Officer to review and accept the non-CARB certified component. The department is proposing to include a requirement that the Control Officer shall provide written approval prior to the installation any non-CARB-certified component.
During the initial phase of the Rule 353 rulemaking process, the department initially proposed to consolidate Rule 352 (Gasoline Delivery Vessel Testing and Use) and Rule 353. At the workshops, Stakeholders expressed confusion and questioned the reasoning as to why the two rules should be combined. The department initially felt that combining the two rules would clarify the responsibilities of the cargo tank operators especially when loading gasoline into and out of stationary gasoline storage tanks. Further discussions with Stakeholders and department staff indicated the proposed consolidation of the two rules added confusion rather than clarified responsibilities. The department agreed and proceeded to revise Rule 352 and Rule 353 as separate rules.
Prior to the opening of the rule for revisions, Stakeholders were questioning the specific requirements for an above ground storage tank. Questions centered around the requirement and use of a spill containment receptacle for the fill pipe on an above ground storage tank. To clarify all the requirements for both the above ground storage tanks and the underground storage tanks, the department is proposing to add separate rule sections for each.
The department is proposing to revise Section 502.4 to require records to be made available to the Control Officer within 24 hours upon verbal or written request. This will provide the owner or operator of a gasoline dispensing facility to remotely access records stored off-site. This will also provide consistency within the department when requesting records. There was no discussion brought up at any of the Stakeholder Workshops on this proposed revision.
The department is proposing to define "submerged fill" to be consistent throughout the gasoline rules. The inclusion of a graphic depicting the types of fill piping was proposed by the department. Stakeholders agreed the graphic added value to the definition and recommended including it in the rule.

Description of Proposed Amendments:

Propose to revise the following throughout the rule:

* To delete the wording "stationary dispensing tank" and replace with "gasoline dispensing facility"
* To delete the word "transfer" and replace with "load"
* To delete the wording "2-Point" and replace with "dual-point"
* To delete the word "person" and replace with "owner or operator"
* To delete past compliance dates
* To add or revise specific rule section references
* To add "stationary" to describe the type of storage tank

Propose the following in Section 100:

* To revise Section 101 (Purpose) to include the storage and loading of gasoline at gasoline dispensing facilities
* To revise Section 102 (Applicability) to apply to an owner or operator of a gasoline dispensing facility
* To add Section 103 (Exemptions)

Propose the following in Section 200:

* To revise CARB-CERTIFIED
* To add COAXIAL VAPOR BALANCE SYSTEM
* To add DUAL-POINT VAPOR BALANCE SYSTEM
* To revise GASOLINE
* To delete GASOLINE DELIVERY VESSEL
* To add GASOLINE CARGO TANK
* To delete GASOLINE DISPENSING OPERATION
* To add GASOLINE DISPENSING FACILITY
* To delete INSTALLER
* To add MARICOPA COUNTY (MC) VAPOR TIGHTNESS TEST
* To delete OFFSET FILL LINE
* To revise POPPETTED DRY BREAK
* To add PURGING
* To delete SIDE FILL PIPE
* To revised STAGE I VAPOR RECOVERY
* To revise STATIONARY DISPENSING TANK
* To add SUBMERGED FILL
* To delete TOP FILL or VERTICAL FILL PIPE
* To revise VAPOR LOSS CONTROL DEVICE
* To revise VAPOR TIGHT

Propose the following in Section 300:

* To delete Section 301 (Basic Tank Integrity)
* To delete Section 302 (Fill Pipe Requirements)
* To delete Section 303 (Vapor Recovery System)
* To delete Section 304 (Equipment Maintenance and Use Required)
* To delete Section 305 (Exemptions)
* To add Section 301 (Manufacturers, Suppliers and Owners or Operators)
* To add Section 302 (General Housekeeping Requirements)
* To add Section 303 (Gasoline Storage Equipment and Operation Requirements)
* To add Section 303.1 (Underground Storage Tank (UST))
* To add Section 303.2 (Above Ground Storage Tank (AST))
* To add Section 304 (Loading of Gasoline)
* To add Section 305 (Control of VOC Vapors)

Propose the following in Section 400:

* To delete Section 401 (Tanks that Lost Their Exemption)
* To add Section 401 (Inspections)
* To revise Section 402 (Burden of Proof)
* To revise Section 403 (CARB Decertification)
* To revise Section 404 (Other Agencies Requirements)

Propose the following in Section 500:

* To revise Section 501 (Compliance Inspections)
* To revise Section 502 (Gasoline Dispensing Facility Recordkeeping)
* To revise Section 502.2
* To revise Section 502.4
* To delete Section 503.4

* To revise Section 503
* To revise Section 503.1
* To revise Section 503.2
* To revise Section 503.3 (Vapor Leaks)
* To delete Section 503.4
* To revise Section 504 (Test Methods)
* To revise Section 504.1 (EPA Test Methods)
* To revise Section 504.2 (Gasoline Vapor Pressure)
* To revise Section 504.3 (Leak Detection Test Method)
* To revise Section 504.4 (CARB Certification and Test Procedures for Gasoline Vapor Recovery Systems.

6. **Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
   (a) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
   (b) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. While currently classified as a "marginal" ozone nonattainment area, the county recently failed to meet 2008 8-hour ozone standard by the marginal area attainment date and anticipates EPA will issue a notice proposing to re-classify the area to "moderate". Further, a portion of the county was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the county to continue to maintain the measures and requirements that allowed the county to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM_{10} 24-hour standard. This is the only serious PM_{10} nonattainment area in Arizona. Revisions to Rule 353 are being proposed to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS).

The department complies with A.R.S. § 49-112(B) in that the proposed amendments to Rule 353 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49, address the peculiar local conditions in Maricopa County, are authorized under A.R.S. Title 49, Chapter 3, Article 3, and are not in lieu of a state program.

7. **Documents and/or studies referenced and/or reviewed for this rulemaking:**

Not applicable

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

9. **Preliminary summary of the economic, small business, and consumer impact:**
The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

An identification of the rulemaking.
This rulemaking is proposing to revise Rule 353 (Gasoline in Stationary Dispensing Tanks). The revised Rule will be titled: Storage and Loading of Gasoline at Gasoline Dispensing Facilities.

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.
The persons who will be directly affected by and bear the costs of this rulemaking to revised Rule 353 will be facilities in Maricopa County that own or operate a gasoline dispensing facility, including those located at airports. The department has issued permits to 165 facilities subject to Rule 353.

A cost benefit analysis of the following:

(a) **The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**
Because this rulemaking does not impose any new compliance burdens on permitted regulated entities or introduce additional regulatory requirements, the department deemed that none of the revisions have potentially significant economic impacts on permitted sources. It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.
The benefits of the rule revision are anticipated to be a result of the following changes:
- Clarifying the storage and loading requirements of an underground storage tank and an above ground storage tank;
- Updating test methods to be consistent with state and federal test methods;
- Clarifying the inspection requirement for gasoline dispensing facilities that receive gasoline less than once per week;
- Correcting typographical or other clerical errors and making minor grammatical changes to improve readability or clarity;
- Modifying the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules.

The sources subject to revised Rule 353 already have permits in which these requirements are addressed. Therefore, this revised rule does not impose new requirements on the permitted facilities, and no costs would be incurred for compliance with the rule revisions.

(b) **The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**
The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

(c) **The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**
The department anticipates that increased clarity provided by the Rule 353 revisions will provide a benefit to the regulated community; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision will not impose increased monetary or regulatory costs on individuals so regulated.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.
The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated.

(a) **An identification of the small businesses subject to the rulemaking.**
Small businesses subject to this rulemaking are those facilities in Maricopa County the owner or operate a gasoline dispensing facility.

(b) **The administrative and other costs required for compliance with the rulemaking.**
This rulemaking updates and clarifies existing rule provisions and definitions to be consistent with federal performance standards; and to reduce confusion and improve understanding and readability. The department considered the implications of the proposed amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

(c) **A description of the methods that the agency may use to reduce the impact on small businesses.**

(i) **Establishing less costly compliance requirements in the rulemaking for small businesses.**
By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) **Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**
This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) **Exempting small businesses from any or all requirements of the rulemaking.**
This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(d) **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**
This rulemaking does not impose any new compliance burdens on regulated entities that are permitted or introduce additional regulatory requirements and will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated. As such, there are no costs to pass through to consumers which means there are no impacts on consumers.

A statement of the probable effect on state revenues.
The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.
This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

10. **Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**

Name:	Cheri Dale or Hether Krause
	Maricopa County Air Quality Department
	Planning and Analysis Division
Address:	1001 N Central Avenue, Suite 125
	Phoenix, AZ 85004
Telephone:	(602) 506-6010
Fax:	(602) 506-6179
E-Mail:	aqplanning@mail.maricopa.gov

11. **Time, place, and nature of the proceedings for the rulemaking:**
Written oral proceeding requests or written comments or both will be accepted until the record is closed on June 13, 2016, 5:00 p.m. Written oral proceeding requests or written comments or both may be mailed, e-mailed, or hand delivered to the department (see Item #4 of this notice). An oral proceeding will be scheduled only upon receipt of a written request before the record is closed on June 13, 2016, 5:00 p.m. Written comments received during the comment period and before the record is closed on June 13, 2016, 5:00 p.m. will be considered formal comments to the Notice of Proposed Rulemaking and will be responded to in the Notice of Final Rulemaking.

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

Not applicable

13. **Incorporations by reference and their location in the rule:**

The following EPA Test Method is incorporated by reference in Rule 353, Section 504:

- 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
- EPA Method 25 ("Determination of Total Gaseous Nonmethane Organic Emissions as Carbon") and its submethods (40 CFR 60, Appendix A)
- EPA Method 27 ("Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure-Vacuum Test") in 40 CFR 60, Appendix A
- 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 21to monitor for equipment volatile organic compound leaks
- ASTM D323-15a "Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)
- ASTM D4953-15 "Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method)
- San Diego County Air Pollution Control District Test Procedure TP-96-1, March 1996, Third Revision, Air Pollution Control District, 9150 Chesapeake Drive, San Diego, CA 92123-1096
- California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1B, Static Torque of Rotatable Phase 1 Adaptors
- 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
- CARB Test Procedure TP-201.1A - "Determination of Efficiency of Phase I Vapor Recovery Systems of Dispensing Facilities with Assist Processors"
- California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1E, Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves
- California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1C, Leak Rate of Drop Tube/Drain Valve Assembly
- California Environmental Protection Agency, Air Resources Board Vapor Recovery Test Procedure TP-201.1D, Leak Rate of Drop Tube Overfill Protection Devices and Spill Container Drain Valves
- 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
- Bay Area Air Quality Management District Source Test Procedure ST-30—Static Pressure Integrity Test—Underground Storage Tanks

14. **Full text of the rule follows:**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 353
STORAGE AND LOADING OF GASOLINE ~~IN STATIONARY DISPENSING TANKS~~ AT GASOLINE DISPENSING FACILITIES
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MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 353
STORAGE AND LOADING OF GASOLINE ~~IN STATIONARY DISPENSING TANKS~~ **AT GASOLINE DISPENSING FACILITIES**

SECTION 100 – GENERAL

101 PURPOSE: To limit ~~VOC (volatile organic compound)~~ emissions of volatile organic compounds (VOC) from gasoline ~~stored in stationary dispensing tanks and from gasoline delivered into such tanks.~~ during storage and loading of gasoline at gasoline dispensing facilities.

102 APPLICABILITY: This rule applies to an owner or operator who operates a ~~is applicable to gasoline stored in or transferred into any stationary dispensing tank with a capacity of more~~

~~than 250 gallons (946 l). This includes gas stations and other~~ gasoline dispensing facility, 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 storage tanks at airports, and the subsequent transfer 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 **Vapor Recovery System:** The Stage 1 Vapor Recovery System provisions of Section 305 of this Rule shall not apply to the following stationary gasoline dispensing tanks:

a. Non-Resale Gasoline Dispensing Operations: Any stationary gasoline dispensing facility receiving less than 120,000 gallons of gasoline in any 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. However, any operation shall become subject to the provisions of Section 305 of this rule by exceeding the 120,000 gallon threshold, and shall remain subject to such provisions even if annual emissions later fall below this threshold.

b. Stationary Gasoline Dispensing Tanks of 1000 Gallons 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. 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 6 inches of the tank bottom.

103.6 **Section 304 Exemption:** The owner or operator of a gasoline dispensing facility that is unattended or when there is only one owner or operator under control of the gasoline dispensing facility present, the owner or operator of the gasoline dispensing facility 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.

~~201~~ **202 CARB-CERTIFIED:** A v a p o r 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. ~~Such orders are included in CARB's publication, "Gasoline Facilities - Phase I & II", which is available as set forth in subsection 503.4.~~

203 COAXIAL VAPOR BALANCE SYSTEM: A t y p e o f v a p o r 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 t y p e o f v a p o r 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.

~~203~~ **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 ~~tube's~~ pipe's spill containment receptacle.

~~204~~ **206 GASOLINE:** Any petroleum distillate ~~or blend of petroleum distillate with other combustible liquid(s), such as alcohol, that~~, 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. ~~and has a vapor pressure between 4.0 and 14.7 psi (200–760 mm Hg.), as determined by the applicable method pursuant to subsections503.2 and 504.2. For the purposes of this rule, liquefied petroleum gas(LPG) is excluded.~~

~~205~~ ~~GASOLINE DELIVERY VESSEL: Any vehicular-mounted container such as a tanker truck, tank trailer, cargo tank or any other wheel-mounted container used to transport gasoline. This includes any hoses the vessel carries through which deliveries must be made.~~

207 **GASOLINE CARGO TANK:** Adeliverytan k 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.

~~206~~ ~~GASOLINE DISPENSINGOPERATION :Allgasoline dispensing tanks and associated equipment located on oneo r more contiguouso r adjacent properties under the control of the same person (or personsunde r commoncontrol).~~

208 **GASOLINE DISPENSINGFACILITY:** Any stationaryfacilit y 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 enginesan d equipment.

~~207~~ **209** **GASOLINE VAPORS:** Vapors, originating from liquid gasoline, that are usually found in mixture with air. Included are anydroplets of liquid gasoline or ofgasoline vapor condensate that are entrained by the vapor.

~~208~~ ~~INSTALLER: The person, as defined in Rule 100, that installs VOC control equipment at a dispensing facility.~~

~~209~~ **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)VAPO R TIGHTNESSTEST:** 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.

~~210~~ ~~OFFSET FILL LINE: Any dispensing tank'sgasoline fill line (piping and fittings) which contains one or more bends.~~

~~211~~ **212** **POPPETTED DRY BREAK:** A ~~S t a g e 1 v a pr~~ecovery device A type of vapor losscontrol equipment that opens only by connection to a mating device to ensure that no gasoline vapors escape from the stationarydispensingtan k before the vapor return line is connected.

~~208~~ **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.

~~212~~ ~~SIDE FILL PIPE: A fill pipe that enters a dispensing tank through the tank's side.~~

~~213~~ **214** **STAGE 1 VAPOR RECOVERY (VR) SYSTEM:** At a gasoline dispensing facility, the use of installed vapor recoveryequipmen t designed to reduce by at least ~~90%~~95% the VOC vapor that would otherwise be d i s p l ac e into the atmosphere from a stationary dispensing tank when gasoline is delivered into the tank by a delivery vessel. This reduction may be done either by capturing the displaced vapors within the delivery vessel, and or by processing the vaporson site with an emission processing device. ~~(such as a VOC oxidizer).~~

~~202~~ **215** **STATIONARY DISPENSINGTANK:** Anystationarytan k 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). ~~This includes aircraft.~~

216 **SUBMERGED FILL:** Anydischarge pipe or nozzle which meetsthe applicable specification as follows:

216.1 **Top-Fill or Bottom-Fill Tanks:** 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.

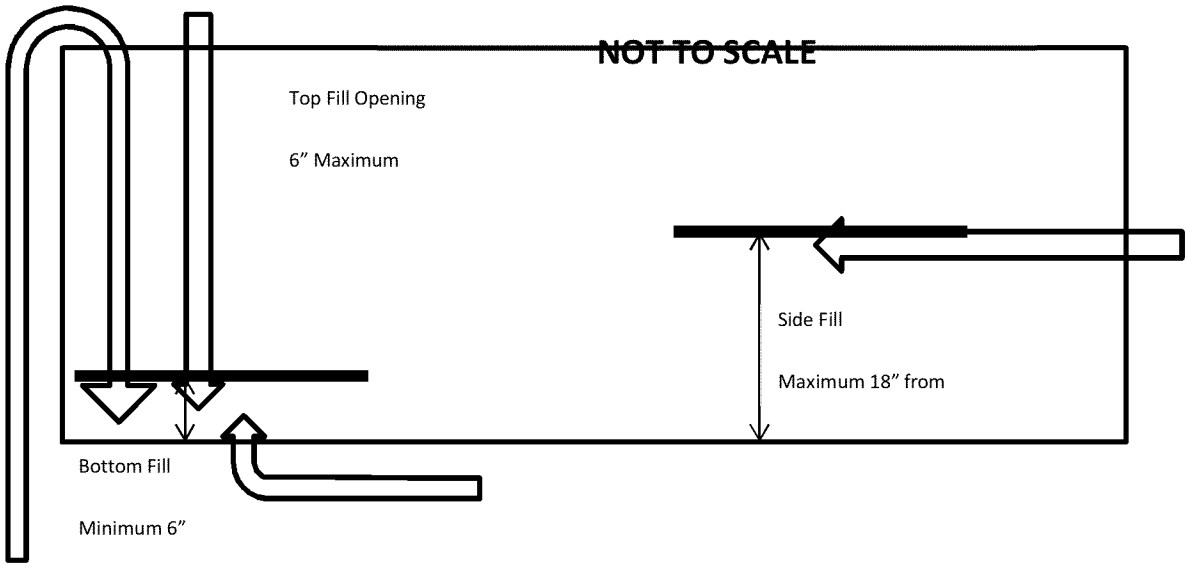
216.2 **Side-Fill:** At its highest point within the storage tank less 2,000,000 gallon capacity, the end of the discharge pipe or nozzle is totally submerged when the liquid level is 18 inches (46 cm) from the bottom of the tank.

216.3 **API Standard 650 Compliant:** A floating roof storage tank containing an organic liquid meets the submerged fill requirements of this Rule 351 if the discharge pipe or nozzle meets both of the following requirements:

a. Is kept completely submerged, including when the roof rests on its legs, except when the tank is being emptied completely and refilled; and

b. Is designed and installed according to the API Standard 650.

Submerged Fill Diagram



214 **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.

215 ~~TOP FILL OR VERTICALFILL PIPE: A fill pipe that enters a dispensing tank through its top.~~

216 **218** **VAPOR LOSS CONTROL** ~~DEVICE~~ **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 dispensingoperation.

217 **219** **VAPOR TIGHT:** ~~A condition in which an organic vapor analyzer (OVA) or a combustible gas detector (CGD) at a potential VOC leak source shows either less than 10,000 ppm when calibrated with methane, or less than 1/5 of the lower explosive limit, when prepared according to the manufacturer and used according to subsection 504.3 of this rule.~~ 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 LEL (lower explosive limit) subsequent to calibration with a gasspecifie d by the manufacturer and is used according to the manufacturer's instructions.

~~SECTION 300 – STANDARDS- VAPOR LOSS CONTROL MEASURES REQUIRED: No person shall transfer or permit the transfer of gasoline from any delivery vessel into any stationary dispensing tank located above or below ground with a capacity of more than 250 gallons (946 l) unless the following conditions are met:~~

~~301 BASIC TANK INTEGRITY: No vapor or liquid escapes are allowed through a dispensing tank's outer surfaces, nor from any of the joints where the tank is connected to pipe(s), wires, or other system.~~

~~301.1 VOC Emission Standard:~~

~~a. Gasoline delivery operations shall be vapor-tight, as defined in Section 218, except for tanks exempted by Section 305 from Stage 1 vapor recovery requirements.~~

~~b. Tanks and their fittings shall be vapor-tight except for the outlet of a pressure/vacuum relief valve on a dispensing tank's vent pipe. Specifically, this means that at a probe tip distance of 1 inch (2.5 cm) from a surface, no vapor escape shall exceed 1/5 of the lower explosive limit. This applies to tanks containing gasoline regardless of whether they are currently being filled, and to caps and other tank fittings.~~

~~301.2 Leakage Limits- Liquid Leaks and Spills:~~

~~a. Gasoline storage and receiving operations shall be leak-free. Specifically, no liquid gasoline escape of more than 3 drops per minute is allowed. This includes leaks through the walls of piping, fittings, fill hose(s), and vapor hose(s).~~

~~b. There shall be no excess gasoline drainage from the end of a fill hose or a vapor hose. Specifically, not more than 2 teaspoonsful of gasoline shall be lost in the course of a connect or disconnect process.~~

301.3 Spill Containment Equipment: The entire spill containment system including gaskets shall be kept vapor-tight.

a. The Spill Containment Receptacle:

(1) The outer surface of the spill containment receptacle shall have no holes or cracks and shall allow no vapors to pass from the dispensing tank through it to the atmosphere.

(2) Spill containment receptacles shall be kept clean and free of foreign material at all times.

(3) Spill containment receptacles shall be inspected at least weekly. Records of inspection and cleaning shall be kept according to subsection 502.2.

b. If the spill containment is equipped with a passageway to allow material trapped by the containment system to flow into the interior of the dispensing tank:

(1) The passageway shall be kept vapor-tight at all times, except during the short period when a person opens the passageway to immediately drain material trapped by the containment system into the tank.

(2) The bottom of the receptacle shall be designed and kept such that no puddles of gasoline are left after draining through the passageway has ceased.

c. The dispensing tank owner/operator is responsible for assuring that before a delivery vessel leaves the premises after a delivery:

(1) Any gasoline in a dispensing tank's spill containment receptacle has been removed.

(2) Any gasoline that a person has taken out of a spill receptacle, as a free liquid or as absorbed into/onto other material removed from the receptacle, shall be contained in such a way that VOC emission is prevented; disposal in conformance with applicable hazardous waste rules is sufficient to meet this requirement.

(3) Any plunger/stopper assembly is unimpeded and sealing correctly.

d. Criteria Of Violation/Exceedance for Spill Containment Receptacles: A reading on a CGD or OVA exceeding 1/5 LEL (10,000 ppm as methane) is an exceedance. The procedure for performing a determination is set forth in subsection 504.3.

302 FILL PIPE REQUIREMENTS:

302.1 Each fill line into a stationary dispensing tank shall be equipped with a permanent submerged fill pipe that has a discharge opening which is completely submerged when the liquid level is 6 inches above the tank bottom.

a. Threads, gaskets, and mating surfaces of the fill pipe assembly shall be designed and maintained tight. There shall be no liquid or vapor leakage at the joints of the assembly.

b. An owner/operator is responsible to assure that external fittings of a fill pipe assembly shall be inspected weekly to assure that cap, gasket, and piping are intact and are not loose.

(1) A record of the inspection shall be made according to subsection 502.2.

(2) An owner/operator shall act to prevent driver/deliverers from connecting the delivery hose coupling to a fill pipe coupling with so much twisting force that the fill pipe assembly is loosened. One method of complying is to have a CARB certified swivel coupling as part of the fill pipe assembly (reference subsection 503.4 for CARB).

302.2 Fill Pipe Caps:

a. The cap shall have a securely attached, intact gasket.

b. The cap and its gasket shall always function properly, latch completely so that it cannot then be easily twisted by hand, and have no structural defects.

c. The cap of a gasoline fill pipe shall always be fastened securely on the fill pipe except immediately before, during, and immediately after:

(1) "Sticking" the tank to measure gasoline depth.

(2) Delivering gasoline into the tank.

(3) Doing testing, maintenance or inspection on the gasoline/vapor system.

d. Do not unfasten or remove a fill pipe cap unless every other fill pipe is either securely capped or connected to a delivery hose, except as otherwise needed for testing, maintenance, or inspection.

302.3 Restrictions on Multiple Fill Pipes:

a. A tank installed after December 31, 1998, shall not be equipped with more than one fill pipe unless more than one fill pipe is specifically allowed in the Air Pollution Permit and there is a 2-point system having a properly installed vapor return pipe close to each fill pipe.

b. Restriction on Concurrent Delivery: An owner/operator of a dispensing tank fitted with more than 1 fill pipe shall prevent concurrent delivery of gasoline by a gasoline delivery vessel to more than 1 fill pipe of the tank by locking additional fill pipes shut or by using other permanent means, unless:

(1) Concurrent delivery is specifically allowed in the facility's Air Pollution Permit; and

(2) All fill pipes in use are part of a 2-point vapor recovery system; and

(3) Before making a concurrent delivery through a tank's second fill pipe, an additional vapor return hose from the delivery vessel must first be attached to the vapor return line associated with the second fill pipe.

302.4 Fill Pipe Obstructions:

a. Any type of screen and/or other obstructions in fill pipe assemblies shall be permanently removed by November 1, 1999, unless it is specifically allowed by an Air Pollution Permit or is CARB-certified, as referenced in subsection 503.4.

b. A screen or other obstruction, allowed by Air Pollution Permit or CARB, shall be temporarily removed by the owner/operator of a dispensing tank prior to inspection by the Control Officer to allow measurements pursuant to this rule.

302.5 Overfill Protection Equipment: Overfill prevention equipment shall be 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.

303 VAPOR RECOVERY SYSTEM:

303.1 Gasoline vapors displaced from a dispensing tank by gasoline being delivered shall be handled by a Stage Vapor Recovery System, unless the tank is exempted by Section 305.

303.2 Stage 1 Vapor Recovery System Configuration (Reference subsection 503.4 for identification of CARB-certified components):

a. Replacement: After June 16, 1999, no part of a vapor recovery system for which there is a CARB specification shall be replaced with anything but CARB-certified components.

b. Vapor Valves:

(1) All vapor return lines from dispensing tanks shall be equipped with CARB-certified, spring-loaded, vapor-tight, poppetted dry break valves.

(2) Vapor valves shall be inspected weekly to determine if closure is complete and gaskets are intact; a record shall be made pursuant to subsection 502.2.

c. Above Ground Systems: After June 16, 1999, an above ground dispensing tank shall have CARB-certified fittings wherever CARB so specifies.

d. New Systems: Each new gasoline tank installation shall use CARB-certified fittings exclusively wherever CARB so specifies, and:

(1) Shall have its own separate, functioning 2-point vapor return line;

(2) Is allowed to have a combination vapor recovery system that in addition to having a separate 2-point Stage 1 vapor return line, also has stage 1 vapor piping/fittings linking it to one or more (other) gasoline dispensing tanks.

e. New Coaxial Prohibited:

(1) No coaxial fill pipes shall be installed after June 16, 1999, in new installations; and

(2) No coaxial fill pipes shall be reinstalled after June 16, 1999, in major modifications in which the top of the tank is exposed and the vapor port bung is pre-configured to accept vapor recovery piping.

304 EQUIPMENT MAINTENANCE AND USE REQUIRED: All vapor loss control equipment shall be installed as required, operated as recommended by the manufacturer, and maintained leak-free, vapor-tight and in good working order.

304.1 Both the owner/operator of a dispensing tank and the driver/operator of a delivery vessel delivering gasoline to the fuel dispensing tank equipped with vapor recovery shall have responsibility to assure that vapor recovery equipment (if required by this

~~rule) is properly connected and in use at all times while gasoline is actively being dropped/delivered.~~

~~304.2 The owner/operator of a fuel dispensing tank not exempted by Section 305 shall refuse delivery of gasoline from a delivery vessel which does not bear a current pressure test certification decal issued by the Control Officer. This provision does not apply during times when the facility is unattended or there is only one person under control of the dispensing facility present.~~

~~304.3 Coaxial Systems: Both spring-loaded and fixed coaxial fill tubes shall be maintained according to the standards of their manufacturer(s) and be operated so that there is no obstruction of vapor passage from the tank to the delivery vessel.~~

~~305 EXEMPTIONS:~~

~~305.1 Dispensing Tanks for Farm Operations: Any stationary gasoline dispensing tank used exclusively for the fueling of implements of normal farm operations is exempt from this rule, except for cap, spills, and liquid leak-age provisions in Section 301.~~

~~305.2 The Vapor Recovery Provisions of Section 303 of this Rule Shall Not Apply to the Following Stationary Gasoline Dispensing Tanks:~~

~~a. Non-Resale Dispensing Operations From Non-Farm Tanks: Any stationary gasoline dispensing operation receiving less than 120,000 gallons of gasoline in any 12 consecutive calendar months, dispensing no resold gasoline, and having each gasoline dispensing tank equipped with a permanent submerged fill pipe pursuant to subsection 302.1, is exempt from Section 303. However, any operation shall become subject to the provisions of Section 303 of this rule by exceeding the 120,000 gallon threshold or not abiding by the restrictions, and shall remain subject to such provisions even if annual emissions later fall below this threshold.~~

~~b. Dispensing Tanks Of 1000 Gallons Or Less: Any stationary 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. 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 6 inches of the tank bottom.~~

~~c. Dispensing Tanks with Offset Fill Lines: Any stationary dispensing tank installed prior to October 2, 1978, where the fill line between the fill connection and tank is offset.~~

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 aboveground or underground storage tank, any type of vapor recovery system or any of its components unless the tank, system and components meet the following:

a. **Replacement Components for a Vapor Recovery System:** After June 16, 1999, a vapor recovery 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 return lines from dispensing tanks shall be equipped with CARB-certified, spring-loaded, vapor-tight, poppetted dry break valves.

c. After [Date of Rule Adoption], each new or rebuilt installed component shall be clearly identified with a permanent identification affixed by the certified manufacturer or rebuilder.

301.2 A licensed Vapor Recovery Registered Service Representative (RSR) in the State of Arizona shall install an aboveground or underground storage tank or vapor recovery system components.

301.3 Coaxial Vapor Balance System Prohibition: After June 16, 1999, an owner or operator shall not:

a. Install a coaxial fill pipe in a new installation; or

b. Reinstall a coaxial fill pipe during any changes to the 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 dispensing tank shall verify that vapor recovery equipment (if required by this rule) is properly connected and in use at all times while gasoline is actively being loaded. If the gasoline dispensing facility is unattended or there is only one owner or operator under control of the gasoline dispensing facility on-site, the owner or operator of the cargo tank is responsible for the proper connection and use of the vapor recovery equipment (if required by this rule) while gasoline is being actively loaded.

301.5 An owner or operator shall load, allow the loading, or provide equipment for the loading of gasoline from any cargo tank identified with a current Maricopa County Pressure 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 storage tank located above or below ground by 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 open 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):** A UST must meet all of the following conditions unless exempt from the vapor recovery system requirements per Section 103.4 of this rule:

a. The UST is equipped and maintained according to Section 301 of this rule;

b. For an existing GDF, maintain a dual-point vapor recovery system OR a coaxial vapor balance system. For new installations or modifications to an existing GDF after June 16, 1999, install and maintain a dual-point vapor recovery system with separate fill and vapor connection points;

c. A pressure vacuum vent is installed and maintained per manufacturer specifications;

d. The vapor recovery 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 gasketted vapor tight cap;

g. After [DATE OF THIS RULE + 30 DAYS] each poppetted dry break is equipped with vapor tight seal and gasketted vapor tight cap;

h. Each gasketed vapor tight cap is maintained in a closed position except when the fill pipe or poppetted 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 vapor recovery 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 underground stationary storage tank. 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 [Date of Rule Adoption +30 Days], an above ground storage tank (AST) with a capacity greater 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 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 [Date of Rule Adoption], 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. After [Date of Rule Adoption], a new 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 overfill 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 gasoline dispensing facility shall verify the 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 return hose.

305 **CONTROL OF VOC VAPORS:**

305.1 Gasoline vapors displaced from a stationary dispensing tank by gasoline being loaded shall be handled by a Stage 1 Vapor Recovery System, unless the tank is exempted by Section 103 of this rule.

305.2 **Stage 1 Vapor-Recovery System Configuration:**

a. Replacement: After June 16, 1999, no part of a vapor recovery system for which there is a CARB specification shall be replaced with anything but CARB-certified components.

b. Vapor Valves:

(1) All vapor return lines from a stationary dispensing tank shall be equipped with CARB-certified, spring-loaded, vapor-tight, poppetted dry break valves.

(2) Vapor valves shall be inspected weekly to determine if closure is complete and gaskets are intact; a record shall be made pursuant to Section 502 of this rule.

c. Above Ground Systems: After June 16, 1999, an above ground dispensing tank shall have CARB-certified fittings wherever CARB so specifies.

d. New Systems: Each new gasoline tank installation 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 return line, also has vapor piping/fittings linking it to one or more (other) stationary gasoline dispensing tanks.

e. **New Coaxial Prohibited:**

(1) No coaxial fill pipes shall be installed in new installations; and

(2) No coaxial fill pipes shall be reinstalled in major modifications in which the top of the tank is exposed and the vapor port bung is pre-configured to accept vapor recovery piping.

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 tank to the delivery vessel.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

~~401 TANKS THAT LOST THEIR EXEMPTION: Tanks that were formerly exempt from a provision prior to June 16, 1999, shall come into compliance by December 1, 1999.~~

401 INSPECTIONS: The owner or operator of a gasoline dispensing facility shall conduct inspections.

The inspection shall include, but is not limited to all of the following:

a. The spill containment receptacle shall be maintained:
(1) Free of cracks, rust and defects;
(2) Free of foreign material; and
(3) Empty of liquid, including gasoline.
(4) The drain valve, if install, shall properly seal.

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 poppetted dry break shall be:
(1) Equipped with a vapor tight seal;
(2) Covered with a gasketed cap that fits securely onto the poppetted dry break.

The inspections shall be conducted:

a. At least once per calendar week; or
b. If the gasoline dispensing facilities 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 ~~applicant~~ owner or operator. ~~Persons~~ 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: ~~a.~~ It is the responsibility of the ~~installer of vapor control equipment~~ owner or operator, ~~when so required by the Control Officer,~~ to provide proof, when requested by the Control Officer, that a vapor recovery system or its modifications meet the requirements of this Rule 353.

~~b. If the owner/operator or the equipment supplier voluntarily provides such proof, the Control Officer has the option to waive the subsection 402.2a requirement that the installer provide this proof.~~

403 CARB DECERTIFICATION: ~~A person~~ An owner or operator shall not install or reinstall a component related to vapor recovery that has been decertified by CARB. ~~in "Gasoline Facilities - Phase I & II" publication, referenced in subsection 503.4.~~

404 OTHER AGENCIES' REQUIREMENTS: Compliance with this rule does not relieve or otherwise affect ~~a person's~~ 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 Weights and Measures, local fire department codes, and local zoning ordinances.

SECTION 500 – MONITORING AND RECORDS:

501 MONITORING FOR LEAKS

Combustible Gas Detector or Organic Vapor Analyzer - Test Procedure: During loading of gasoline into storage tanks, the peripheries of all potential sources of leakage at the loading facility are checked with a combustible gas detector or organic vapor analyzer (OVA) as follows:

a. **Calibration:** Within four hours prior to monitoring, the CGD or OVA shall be suitably calibrated in a manner and with the gas specified by the manufacturer for 20 percent LEL response, or calibrated with methane for a 10,000 ppm response.

b. **Probe Distance:** The probe inlet shall be one inch (2.5 cm) or less from the potential leak source when searching for leaks. The probe inlet shall be one 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 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 a potential or actual 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 a 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 shall be valid only when wind speed in the space being monitored is 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: An owner or operator 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.

~~502~~ **502** **COMPLIANCE INSPECTIONS:** Any ~~dispensing tank~~ gasoline dispensing facility required by this rule to be equipped with ~~vapor loss control devices~~ 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 +1/2 lb psig.

~~502~~ **503** **GASOLINE DISPENSING FACILITY RECORDKEEPING:** The owner or operator of each gasoline dispensing facility in Maricopa County shall maintain records as follows:

503.1 The total amount of gasoline received each month shall be recorded by the end of the following month.

503.2 The owner or operator of a gasoline dispensing facility shall ~~cause weekly records of fill tube, vapor valve and spill containment inspection to be kept. The findings of such weekly inspections shall be permanently entered in a record or log book by the end of Saturday of the following week.~~ 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.

503.3 These records and any reports or supporting information required by this rule or by the Control Officer shall be retained for at least 5 years.

503.4 Records of the past 12 months shall be in a readily accessible location and must be made available to the Control Officer ~~without delay~~ within 24 hours upon verbal or written request.

~~503~~ **504** **COMPLIANCE DETERMINATION:** The test methods referenced in Section ~~503~~ 505 of this rule, shall be used in the ways given in the subsections that immediately follow. 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. For routine information collection, the Control Officer may accept a

manufacturer's data sheet (MSDS), data certified by an officer of the supplying company, or test data for the product of inquiry.

504.1 Control efficiency of vapor ~~recovery systems~~ loss control equipment and vapor collection/ processing systems shall be determined according to EPA Method 2A and either EPA Method 25A or 25B ~~(Section 504 and subsection 504.1)~~, or by CARB- approved test methods ~~(Section 504 and subsection 504.4)~~. EPA Method 2B shall be used for vapor incineration devices.

504.2 Vapor pressure of gasoline ~~(reference Section 204)~~ shall be determined using ~~American Society for Testing and Materials (ASTM) Method D323-94~~ ASTM D323-15a Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method or ASTM ~~Method D4953-93~~ D4953-15, Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method. ASTM ~~Method D323-94~~ D323-15a shall be used for gasoline either containing no oxygenates or MTBE (methyl tertiary butyl ether) as the sole oxygenate. ~~Method D4953-~~93 ASTM 4953-15 shall be used for oxygenated gasoline.

504.3 Vapor Leaks:

- **a.** If a determination of liquid leak tight status is to be made on Stage 1 VR system or spill containment equipment at a gasoline dispensing facility or on a delivery vessel at the station, ~~the method in subsection 504.3~~ at least one of the test method's listed in Section 501 of this rule shall be used.
- **b.** ~~Subsection 504.3~~ Section 501.1 of this rule probe distance and movement parameters not with-standing, 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 5 seconds, and the probe is either consistently further than 1 inch from the source and/or the probe is consistently being moved faster than 4 cm per second.
- **c.** The Control Officer may count it as a failure to perform weekly inspections pursuant to ~~subsection 301.3~~ 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 10 days.

~~**503.4** The CARB publication, "Gasoline Facilities - Phase I & II", pursuant to sections 41954 through 41962 of the California Health and Safety Code, is adopted by reference, as it exists on June 16, 1999. This publication is available for reference at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, AZ, 85004. This publication is available for purchase at the (California) Air Resources Board, PO Box 2815, 2020 L Street, Sacramento, CA, 95812-2815; (916) 323-0255 or (916) 322-2886.~~

~~504~~ **505** **TEST METHODS:** The EPA test methods as they exist in the Code of Federal Regulations (CFR) ~~(July 1, 1998 Date of rule adoption)~~, as listed below, are adopted by reference. The CARB test methods as they exist in Stationary Source Test Methods, Volume 2, on April 8, 1999, as listed in ~~subsection 504.4~~ Section 505.3 of this rule, 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 504 are available at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, AZ, 85004.

505.1 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"). ~~Both of the foregoing methods are in~~ 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
- ~~**b.**~~ **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 21to monitor for equipment volatile organic compound leaks.

505.2 ~~Gasoline Vapor Pressure:~~ **ASTM Standards:**

a. ~~American Society for Testing and Materials (ASTM) Method D323-94 (1994)~~ ASTM D323-15a "Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).

b. ~~American Society for Testing and Materials (ASTM) Method D4953-93 (1993)~~ ASTM D4953-15 "Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method)

~~Leak Detection Test Method:~~

a. ~~Calibration: Within four hours prior to monitoring, the CGD or OVA shall be suitably calibrated in a manner and with the gas specified by the manufacturer for 20 percent LEL response, or calibrated with methane for a 10,000 ppm response.~~

b. ~~Probe Distance: The probe inlet shall be one inch (2.5 cm) or less from the potential leak source when searching for leaks. The probe inlet shall be one 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 inch (2.5 cm) of an actual or potential leak source, the closest practicable probe distance greater than 1 inch 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 a potential or actual 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 a leak, such that the central axis of the probe tube inlet shall be positioned coaxially with the path of the most concentrated vapors.~~

e. ~~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.~~

505.3 **CARB Certification and Test Procedures for Gasoline Vapor Recovery Systems:**

a. ~~CARB Test Method CP-201, "Certification Procedure for Vapor Recovery Systems of Dispensing Facilities".~~

b. ~~CARB Test Procedure TP-201.1 "Determination of Efficiency of Phase I Vapor Recovery Systems of Dispensing Facilities without Assist Processors".~~

c. ~~CARB Test Procedure TP-201.1A – "Determination of Efficiency of Phase I Vapor Recovery Systems of Dispensing Facilities with Assist Processors".~~

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 Overfill 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.

505.4 **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.

Maricopa County
Air Quality Department

State Implementation Plan Revision For The Maricopa County Air Quality Department Ozone Rules Contained In The Arizona SIP December 5, 2016

APPENDIX 6: CLEAN COPY OF EACH RULE

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MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 322
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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 equipment at electric utility stationary gas turbines, electric utility steam generating units or 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 heat input of equal to or greater than 100 million (MM) Btu/hour (29 megawatts (MW)).

102.2 Each electric utility stationary gas turbine with a heat input at peak load equal to or greater than 10 MMBtu/hour (2.9 MW) 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 equipment.

104 PARTIAL EXEMPTIONS:

104.1 Stationary gas turbines that meet any of the criteria listed below are exempt from Sections 301.1, 301.2, 306, 307, 308.4 and 501.4 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 Any equipment listed in Section 102 of this rule that is normally fired with natural gas, as allowed by a permit issued by the Control Officer for that source, is exempt from Sections 301.1, 301.2, 306, 307, 308.4, 400 and 501.4 of this rule while firing emergency fuel.

104.3 Any equipment listed in Section 102 of this rule that only fires emergency fuel for 36 cumulative hours per year or less, per unit for testing, reliability, training, and maintenance purposes as allowed by a permit issued by the Control Officer for that source, is exempt from Sections 301.1, 301.2, 306, 307, 308.4, and 400 of this rule.

104.4 Any equipment listed in Section 102 of this rule that operates at or below 10 percent calendar year annual capacity factor is exempt from Sections 306, 307, 308.4 and 400 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 **ANNUAL CAPACITY FACTOR:** The ratio between the actual heat input to a boiler or process heater from the fuels burned during a calendar year and the potential heat input to the boiler or process heater had it been operated for 8,760 hours during a year at the maximum steady state design heat input capacity or the ratio between the actual electrical output of a machine or equipment during a calendar year and the potential electrical output of a machine or equipment had it been operated for 8,760 hours during a year at full nameplate capacity.

202 **COGENERATION STEAM GENERATING UNIT:** A steam or hot water generating unit that simultaneously produces both electrical (or mechanical) and 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 GAS TURBINE:** A type of stationary gas turbine wherein heat from the turbine exhaust is recovered by a steam generating unit to make steam for use in a steam-electric turbine.

204 **CONTINUOUS EMISSION MONITORING SYSTEM (CEMS):** The total equipment required to sample and analyze emissions or process parameters such as opacity, nitrogen oxide, and oxygen or carbon dioxide, and to provide a permanent data record.

205 **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.

206 **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 changes, and progress reports.

207 **DISTILLATE OIL:** A petroleum fraction of fuel oil produced by distillation that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-01, "Standard Specification for Fuel Oils."

208 **DRIFT:** Water droplets, bubbles, and particulate matter that escape from cooling tower stacks.

209 **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.

210 **DRIFT RATE:** Percentage (%) of circulating water flow rate that passes through a drift eliminator on a cooling tower.

211 **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. Both simple and combined cycle gas turbines are types of electric utility stationary gas turbines.

212 **ELECTRIC UTILITY STEAM GENERATING UNIT:** Any steam electric generating unit that uses fossil fuel 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.

213 **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.

214 **EMERGENCY STANDBY UNIT:** A stationary gas turbine that is limited by permit condition to be operated only as a mechanical or electrical power source for a facility when the primary power source for a facility has been rendered inoperable due to failure beyond the reasonable control of the operator, except due to power interruption pursuant to an interruptible power supply agreement. Electricity generated by such a unit cannot be sold.

215 **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.

216 **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.

217 **FUEL SWITCHING STARTUP PROCESS:** The act of changing from one type of fuel to a different type of fuel.

218 **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.

219 **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.

220 **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.

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 **PARTICULATE MATTER EMISSIONS:** Any and all particulate matter emitted to the ambient air as measured by applicable state and federal test methods.

225 **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).

226 **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.

227 **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.

228 **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.

229 **RESIDUAL OIL:** The heavier oils that remain after the distillate oils and lighter hydrocarbons are distilled off in refinery operations. This includes crude oil or fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05 % by weight, and all fuel oil numbers 4, 5, and 6, as defined by the American Society of Testing and Materials in ASTM D396-01, "Standard Specifications for Fuel Oils."

230 **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, or that does not recover heat from the gas turbine exhaust gases to heat water or generate steam.

231 **STATIONARY GAS TURBINE:** Any simple cycle gas turbine, regenerative gas turbine or any gas turbine portion of a combined cycle gas turbine that is not self-propelled or that is attached to a foundation.

232 **STEADY STATE:** A safe, stable megawatt load at which a unit with equipment in normal operating conditions is capable of being held for an extended period of time, without creating an unsafe or unstable operating condition.

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) DAY ROLLING AVERAGE:** An arithmetic mean or average of all hourly emission rates for 30 successive combustion operating days and calculated by a CEMS at the conclusion of each day for the previous 30 operating days.

235 **THREE (3) HOUR ROLLING AVERAGE:** An arithmetic mean or average of the most recent three one (1) hour tests, or an arithmetic mean or average over a period of three hours which is newly calculated with each hourly measurement.

236 **TOTAL DISSOLVED SOLIDS (TDS):** The amount of concentrated 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.

237 **ULTRA LOW SULFUR DIESEL:** Fuel oil containing less than or equal to 0.0015 % sulfur by weight.

238 **UNCOMBINED WATER:** Condensed water containing no more than analytical trace amounts of other chemical elements or compounds.

239 **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 LIMITATIONS – PARTICULATE MATTER:

301.1 Fuel Type: An owner or operator of any combustion equipment listed in Section 102 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 during steady state operations, demonstrated and documented through performance testing of this alternate fuel using Test Method 5. This usage of different fuels other than natural gas shall be approved by the Control Officer prior to usage.

301.2 Particulate Matter Testing: A backhalf analysis shall be performed, using Reference Method 202 referenced in Section 504.6 of this rule, each time a compliance test for particulate matter emissions to meet the standard in Section 301.1 of this rule is performed using Test Method 5.

302 **GOOD COMBUSTION PRACTICES FOR TURBINES:** During steady state operations, an owner or operator of any stationary gas turbine listed in Section 102.2 of this rule, regardless of fuel type, shall use operational practices recommended by the manufacturer and parametric monitoring to ensure good combustion control as listed below. One of the following procedures may be used. For the purposes of this rule, if a CEMS or another approved monitoring method is used, then the equipment would be exempt from the requirements of Section 302 of this rule.

302.1 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 across the burners to demonstrate good combustion practices shall be measured from at least one minute data point during a complete steady state operating hour. If a valid maximum 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; or

302.2 If the manufacturer recommends that the maximum numerical temperature differential to ensure good combustion is a temperature that is greater than 100°F, then proof of this maximum alternate temperature shall be submitted to the Control Officer. The procedure to measure the maximum temperature differential listed in Section 302.1 of this rule shall then be followed using this alternate recommended maximum temperature differential after approval by the Control Officer.

302.3 If the frequency of failure to meet the proper temperature differential of 100°F or to meet the alternate temperature differential recommended by the manufacturer reflects a pattern that the turbine is not being operated in a manner consistent with good combustion practices, then the Control Officer may require the owner or operator to submit a Corrective Action Plan (CAP).

303 COOLING TOWERS: An owner or operator of a cooling tower associated with applicable units listed in Section 102 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 The concentration of Total Dissolved Solids (TDS) multiplied by the percentage of drift rate shall not exceed the maximum numerical limit of 20.

303.3 Visually inspect the drift eliminator on a monthly basis only if the drift eliminator can be viewed safely and does not require an owner or operator to walk into the tower. If the drift eliminator cannot be safely inspected monthly then Section 303.4 of this rule shall apply:

303.4 Visually inspect the drift eliminator for integrity during a regularly scheduled outage when the cooling tower is not operating, if it cannot be inspected on a monthly basis. This visual inspection shall be no less than once per year.

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, 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 for up to one hour during the fuel switching startup process; however, opacity shall not exceed 40% for any six (6) minute averaging period in this one hour period, 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. 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 applicable equipment listed in Section 102 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 only ultra low sulfur diesel. An owner or operator using 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.

306 LIMITATIONS – NITROGEN OXIDES (NO_X): An owner or operator of any applicable equipment listed in Section 102.1 and 102.2 of this rule shall not cause to be discharged into the atmosphere nitrogen oxides in excess of the following limits:

306.1 42 ppmdv, calculated as nitrogen dioxide when burning gaseous fossil fuel. During steady state operations, this test result using EPA Reference Method(s) 7 or other EPA-approved test method designated by the Control Officer shall be based upon the arithmetic mean of the results of three test

runs. Each test run shall have a minimum sample time of one hour. If CEMS is used for the compliance demonstration, the compliance demonstration shall be based upon a 30-day rolling average. Any source for which the owner or operator submits to the department a case-by-case reasonably available control technology analysis that is or will be incorporated in a permit issued by the Control Officer for that source, is exempt from Sections 306, 308.4, and 400 of this rule.

306.2 65 ppmdv calculated as nitrogen dioxide when burning liquid fossil fuel. During steady state operations, this test result using EPA Reference Method(s) 7 or other EPA-approved test method designated by the Control Officer, shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour. If a CEMS is used for the compliance demonstration, the compliance demonstration shall be based upon a 30-day rolling average. Any source for which the owner or operator submits to the department a case-by-case reasonably available control technology analysis that is or will be incorporated in a permit issued by the Control Officer for that source, is exempt from Sections 306, 308.4, and 400 of this rule.

306.3 The nitrogen oxides concentration shall be measured dry and corrected to 3% oxygen for electric utility steam generating units and cogeneration steam generating units. The nitrogen oxides concentration shall be measured dry and corrected to 15% oxygen for stationary gas turbines and for combined cycle gas turbines, during steady state operations.

307 LIMITATIONS - CARBON MONOXIDE: An owner or operator of any equipment listed in Section 102 of this rule shall not cause to be discharged into the atmosphere carbon monoxide (CO) measured in excess of 400 ppmv at any time. During steady state operations, this test result, using EPA Reference Method 10 or other EPA-approved test method designated by the Control Officer and performed during steady state compliance source testing, shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour. The CO concentration shall be measured dry and corrected to 3% oxygen for electric utility steam generating units and cogeneration steam generating units. The CO concentration shall be measured dry and corrected to 15% oxygen for stationary gas turbines and for combined cycle gas turbines, during steady state operations.

308 REQUIREMENTS FOR ECS MONITORING EQUIPMENT:

308.1 For affected operations which may exceed any of the applicable standards set forth in Section 300 of this rule, an owner or operator may comply by installing and operating an emission control system (ECS) or a combustion control system which reduces emissions to below the applicable standards in Section 300 of this rule.

308.2 An owner or operator required to use an approved ECS pursuant to this rule shall not do so without first 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 Operation and Maintenance (O&M) Plan.

308.3 Operation and Maintenance (O&M) Plan Required for ECS:

a. General Requirements: An owner or operator shall provide and maintain an O&M Plan 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 permit.

b. Approval by Control Officer: An 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. Initial Plans: An owner or operator who is required to have an O&M Plan pursuant to this rule shall comply with all O&M Plans that the owner or operator has submitted for approval, but

which have not yet been approved, unless notified by the Control Officer in writing. Once the initial plan has been approved in writing by the Control Officer, an owner or operator shall then comply with the approved plan.

d. Revisions to Plan: An owner or operator may revise an initial O&M plan by submitting written revisions to the Control Officer. The owner or operator shall at all times comply with the latest version of the O&M Plan submitted to the Control Officer.

e. Control Officer Modifications to Plan: After discussion with the owner or operator, the Control Officer may modify the plan in writing prior to approval of the initial O&M plan. An owner or operator shall then comply with the plan that has been modified by the Control Officer.

308.4 Emission Compliance Demonstration:

a. 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 subject to Section 306 of this rule with a heat input of greater than 250 MMBtu/hr, regardless of fuel type, shall install, calibrate, maintain, and operate a CEMS or conduct stack tests as approved by the Control Officer for measuring nitrogen oxides. Where nitrogen oxide emissions are monitored by a CEMS, then a CEMS shall also be required for the measurement of the oxygen content of the flue gases. All CEMS shall comply with the provisions in 40 CFR Part 60.

b. An owner or operator of any affected electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power listed above that requires a CEMS for nitrogen oxides that meets and is continuing to meet the requirements of 40 CFR Part 75 or Part 60 may use that CEMS to meet the requirements of Section 308.4(a) of this rule.

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.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 IN EXISTENCE AND IN COMPLIANCE: Except as set forth in Section 104.4 of this rule and the case-by-case RACT analysis of Section 306.1 of this rule, 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 November 2, 2016 and subject to the emission limits in Section 306 of this rule shall submit a Notification of Compliance within 6 months of becoming subject to Section 306 of this rule. This Notification shall indicate how compliance with the NO_X limit has been determined and if performance testing is required to demonstrate compliance. If performance testing is required to demonstrate compliance, the Notification shall include a timeline for the test. Performance test results from a past test may be used for this determination, as long as the test was conducted within 5 years before November 2, 2016. If compliance under Section 401 of this rule cannot be demonstrated, an owner or operator of any electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generation unit used to generate electric power shall comply with Section 402 of this rule.

402 IN EXISTENCE AND NON-COMPLIANT:

402.1 Except as set forth in Section 104.4 of this rule and the case-by-case RACT analysis of Section 306.1 of this rule, when air pollution control equipment is required to achieve the emission limits

in Section 306 of this rule, the owner or operator shall comply with the increments of progress in Section 402.2 of this rule and be in compliance with the emission limits by the date specified in Section 402.2 of this rule.

402.2 **Increments of Progress:** 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 subject to the emission limits in Section 306 of this rule shall comply with the following increments of progress. The Control Officer, upon the request of the owner or operator, may extend the increments of progress. The following compliance schedule does not apply to units already compliant with this rule as of November 2, 2016:

a. Within 18 months of becoming subject to the emission limits in Section 306 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 of this rule and submit to the Control Officer a complete source test report indicating compliance.

402.3 **Removal From Service:** 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 November 2, 2016 that is expected to be removed from service within 24 months of becoming subject to Section 306 of this rule shall be exempt from the emission limits in Section 306 of this rule if it complies with the following:

a. Within 6 months of becoming subject to the limits in Section 306 of this rule, submit to the Control Officer a notification of proposed removal from service.

b. Within 14 months of submitting notification under Section 402.3(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, 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. Operation of any electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power beyond 4 months of decommissioning plan and permit revision approval, shall be conducted in compliance with the emission limits in Section 306 of this rule.

403 **EMERGENCY STANDBY UNITS:** The owner or operator of any emergency standby unit in existence prior to November 2, 2016 shall by January 2, 2017, submit to the Control Officer a notification requesting an exemption from the requirements of Section 300 of this rule.

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 or his designee upon request. Records shall consist of the following information:

Equipment Listed in Section 102 of this Rule: Type of fuel used, amount of fuel used, amount of sulfur in the fuel if using liquid fuel, and the days and hours of operation.

Cooling Towers: Monthly gravimetric testing reports for TDS 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.

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.

Fuel Switching: Monthly records of fuel switching including stop and start times, monthly records of hours of operation for testing, reliability and maintenance purposes per Section 104.3 of this rule, and a yearly log total of these hours.

Continuous Emission Monitoring Systems: All CEMS measurements, results of CEMS performance evaluations, CEMS calibration checks, and adjustments and maintenance performed on these systems.

Good Combustion Practices: Measurements of the temperature differential across the burners of turbines per Section 302 of this rule, results of evaluation and of corrective action taken to reduce the temperature differential or a finding that the temperature differential returned to the range listed in Sections 302.1 or 302.2 of this rule without any action by the owner or operator. For the purposes of this rule, if a CEMS or other approved monitoring method is used, then the equipment would be exempt from the requirements of Section 302 of this rule.

Equipment Referenced in Sections 104.4, 306.1, and 306.2: Maintain records of the annual capacity factor and NO_X emissions to demonstrate compliance with Sections 104.4, 306.1, or 306.2 of this rule, 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 DETERMINATION:

Ultra Low Sulfur Diesel Verification: 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:

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

The items listed above must provide accurate sulfur content values or be based on enforceable test methods as approved by the Administrator to determine the sulfur content.

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.

Waste Derived Fuel Gas – Sulfur Verification: The owner or operator shall submit documentation of the concentration of the sulfur level 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 307-94 Determination of Sulfur in a Gaseous Matrix.

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 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 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).

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).

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 of Excess Air"), and 3C ("Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources") (40 CFR 60, Appendix A).

EPA Reference Method 4 ("Determination of Moisture Content in Stack Gases") (40 CFR 60, Appendix A).

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

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

EPA Reference Methods 7 ("Determination of Nitrogen Oxide Emissions from Stationary Sources"), 7A ("Determination of Nitrogen Oxide Emissions from Stationary Sources"), 7B ("Determination of Nitrogen Oxide Emissions from Stationary Sources - Ultraviolet Spectrometry"), 7C ("Determination of Nitrogen Oxide Emissions from Stationary Sources - Alkaline-Permanganate 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 Method") (40 CFR 60, Appendix A).

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

EPA Reference Method 10 ("Determination of Carbon Monoxide Emissions from Stationary Sources") (40 CFR 60, Appendix A).

EPA Reference Method 20 ("Determination of Nitrogen Oxides, Sulfur Dioxide and Diluent Emissions from Stationary Gas Turbines") (40 CFR 60, Appendix A).

ASTM D2622- 16, Standard Test Method for Sulfur in Petroleum Products by Wavelength Disperse X-Ray Fluorescence Spectrometry.

ASTM D2880- 15, Standard Specification for Gas Turbine Fuel Oils.

ASTM D4294- 16e1, Standard Test Method for Sulfur in Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry.

Standard Methods for the Examination of Water and Wastewater,("Dissolved Solids Dried at 180ºC, Method #2540C"), American Public Health Association, 19th edition, 1995.

ASTM D5907-13, Standard Methods for the Examination of Water and Wastewater for Filterable Matter (Total Dissolved Solids) and Nonfilterable Matter (Total Suspended Solids) in Water.

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 323
FUEL BURNING EQUIPMENT FROM INDUSTRIAL/COMMERCIAL/ INSTITUTIONAL (ICI) SOURCES

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Adopted 07/02/2003; Revised 10/17/2007; **Revised 11/02/2016**

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 equipment at industrial and/or commercial and/or institutional (ICI) sources.

102 APPLICABILITY: This rule applies to the following types of ICI combustion equipment that burns either fossil fuels or alternative fuels:

102.1 Each steam generating unit that has a maximum design rated heat input capacity from fuels combusted in the generating unit of greater than 10 million (MM) Btu/hr (2.9 Megawatts (MW)).

102.2 Each stationary gas turbine with a heat input at peak load equal to or greater than 2.9 megawatts (MW).

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 equipment; 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 hot water for comfort or for radiant heat.

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 301.1, 301.2, 304, 305, 501.1, and 501.3 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; or

d. Fired with emergency fuel that is normally fired with natural gas, or

e. Fired with emergency fuel for 36 cumulative hours per year or less, per unit for testing, reliability, training, and maintenance purposes as allowed by a permit issued by the Control Officer for that source.

104.2 All steam generating units including cogeneration units and process heaters that are used for any of the following reasons as allowed by a permit issued by the Control Officer shall be exempt from Sections 301, 304, 305, 501.1 and 501.3 of this rule:

a. Fired with an emergency fuel that is normally fired with natural gas; or

b. Firing any emergency fuel for testing, reliability, and maintenance purposes for 36 cumulative hours per year, per unit or less.

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 or methanol.

202 **COGENERATION STEAM GENERATING UNIT:** A steam or hot water generating unit that simultaneously produces both electrical (or mechanical) and thermal energy (such as heat or steam) from the same primary energy source.

203 **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.

204 **DISTILLATE OIL:** A petroleum fraction of fuel oil produced by distillation that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-01, "Standard Specification for Fuel Oils."

205 **EMERGENCY FUEL:** Fuel fired by a gas combustion unit, normally fueled by natural gas, only during circumstances of unforeseen disruption or interruption in the supply of natural gas to a unit that normally runs on natural gas. The inability to burn natural gas may be one of the following, but is not limited to, natural gas emergency, natural gas curtailment, or a breakdown of the delivery system.

206 **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.

207 **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.

208 **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.

209 **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.

210 **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.

211 **PARTICULATE MATTER EMISSIONS:** Any and all particulate matter emitted to the ambient air as measured by applicable state and federal test methods.

212 **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).

213 **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.

214 **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 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.

215 **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 combustor unit.

216 **RESIDUAL OIL:** The heavier oils that remain after the distillate oils and lighter hydrocarbons are distilled off in refinery operations. This includes crude oil or fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05% by weight, and all fuel oil numbers 4, 5 and 6, as defined by the American Society of Testing and Materials in ASTM D396-01, "Standard Specifications for Fuel Oils".

217 **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, or that does not recover heat from the gas turbine exhaust gases to heat water or generate steam.

218 **STATIONARY GAS TURBINE:** Any simple cycle gas turbine or regenerative gas turbine that is not self-propelled or that is attached to a foundation.

219 **STEADY STATE:** A safe, stable megawatt load at which a unit with equipment in normal operating conditions is capable of being held for an extended period of time, without creating an unsafe or unstable operating condition.

220 **STEAM GENERATING UNIT:** An external combustion unit or boiler fired by fossil fuel that is used to generate hot water or steam. The hot water or steam is then used as energy for driving another process or piece of equipment.

221 **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.

222 ULTRA LOW SULFUR DIESEL: Fuel oil containing less than or equal to 0.0015 % sulfur by weight.

223 UNCOMBINED WATER: Condensed water containing no more than analytical trace amounts of other chemical elements or compounds.

224 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.

225 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 as opposed to boilers, do not reach temperatures of 220°F and higher that boilers can reach, and are not manufactured to meet boiler codes.

SECTION 300 – STANDARDS

301 LIMITATIONS – PARTICULATE MATTER:

301.1 Limitation-Liquid Fuels: An owner or operator 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 lbs. per MMBtu, during steady state operations, from any combustion units listed in Sections 102.1, 102.3, and 102.4 of this rule with either a rated heat input capacity or heat input of greater than 100 MM Btu/hr.

301.2 Particulate Matter Testing: A backhalf analysis shall be performed, using Reference Method 202 referenced in Section 504.6 of this rule, each time a compliance test for particulate matter emissions to meet the standards in Section 301.1 of this rule is performed using Method 5. (The results of the Method 202 testing shall be used for emissions inventory purposes).

301.3 Good Combustion Practices for Turbines: During steady state operations, an owner or operator of a stationary gas turbine listed in Section 102.2 of this rule, regardless of fuel type or size, shall use operational practices recommended by the manufacturer and parametric monitoring that ensure good combustion control. One of the following procedures may be used:

a. 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 across the burners to demonstrate good combustion practices shall be measured from at least one minute data point during a complete steady state operating hour. If a valid maximum 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; or

b. If the manufacturer recommends that the maximum numerical temperature differential to ensure good combustion is a temperature that is greater than 100°F, then proof of this maximum alternate temperature shall be submitted to the Control Officer. The procedure to measure the maximum temperature differential listed above in Section 301.3(a) of this rule shall then be followed using the alternate recommended maximum temperature differential after approval by the Control Officer.

c. If a repetitive pattern of failure to meet the proper temperature differential of 100°F or to meet the alternate temperature differential recommended by the manufacturer indicates that the turbine is not being operated in a manner consistent with good combustion practices, then the Control Officer may require the owner or operator to submit a Corrective Action Plan (CAP).

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 applicable equipment listed in Section 102 of this rule that burns liquid fuel oil or a mixture or blend of fuel oil with any other fuels shall use only ultra low sulfur diesel. An owner or operator using 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:

304.1 An owner or operator of any combustion equipment listed in Section 102 of this rule, except gas turbines, with a heat input of greater than 10 MMBtu/hr to 100 MMBtu/hr shall comply either with Sections 304.1(a) or 304.1(b) of this rule. Gas turbines are subject to both Sections 304.1(a) and 304.1(b) of this rule below:

a. Establish initial optimal baseline concentrations for NO_X and CO within 90 days of the first usage of the combustion equipment utilizing the initial design burner specifications or manufacturer's recommendations to ensure good combustion practices. Tune the unit annually in accordance with good combustion practices or follow the manufacturer's recommended procedure, if applicable. 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 manufacturer's recommended procedure. If using good combustion practices, the owner or operator shall include the following at a minimum:

(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) Measure the NO_X and the CO concentration of the effluent stream after each adjustment was made with a handheld portable monitor to ensure optimal baseline concentrations are maintained.

b. Limit nitrogen oxide emissions to no more than the following amounts:

(1) 42 ppmdv calculated as nitrogen dioxide, when burning gaseous fuel. During steady state operations, this test result using EPA Reference Method(s) 7 or other EPA-approved test method designated by the Control Officer shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample run time of one hour.

(2) 65 ppmdv calculated as nitrogen dioxide, when burning liquid fuel. During steady state operations, this test result using EPA Reference Method(s) 7 or other EPA-approved test method designated by the Control Officer shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample run time of one hour.

c. For simple gas turbines, the nitrogen oxides shall be measured dry and corrected to 15% oxygen, during steady state operations. For all other combustion equipment, the nitrogen oxides shall be measured dry and corrected to 3% oxygen.

304.2 An owner or operator of any combustion equipment, listed in Section 102 of this rule, with a heat input greater than 100 MMBtu/hr, shall:

a. Tune the equipment every 6 months with good combustion practices or a manufacturer's procedure that at a minimum includes the procedures listed in Section 304.1(a) of this rule and;

b. Meet the NO_X emission limits as stated in Section 304.1(b) of this rule.

305 LIMITATIONS-CARBON MONOXIDE: An owner or operator of any equipment listed in Section 102 of this rule 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 ppmv at any time. During steady state operations, this test result, using EPA Reference Method 10 or other EPA-approved test method designated by the Control Officer, shall be based upon the arithmetic mean of the results of three test runs and shall be measured during steady state compliance source testing. Each test run shall have a minimum sample time of one hour. For simple gas turbines, the CO shall be measured dry and corrected to 15% oxygen, during steady state operations. For all other combustion equipment, the CO shall be measured dry and corrected to 3% oxygen.

306 REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND ECS MONITORING EQUIPMENT:

306.1 Emission Control System: For affected operations which may exceed any of the applicable standards set forth in Sections 300 of this rule, an owner or operator may comply by installing and operating an emission control system (ECS) or a combustion control system which reduces emissions to below the applicable standards in Section 300 of this rule.

306.2 Providing and Maintaining ECS Monitoring Devices: An owner or operator required to use an approved ECS pursuant to this rule shall not 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 Operation and Maintenance (O&M) Plan.

306.3 O&M Plan Required for ECS:

a. **General Requirements:** An owner or operator shall provide and maintain an O&M Plan for any ECS, any other emission processing equipment, and any ECS monitoring devices that are used pursuant to this rule or an air pollution permit.

b. **Approval by Control Officer:** An 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. **Initial Plans:** An owner or operator that is required to have an O&M Plan pursuant to this rule shall comply with all O&M Plans that the owner or operator has submitted for approval, but which have not yet been approved, unless notified by the Control Officer in writing. Once the initial plan has been approved in writing by the Control Officer, an owner or operator shall comply with this approved plan.

d. **Revisions to Plan:** If revisions to the initial plan have been approved by the Control Officer in writing, an owner or operator shall comply with the revisions to the initial plan. If revisions to the plan have not yet been approved by the Control Officer in writing, then an owner or operator shall comply with the most recent O&M plan on file at Maricopa County Air Quality Department.

e. **Control Officer Modifications to Plan:** After discussion with the owner or operator, the Control Officer may modify the plan in writing prior to approval of the initial O&M plan. An owner or operator shall then comply with the plan that has been modified by the Control Officer.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE

O&M Plan: Any owner or operator employing an approved ECS on the effective date of this rule shall by July 2, 2017 file an O&M Plan with the Control Officer in accordance with Section 306.3 of this rule.

Modifications to Existing ECS: Any owner or operator required to modify their ECS equipment or system by either reconstructing or adding on equipment for compliance with this rule shall by July 2, 2016 file a schedule for the modification with the Control Officer. The plan shall show how the ECS is to be used to achieve full compliance and shall specify dates for completing increments of progress. Any and all ECS used to achieve such compliance shall be in operation by November 2, 2018.

ECS Installation: An owner or operator required to install an ECS for compliance with this rule shall by July 2, 2017 file a schedule for the installation with the Control Officer. The ECS shall then be installed and in compliance by November 2, 2019.

SECTION 500 – MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING: An 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 or his designee upon request. Records shall consist of the following information:

Equipment Listed in Section 102 of this Rule: Type of fuel used, amount of fuel used, and amount of sulfur in the fuel if using liquid fuel, and the days and hours of operation.

Emergency Fuel Usage: Monthly records of type of emergency fuel used, 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 104.1 and 104.2. Yearly records of the twelve month log of hours of operation in the emergency mode.

Good Combustion Practice: Measurements of the temperature differential across the burners of turbines per Section 301.3 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 301.3(a) or 301.3(b) of this rule without any action by the owner or operator.

Tuning Procedure: Date that the procedure was performed on the particular 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 handheld monitor after each adjustment.

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 DETERMINATION:

Sulfur In Fuel Verification:

a. Ultra Low Sulfur Diesel: 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) Test results of the fuel for sulfur content

The items listed above must provide accurate sulfur content values or 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 concentration of the sulfur level 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 307-94 Determination of Sulfur in a Gaseous Matrix.

Gaseous Emissions-Source Test: Boilers with a heat input capacity of 100 MMBtu per hour or greater, must conduct all applicable performance (stack) tests on a triennial basis. Triennial performance tests must be completed no more than 37 months after the previous performance test.

Gaseous Emissions-Continuous Emission Monitoring System (CEMS): Compliance with the emission requirements specified in Sections 301 through 304 of this rule may also be determined using CEMS. Where the 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 unit is operated.

b. Cycle Time: An owner or operator of any 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 3 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. **Accuracy Testing:** Accuracy testing of CEMS shall be conducted using a relative accuracy test audit pursuant to 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 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, 1001 N. Central Avenue, Suite 125, Phoenix, AZ 85004-1942.

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).

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).

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 of Excess Air"), and 3C ("Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources") (40 CFR 60, Appendix A).

EPA Reference Method 4 ("Determination of Moisture Content in Stack Gases") (40 CFR 60, Appendix A).

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

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

EPA Reference Methods 7 ("Determination of Nitrogen Oxide Emissions from Stationary Sources"), 7A ("Determination of Nitrogen Oxide Emissions form Stationary Sources"), 7B ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Ultraviolet Spectrometry"), 7C ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline-Permanganate 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 Method"), (40 CFR 60, Appendix A).

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

EPA Reference Method 10, ("Determination of Carbon Monoxide from Stationary Sources") (40 CFR 60, Appendix A).

EPA Reference Method 20, ("Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from Stationary Gas Turbines") (40 CFR 60, Appendix A).

ASTM Method D2622-98 Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry.

ASTM Method D2880-96 Standard Specification for Gas Turbine Fuel Oils

ASTM Method D4294-02 or D4294-03 Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy- Dispersive X-ray Fluorescence Spectrometry.

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.

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

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Adopted 10/22/2003; Revised 10/17/2007; **Revised 11/02/2016**

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 spark-ignition engine or compression-ignition engine including stationary RICE used in cogeneration, with a rated brake horsepower (rated bhp) of greater than 250. This rule also applies to a combination of stationary RICE each with a rated bhp greater than 50 used at a source, whose maximum aggregate rated bhp is greater than 250.

102.2 A stationary RICE subject to this rule that is also subject to the federal standards of performance set forth in 40 CFR Part 60, Subpart IIII for compression-ignition engines or 40 CFR Part 60, Subpart JJJJ for spark-ignition engines shall comply with the most stringent requirements. Whenever more than one provision in this rule applies to such engine or whenever a provision in this rule and a provision in the federal standards apply to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

102.3 NSPS & NESHAP: In addition to this rule, a stationary RICE 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. Whenever more than one provision in this rule applies to such engine or whenever a provision in this rule and a provision in the federal standards apply to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

103 EXEMPTIONS:

103.1 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:

a. A rotary engine, including gas turbines, jet engines.

b. 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.

c. A non-emergency engine when it is operated for purposes of performance verification and testing by the owner or operator or by a manufacturer or distributor of such equipment for the purpose of performance verification and testing at the production facility.

d. A compressed gas stationary RICE used for solar testing and research programs.

e. A stationary RICE operated as an emergency engine or other equipment at a nuclear power plant that must run for safety reasons and/or operational tests to meet requirements imposed by the Nuclear Regulatory Commission.

f. A stationary RICE test stand used for evaluating engine performance.

g. A stationary RICE used for training purposes as long as the total number of hours of the operation does not exceed 100 hours per calendar year per engine.

103.2 An IC engine operated as a nonroad IC engine is exempt from all of the requirements of this rule but shall comply with Rule 300 (Visible Emissions) of these rules.

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 comply only with the provisions in Sections 301, 303, 306, 307, 400, 502.1 and 502.4 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 does not exceed 100 hours per calendar year per engine as evidenced by an installed non-resettable hour meter.

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.

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 shall comply only with the provisions in Sections 301, 303, 306, 307, 400, 502.1 and 502.4 of this rule for:

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-resettable 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-resettable hour meter.

106 **PARTIAL EXEMPTION FOR NON-EMERGENCY ENGINES SUBJECT TO 40 CFR PART 63, SUBPART ZZZZ:** A stationary RICE subject to the federal standards of performance set forth in 40 CFR Part 63, Subpart ZZZZ shall comply only with the provisions in Sections 502.1, 502.2, and 502.3 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 **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 **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.

203 **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.

204 **DIESEL ENGINE:** A type of compression-ignition engine.

205 **EMERGENCY ENGINE:** A stationary RICE whose sole function is to provide back-up power when electric power from the local utility is interrupted or when operated solely for any of the reasons listed in Section 104 of this rule. An emergency engine, for the purposes of this rule, shall not be used to supply standby power due to a voluntary reduction in power by a utility or power company, supply power for distribution or sale to the grid, or supply power at a source in order to avoid peak demand charges or high electric energy prices during on-peak price periods and shall not exceed 500 hours of operation per calendar year including the 100 hours listed in Section 104.5 of this rule.

206 **ENGINE FAMILY:** A group of stationary RICE with similar design features such as fuel type, cooling medium, method of air aspiration, combustion chamber design including cylinder bore and stroke, exhaust after treatment (if any), method of fuel admission, and method of control. These engines are also expected to have similar emission and operating characteristics throughout their useful lives.

207 **EQUIVALENT 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:

207.1 The equivalent replacement engine results in equal or lower air contaminant emissions than the original stationary RICE; and

207.2 The equivalent replacement engine meets the emission control technology standards contained in Section 304 of this rule; and

207.3 The rated bhp of the equivalent replacement engine does not exceed the rated bhp of the original stationary RICE (or sum of original stationary RICE) by more than 20 percent, for the purpose of this rule. For every percentage point increase of the rated bhp, there shall be an associated decrease in emissions of nitrogen oxides, expressed as a mass per unit time, equal to or exceeding two percentage points.

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 **LOCATION:** Any single site at a building, structure, facility or installation.

211 **NON-EMERGENCY ENGINE:** A stationary RICE that is dedicated to a process or processes for the purpose of supplying primary mechanical or electrical power.

212 **NONROAD INTERNAL COMBUSTION (IC) ENGINE:**

212.1 Equipment that meets the following requirements are nonroad IC engines:

a. 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

b. 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

c. 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.

212.2 The following are not nonroad IC engines:

a. An engine used to propel a motor vehicle, an aircraft, or equipment used solely for competition; or

b. An engine regulated by a federal New Source Performance Standard promulgated under Section 111 of the Clean Air Act; or

c. An engine otherwise included in Section 212.1(c) of this rule that remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. 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. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is 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. This paragraph does not apply to an engine after the engine is removed from the location.

213 **PART(S) PER MILLION, DRY VOLUME (PPMDV):** A unit of proportion equal to 10^{-6} that is measured on a dry basis (minus water) at 15% oxygen.

214 **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.

215 **RICH-BURN ENGINE:** A spark-ignition engine that is not a lean-burn engine.

216 **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.

217 **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.

218 **SULFUR OXIDES (SO_X):** Oxides of sulfur calculated as equivalent sulfur dioxide.

219 **ULTRA LOW SULFUR DIESEL:** Fuel oil containing less than or equal to 0.0015% sulfur by weight.

220 **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 **LIMITATIONS FOR STATIONARY RICE - FUEL**: An owner or operator of an engine that meets the criteria listed in Section 102 of this rule shall comply with either of the following:

301.1 Use any fuel that contains no more than 0.0015% sulfur by weight, alone or in combination with other fuels.

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.

302 **GOOD COMBUSTION PRACTICES / TUNING PROCEDURE FOR STATIONARY RICE:** An owner or operator of an engine that meets the criteria listed in Section 102 of this rule shall conduct preventative maintenance or tuning procedures as recommended by the engine manufacturer to ensure good combustion practices to minimize NO_X emissions. A handheld monitor may be used if so desired by the owner or operator for measurement of NO_X and CO concentrations in the effluent stream after each adjustment is made; this may assist in determining that the proper adjustment has been made to minimize NO_X and CO emissions. A handheld monitor may be used by the Control Officer to determine compliance with this section. The owner or operator shall include all of the following in the tuning procedures, if the engine is so equipped, and if such procedures are appropriate to the type of engine:

302.1 Lubricating Oil and Filter: Change once every three months or after no more than 300 hours of operation, whichever occurs last.

302.2 Inlet Air Filter: Clean once every three months or after no more than 300 hours of operation and replace every 1,000 hours of operation or every year, whichever occurs last.

302.3 Fuel Filter: Clean once every year or replace (if cartridge type) once every 1,000 hours of operation, whichever occurs last.

302.4 Check and adjust the following once every year or after no more than 1,000 hours of operation, whichever occurs last:

a. Intake and exhaust valves

b. Spark plugs (if so equipped)

c. Spark timing and dwell or fuel injection timing (if adjustable), and

d. Carburetor mixture (if adjustable).

302.5 Spark Plugs and Ignition Points: Replace after 3,000 hours of operation or every year whichever occurs last

302.6 Coolant: Change after 3,000 hours of operation or every year whichever occurs last.

302.7 Exhaust System: Check for leaks and/or restrictions after 3,000 hours of operation or every year whichever occurs last.

303 LIMITATIONS FOR STATIONARY RICE – OPACITY: An owner or operator of an engine that meets the criteria in Section 102 of this rule 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 250 RATED BHP OR GREATER: In addition to meeting the standards in Sections 301, 302 and 303 of this rule, an owner or operator of a non-emergency engine that meets the criteria in Section 102 of this rule shall comply with Sections 304.1 or 304.2 of this rule.

304.1 Engine Requirements for Non-Emergency Engines: The emissions in parts per million by dry volume (ppmdv) or grams per bhp (g/bhp) from the non-emergency engines shall comply with either Table 1 or Table 2 of this rule.

TABLE 1
COMPRESSION-IGNITION ENGINES

MANUFACTURED OR MODIFIED	RATED BHP	ENGINE REQUIREMENTS
Prior to October 22, 2003	250-399	770 ppmdv or 10 g/bhp-hr. NO_X or turbocharger with aftercooler/intercooler or 4-degree injection timing retard
Prior to October 22, 2003	400 plus	550 ppmdv or 7.2 g/bhp-hr. NO_X or turbocharger with aftercooler/intercooler or 4-degree injection timing retard
On or after October 22, 2003 but prior to July 11, 2005	>250	530 ppmdv or 6.9 g/bhp-hr. NO_X or turbocharger with aftercooler/intercooler or 4-degree injection timing retard; 1,000 ppmdv CO;0.40 g/bhp-hr PM

TABLE 2
SPARK-IGNITION ENGINES

LEAN-BURN ENGINES				
MANUFACTURED OR MODIFIED	**RATED BHP**	**OXIDES OF NITROGEN (NO_X)**	**VOLATILE ORGANIC COMPOUND (VOC)**	**CARBON MONOXIDE (CO)**
Prior to October 22, 2003	>250	280 ppmdv or 4.0 g/bhp-hr	800 ppmdv or 5.0 g/bhp-hr	4,500 ppmdv
On or after October 22, 2003 but prior to June 12, 2006	>250	110 ppmdv or 1.5 g/bhp-hr	800 ppmdv or 5.0 g/bhp-hr	4,500 ppmdv

RICH-BURN ENGINES				
MANUFACTURED OR MODIFIED	**RATED BHP**	**OXIDES OF NITROGEN (NOX)**	**VOLATILE ORGANIC COMPOUND (VOC)**	**CARBON MONOXIDE (CO)**
Prior to October 22, 2003	>250	280 ppmdv or 4.0 g/bhp-hr or three-way catalyst*	800 ppmdv or 5.0 g/bhp-hr or three-way catalyst*	4,500 ppmdv or three-way catalyst*
On or after October 22, 2003 but prior to June 12, 2006	>250	20 ppmdv or 0.30 g/bhp-hr or three-way catalyst*	800 ppmdv or 5.0 g/bhp-hr or three-way catalyst*	4,500 ppmdv or three-way catalyst*

* The three-way catalyst shall provide a minimum of 80% control efficiency for NO_X and CO for those engines fueled with natural gas, propane or gasoline. In addition, the three-way catalyst shall also provide a minimum of at least 50% control efficiency for VOC for those engines fueled by gasoline.

304.2 **Federal Standards of Performance for Non-Emergency Engines:** An owner or operator of an engine listed in Sections 304.2(a) or (b) of this rule shall comply with the federal standards of performance for compression-ignition engines set forth in 40 CFR Part 60, Subpart IIII or spark-ignition engines set forth in 40 CFR Part 60, Subpart JJJJ and in all accompanying appendices as incorporated by reference in Rule 360 (New Source Performance Standards) of these rules. Whenever more than one provision in this rule applies to such engine or whenever a provision in this rule and a provision in the federal standards apply to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

a. 40 CFR Part 60, Subpart IIII applies to all of the following non-emergency compression-ignition engines:

(1) Any stationary compression-ignition IC engine that was ordered after July 11, 2005 and manufactured after April 1, 2006.

(2) Any stationary compression-ignition IC engine that was modified or reconstructed after July 11, 2005.

b. 40 CFR Part 60, Subpart JJJJ applies to the following non-emergency spark-ignition engine:

(1) Any stationary spark-ignition engine that was ordered after June 12, 2006 and manufactured on or after:

(a) July 1, 2007 for engines with a rated bhp greater than or equal to 500 (except lean burn engines with a rated bhp greater than or equal to 500 and less than 1,350)

(b) January 1, 2008 for lean burn engines with a rated bhp greater than or equal to 500 and less than 1,350

(c) July 1, 2008 for engines with a rated bhp less than 500.

(2) Any stationary spark-ignition engine that was modified or reconstructed after June 12, 2006.

305 **EFFICIENCY ALLOWANCE:** Each emission limit expressed in Tables 1 or 2 of this rule may be multiplied by X, where X equals the engine efficiency (E) divided by a reference efficiency of 30 percent. Engine efficiency shall be determined by one of the following methods whichever is higher:

a. E = (Engine Output) X (100) ÷ (Energy Input) where Energy Input is determined by a fuel measuring device accurate to +/- 5 % and is based upon the higher heating value (HHV) of the fuel. Percent efficiency (E) shall be averaged over 15 consecutive minutes and measured at peak load for the applicable engine.

b. E = (Manufacturers Rated Efficiency [Continuous] at (LHV) X (LHV) ÷ (HHV) where LHV = the lower heating value of the fuel Engine efficiency (E) shall not be less than 30 percent; an engine with an efficiency lower than 30 percent shall be assigned an efficiency of 30 percent for the purposes of this rule.

306 EQUIVALENT REPLACEMENT ENGINE OR IDENTICAL REPLACEMENT ENGINE: An equivalent replacement engine or an identical replacement engine shall be treated as the original stationary RICE that it replaces for the purposes of compliance with this rule.

307 MODIFICATION TO A STATIONARY RICE: If a modification, including the contractual obligation to undertake and complete an order for an engine, is made to a stationary RICE, then such engine shall comply with all applicable provisions of this rule. The date of the modification shall be the trigger for when the modification is subject to the provisions of Section 304 of this rule. Whenever a provision in this rule and a provision in Section 304 of this rule apply to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

308 NON-RESETTING TOTALIZING HOUR METER: The owner or operator of a stationary RICE, subject to any provision of this rule, except for those engines being removed from service under Section 401 of this rule, shall install, operate, and maintain a non-resetting totalizing hour meter. If the non-resetting totalizing hour meter is found to be malfunctioning, operation of the engine shall cease until corrective action(s) can be implemented or the function of the meter is restored.

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 November 2, 2017. The stationary RICE that replaces such engine shall comply with all applicable provisions of this rule and shall comply with Section 304 of this rule upon installation.

402 COMPLIANCE SCHEDULE-NON-RESETTING TOTALIZING HOUR METER: The owner or operator of a stationary RICE, subject to any provision of this rule, except for those engines being removed from service under Section 401 of this rule, shall install, operate, and maintain a non-resetting totalizing hour meter on each such engine no later than November 2, 2017.

SECTION 500 - MONITORING AND RECORDS

501 COMPLIANCE DETERMINATION:

Stationary RICE: An owner or operator of a stationary RICE shall demonstrate compliance with all of the following, as applicable:

a. With Section 300 of this rule, by recordkeeping according to Section 502 of this rule. Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.

b. With Section 304.2 of this rule, by one of the following:

(1) A statement from the manufacturer that the engine meets the most stringent emissions standards found in this rule or 40 CFR Parts 89, 90, and 1039 applicable to the engine and its model year at the time of manufacture.

(2) Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.

c. With 40 CFR Part 60.4213, for a stationary RICE with a displacement of greater than or equal to 30 liters per cylinder.

Engine Family: An owner or operator of an engine family shall demonstrate compliance with all of the following, as applicable:

a. With Section 300 of this rule, by recordkeeping according to Section 502 of this rule. Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.

b. When testing an engine family at one source, the number of engines tested should be the greater of either one engine or one third of all identical engines in the group. If any of the representative engines exceed the emission limits, each engine in the group shall demonstrate compliance by emissions testing.

c. With Section 304.2 of this rule, by one of the following:

(1) A statement from the manufacturer that the engine meets the most stringent emissions standards found in this rule or 40 CFR Parts 89, 90, and 1039 applicable to the engine and its model year at the time of manufacture.

(2) Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.

d. With 40 CFR Part 60.4213, for an engine family with a displacement of greater than or equal to 30 liters per cylinder.

Ultra Low Sulfur Diesel Verification: 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:

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

The items listed above must provide accurate sulfur content values or be based on enforceable test methods as approved by the Administrator to determine the sulfur content.

Waste Derived Fuel Gas - Sulfur Verification: The owner or operator shall submit documentation of the concentration of the sulfur level 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 307-94 Determination of Sulfur in a Gaseous Matrix.

Test Method Conditions: The owner or operator shall use the test methods listed in Section 503 of this rule to determine compliance with the limitations listed in Tables 1 or 2 of this rule. Testing for stationary RICE shall be completed under steady state conditions 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.

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:

Records Required for a Stationary RICE: An owner or operator of a stationary RICE, including emergency engines, non-emergency engines and low usage non-emergency engines, shall keep a record that includes an initial one time entry that lists the particular engine combustion type (compression-ignition or spark-ignition or rich burn, lean burn); manufacturer; model designation, rated bhp, serial number and where the engine is located on the site.

Monthly Records Required for Non-Emergency Engines: An owner or operator of a non- emergency engine shall maintain a monthly record for non-emergency engines which shall include:

a. Hours of operation; and

b. Type of fuel used, and

c. Documentation verifying compliance with sulfur fuel content according to Section 301.1 of this rule.

Annual Records Required for Non-Emergency Engines: An owner or operator of a non-emergency engine shall maintain an annual record of the practices/procedure that are followed in order to comply with Section 302 (Good Combustion Practices/Tuning Procedure for Stationary RICE) of this rule.

Records Required for an Emergency Engine or a Low Usage Non-Emergency Engine: An owner or operator of an emergency engine or a low usage non-emergency engine that meets the exemptions listed in Sections 104 and 105 of this rule shall keep an engine record that includes:

a. Monthly rolling twelve month total of hours of operation, including hours of operation for testing, reliability and maintenance; and

b. Fuel type and sulfur content of fuel; and

c. Explanation for the use of the engine if it is used as an emergency engine.

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 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, 1001 North Central Avenue, Suite 125, Phoenix, Arizona, 85004-1942.

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).

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).

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 of Excess Air"), and 3C ("Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources") (40 CFR 60, Appendix A).

EPA Reference Method 4 ("Determination of Moisture Content in Stack Gases") (40 CFR 60, Appendix A).

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

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

EPA Reference Methods 7 ("Determination of Nitrogen Oxide Emissions from Stationary Sources"), 7A ("Determination of Nitrogen Oxide Emissions form Stationary Sources - Ion chromatographic method"), 7B ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Ultraviolet Spectrometry"), 7C ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline-Permanganate 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 Method"), (40 CFR 60, Appendix A).

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

EPA Reference Method 10 ("Determination of Carbon Monoxide from Stationary Sources") (40 CFR 60, Appendix A).

EPA Reference Method 18 ("Measurement of Gaseous Organic Compound Emissions by Gas Chromatography") (40 CFR 60, Appendix A).

EPA Reference Method 25A ("Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer") (40 CFR 60, Appendix A).

ASTM D2622-98 Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry.

ASTM D2880-96 Standard Specification for Gas Turbine Fuel Oils

ASTM D4294-02 or D4294-03 Standard Test Method for Sulfur in Petroleum Products by Energy-Dispersive X-Ray Fluoresence Spectroscopy

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
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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 ASTDM 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, semiconductormetal, 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 substate 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-precursororganic 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	AirDried		Baked	
	g VOC/l	lbVOC/ 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-InsulatingVarnish	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	AirDried		Baked	
	g VOC/l	lbVOC/ 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
PretreatmentCoating	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	lbVOC/ gal
Strippable Booth Coating (applies to both canan d coilcoatingcategories)	240	2.0
Can Coating		
Can Printing Ink	300	2.5
End Sealing Compound	440	3.7
Sheet Basecoat (Exterior and Interior)an d 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 RollCoat)	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-FreeCoatings	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 AsFlexible	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	AirDried		Baked	
	g VOC/l	lbVOC/ 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	[illegible]	[illegible]
Solar-Absorbent	420	3.5	360	3.0
Strippable Booth Coating	240	2.0	[illegible]	[illegible]

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	[illegible]	[illegible]	350	2.9
Paper, Film, and Foil Surface Coating (Not Including Pressure Sensitive Tape and Label)	0.08	0.40	[illegible]	[illegible]
Pressure Sensitive Tape and Label Surface Coating	0.067	0.20	[illegible]	[illegible]
Strippable Booth Coating	[illegible]	[illegible]	240	2.0
Vinyl	[illegible]	[illegible]	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/m^3(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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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	SICTitle
2434	Wood KitchenCabinets
2511	Wood Household Furniture,Excep t Upholstered
2512	Wood Household Furniture,Upholstere d
2517	Wood Television, Radio, Phonograph, and Sewing Machine Cabinets
2519	Household Furniture, Not ElsewhereClassifie d
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,andConvertibleBeds

*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: ADMINISTRATI VE 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 238 236 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 .

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 VarnishTopcoa t	2.0	5.46 lb/gal	655 g/l
Strippable Booth Coating	0.8	3.0 lb/gal	360 g/l

Coating Type	Lb VOC/lb solids is equivalent to kg VOC/kg solids	lb VOC /Gallon*	Grams VOC/liter*
Low VOC Topcoat (No VOC limit for Sealer when used with low VOC topcoat)	0.8	3.0 lb/gal	360 g/l

*** 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 UP 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.

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.

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:

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.

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.

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.

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:

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.

Employees hired after [adoption date of this rule], shall be trained upon hiring, unless previously trained within the past year.

Employees hired prior to [adoption date of this rule], shall be trained by [six months after adoption date of this rule].

Employees shall be given refresher training annually.

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.

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.

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.

Disposal/Recovery: An owner or operator shall keep records of disposal/recovery of all VOC-containing materials.

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.

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.

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.

APPENDIX A TO RULE 342
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	VOCContentNeutralPoint	VOCContent Neutral Point
Topcoat	1.62 lb VOC/lb solids	1.62 kgVOC/kg solids
Sealer coat	1.71 lb VOC/lb solids	1.71 kgVOC/kg solids
Washcoat	8.1 lb VOC/lb solids	8.1 kg VOC/kg solids
Basecoat	1.08 lb VOC/lb solids	1.08 kgVOC/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 ± 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:

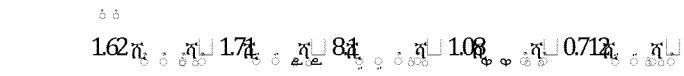
(1) If an exceedance of the limits of an averaging formula is determined to be in violation of this rule, at least two violations may be charged: at least one violation for exceeding the limits in Section 301.1 and a separate violation for exceeding the limit determined by the averaging formula in Section 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.

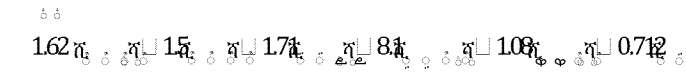
(2) For other coating systems using averaging, Formula 2 shall be used.



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. ERu 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 (TCi) becomes slightly altered to mean the total topcoat solids used of every other topcoat beside the unique topcoat "U":



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.

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.

APPENDIX C TO RULE 342

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 reinstituted 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, 1001 N. Central Ave., Phoenix, Arizona, 85004.

(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

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) ofthis 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.

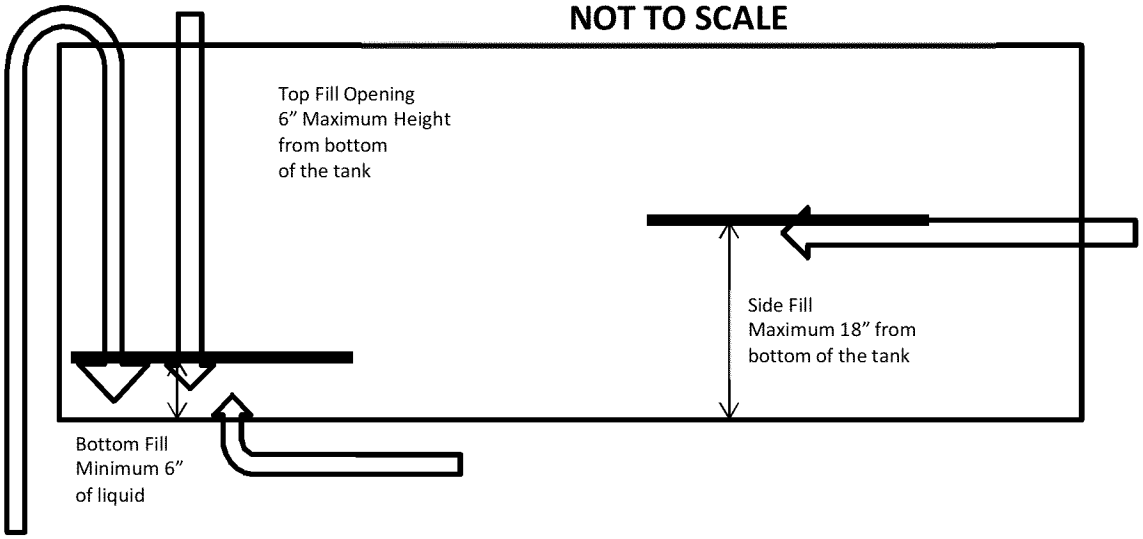
211.2 **Side-Fill:** At its highest point within the storage tank, the end of the discharge pipe or nozzle is totally submerged when the liquid level is eighteen (18) inches (46 cm) from the bottom of the tank.

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:

a. Is kept completely submerged, including when the roof rests on its legs, except when the tank is being emptied completely and refilled; and

b. Is designed and installed according to the API Standard 650.

Submerged Fill Diagram
NOT TO SCALE



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 ($26 \geq$ mmHg ≤ 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 ≥ mmHg ≤ 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≥ psia <1.5 (26≥ mm Hg <77.5)	1.5≥ psia ≤11.0 (77.5 ≥ mm Hg ≤569)	□11.0 psia (□569 mm Hg)
Tank Capacity	Applicable Rule 350Section:	Applicable Rule 350Section:	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 ≥40,000 gallons	Section301.1	Sections301.1 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 cm^2 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 cm^2 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 cm^2 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 cm^2 (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 cm^2 (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 Isoteniscope.

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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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.

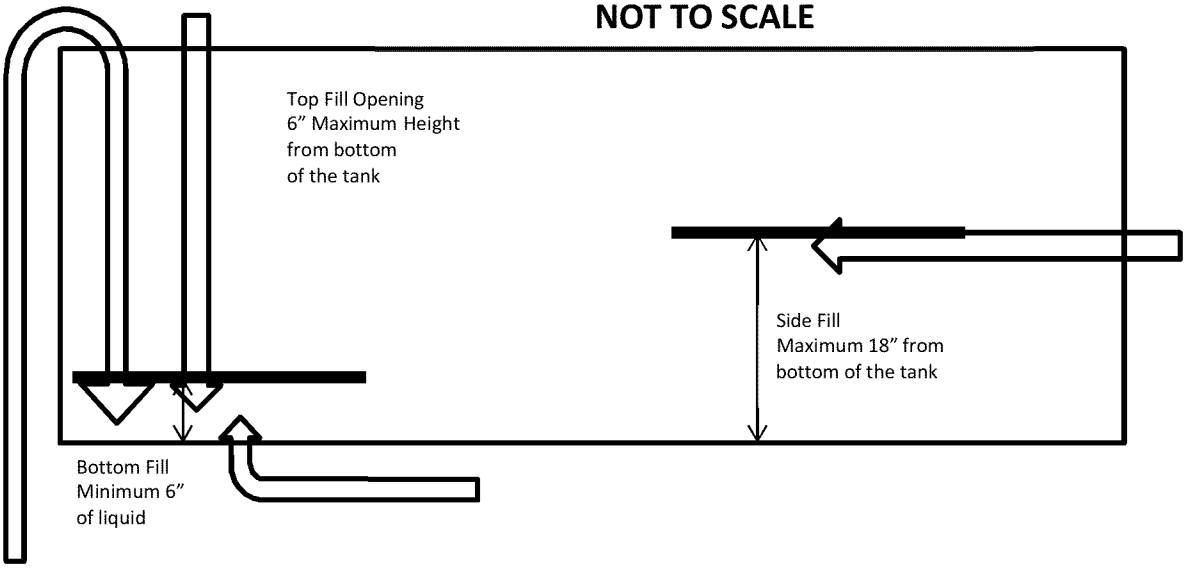
217 **STATIONARY STORAGE TANK:** Any tank, reservoir or other container used to store, but not transport, gasoline.

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 BBBBBB- 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 cm^2 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 cm^2 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 cm^2 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. Testi ng 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 cm^2 (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 cm^2 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.

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 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 Isoteniscope.

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
REGULATION III – CONTROL OF AIR CONTAMINANTS

RULE 352
GASOLINE CARGO TANK TESTING AND USE

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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.

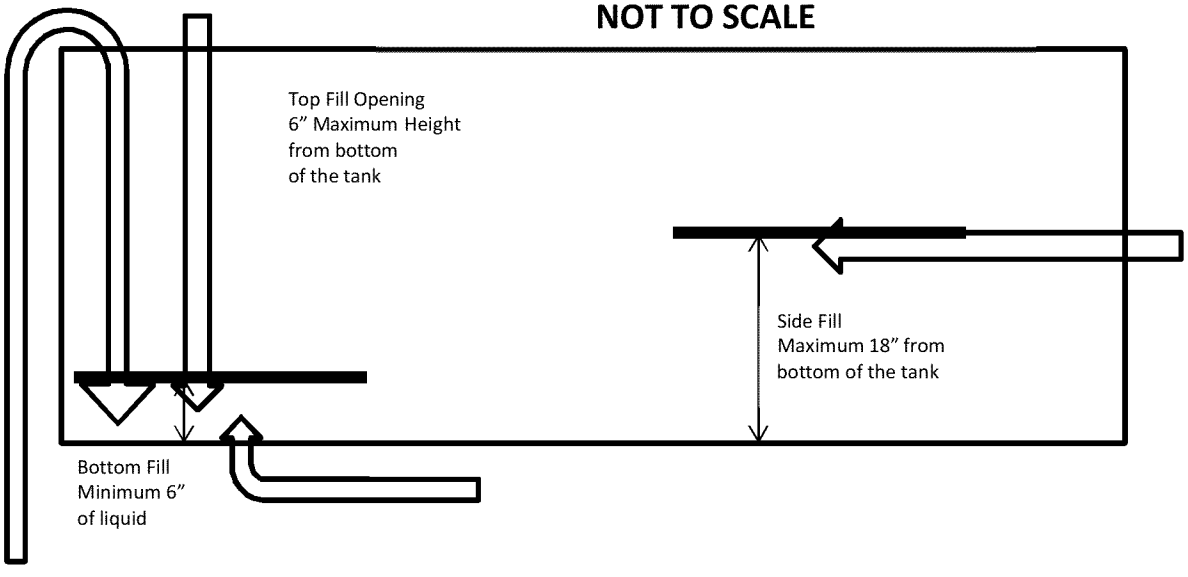
214 **STAGE 1 VAPOR RECOVERY SYSTEM (VR SYSTEM):** Any piping, hoses, equipment, and/or devices which are used to collect, store, or process gasoline vapors displaced by the loading of gasoline and also by the onloading of gasoline into a vapor laden gasoline cargo tank.

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 21to 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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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.

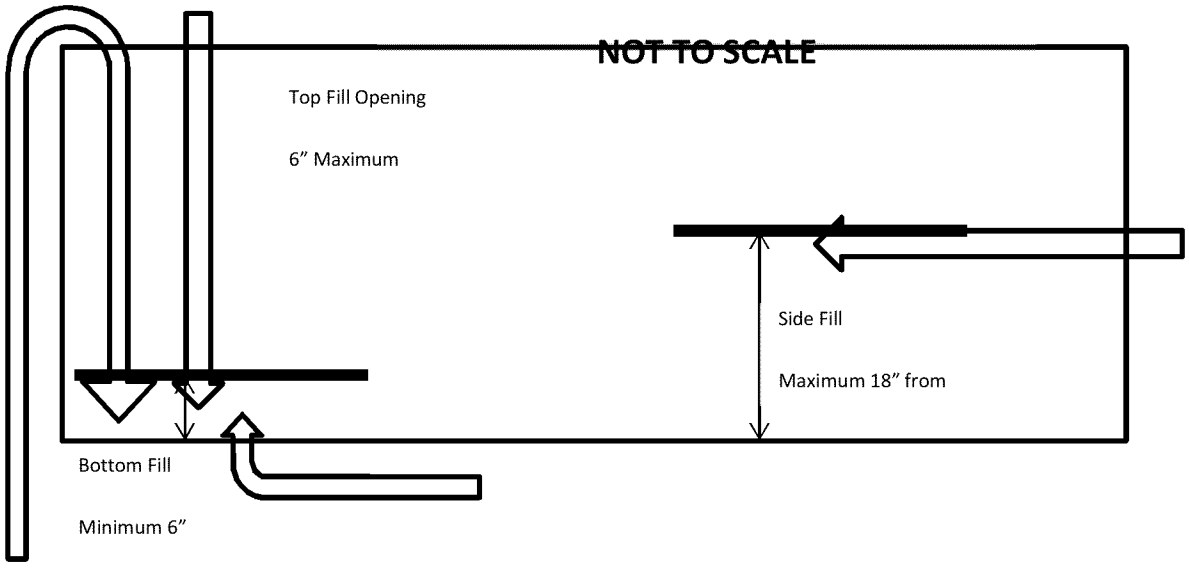
215 **STATIONARY GASOLINE DISPENSING TANK:** Any stationary tank which dispenses gasoline directly into a motorized vehicle's fuel tank, dispenses gasoline into an aircraft's fuel tank, or dispenses gasoline into a watercraft's fuel tank that directly fuels its engine(s).

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 gaoline 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 poppetted 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 poppetted 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 overfill 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 poppetted dry break shall be:

(1) Equipped with a vapor tight seal;

(2) Covered with a gasketed cap that fits securely onto the poppetted 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 coaxiallywith 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 method's listed in Section 501 of this rule shall be used.

b. Section 501.1 of this rule probe distance and movement parameters not withstanding, 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 21to 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 Overfill 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.

Maricopa County
Air Quality Department

State Implementation Plan Revision For The Maricopa County Air Quality Department Ozone Rules Contained In The Arizona SIP December 5, 2016

APPENDIX 7: EVIDENCE OF PUBLIC NOTICE

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Enhanced Regulatory Outreach Program
Maricopa County Air Quality Department

30-Day Comment Period
May 13, 2016 – June 13, 2016

The Board of Health during a public meeting on April 25, 2016 approved for the Expedited Process per the Enhanced Regulatory Outreach Program Policy proposed revisions to ten (10) Maricopa County Air Pollution Control Regulations as described below. These regulatory changes will proceed with a 30-day comment period anticipated to begin May 13, 2016 and to close at 5:00 pm on June 13, 2016. These regulatory changes will not have to appear before the Board of Health again prior to the Board of Supervisor's public hearing and approval.

Nine (9) of the rules are being revised to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS):

AQ-2015-002-Rule 322 (Power Plant Operations)
AQ-2015-003-Rule 323 (Fuel Burning From Industrial/Commercial/Institutional Sources)
AQ-2015-004-Rule 324 (Stationary Internal Combustion (IC) Engines)
AQ-2015-005-Rule 336 (Surface Coating Operations)
AQ-2015-006-Rule 342 (Coating Wood Furniture And Fixtures)
AQ-2015-008-Rule 350 (Storage Of Organic Liquids At Bulk Plants And Bulk Terminals)
AQ-2015-008-Rule 351 (Loading Of Organic Liquids)
AQ-2015-008-Rule 352 (Gasoline Delivery Vessel Testing And Use)
AQ-2015-008-Rule 353 (Gasoline In Stationary Dispensing Tanks)

One (1) of the rules is being revised to increase the threshold when new or modified stationary sources are required to apply Best Available Control Technology (BACT):

AQ-2016-002-Rule 241 (Minor New Source Review (NSR))

Additional information about these rulemakings will be available at: http://apps.azsos.gov/public_services/register/2016/contents.htm In addition, you can submit comments about these rulemakings and the rulemaking process at: http://www.maricopa.gov/regulations/comments.aspx

Thank you for participating in the rulemaking process.

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Reference/PO # PN10FEB16
01

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STATE OF ARIZONA
COUNTY OF MARICOPA } SS.

Angelina Aguilar, being first duly sworn, upon oath deposes and says: That she is the Legal Ad Rep of the Arizona Business Gazette, a newspaper of general circulation in the counties of Maricopa, Coconino, Pima and Pinal, in the State of Arizona, published weekly at Phoenix, Arizona, and that the copy hereto attached is a true copy of the advertisement published in the said paper on the dates indicated.

9/29/2016
10/6/2016

Sworn to before me this
6TH day of
OCTOBER 2016

BRIAN BILLINGS
Notary Public - Arizona
Maricopa County
My Commission Expires
July 25, 2018

Notary Public

NOTICE OF PUBLIC HEARING
FOR MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS AND STATE IMPLEMENTATION PLAN (SIP) REVISIONS
NOTICE IS HEREBY GIVEN that the Maricopa County Board of Supervisors will conduct a public hearing on November 2, 2016 at 9:30 AM to solicit comments on proposed amendments to nine (9) Maricopa County Air Pollution Control Regulations and to solicit comments on submitting the rules as a revision to the (Arizona) State Implementation Plan (SIP). These rules are being revised to address the requirements of the SIP for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). Following the public hearing, the Board of Supervisors is requested to adopt the proposed amendments to the Maricopa County Air Pollution Control Regulations and to authorize the Maricopa County Air Quality Department to submit the amended rules as a revision to the (Arizona) SIP. Since Maricopa County has been reclassified to "moderate" nonattainment for the 2008 eight-hour ozone NAAQS, the Clean Air Act requires Maricopa County to implement reasonably available control technology (RACT) to control volatile organic compound (VOC) and nitrogen oxide (NO$_x$) emissions. The following six (6) rules are being revised to address RACT for VOCs: (1) AQ-2015-005-Rule 336 (Surface Coating Operations), (2) AQ-2015-006-Rule 342 (Coating Wood Furniture And Fixtures), (3) AQ-2015-008-Rule 350 (Storage Of Organic Liquids At Bulk Plants And Bulk Terminals), (4) AQ-2015-008-Rule 351 (Loading Of Organic Liquids), (5) AQ-2015-008-Rule 352 (Gasoline Delivery Vessel Testing And Use), and (6) AQ-2015-008-Rule 353 (Gasoline In Stationary Dispensing Tanks). The following three (3) rules are being revised to address RACT for NO$_x$: (1) AQ-2015-002-Rule 322 (Power Plant Operations), (2) AQ-2015-003-Rule 323 (Fuel Burning Equipment From Industrial/Commercial/Institutional Sources), and (3) AQ-2015-004-Rule 324 (Stationary Internal Combustion (IC) Engines). The public hearing will be held at the Maricopa County Board of Supervisors' Auditorium, 205 West Jefferson St., Phoenix, Arizona. For more information regarding this rulemaking, please refer to the Staff Report to the Board of Supervisors, available at: http://www.maricopa.gov/regulations/. Copies of the Staff Report to the Board of Supervisors and the final draft rules will also be available at least 30 days prior to the hearing for public inspection at the offices of the Maricopa County Air Quality Department, 1001 N. Central Ave. Suite #125, Phoenix, Arizona 85004.
Published: September 29, October 6, 2016

THE RECORD REPORTER

~ SINCE 1914 ~

2025 N THIRD ST #160, PHOENIX, AZ 85004-1425
Telephone (602) 417-9900 / Fax (602) 417-9910

Publishing for Maricopa
and Pima Counties

Michelle Mada
MARICOPA AIR QUALITY DIV.
1001 N. CENTRAL AVE., STE, 125
PHOENIX, AZ - 85004-1942

RR# 2927860

AFFIDAVIT OF PUBLICATION

Reference #:

Notice Type: MCHRG - NOTICE OF HEARING

Ad Description: Notice of Public Hearing-OZONE Rules

I, Cathy L Fisher, am authorized by the publisher as agent to make this affidavit. Under oath, I state that the following is true and correct.

THE RECORD REPORTER is a newspaper of general circulation published Monday, Wednesday and Friday except legal holidays, in the County of Maricopa (also publishing for Pima County), State of Arizona. The copy hereto attached is a true copy of the advertisement as published on the following dates:

09/28/2016, 10/05/2016

INSERT LOGO HERE

NOTICE OF PUBLIC HEARINGFOR MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONSAND STATE IMPLEMENTATION PLAN (SIP) REVISIONSNOTICE IS HEREBY GIVEN that the Maricopa County Board of Supervisors will conduct a public hearing on November 2, 2016 at 9:30 AM to solicit comments on proposed amendments to nine (9) Maricopa County Air Pollution Control Regulations and to solicit comments on submitting the rules as a revision to the (Arizona) State Implementation Plan (SIP). These rules are being revised to address the requirements of the SIP for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). Following the public hearing, the Board of Supervisors is requested to adopt the proposed amendments to the Maricopa County Air Pollution Control Regulations and to authorize the Maricopa County Air Quality Department to submit the amended rules as a revision to the (Arizona) SIP. Since Maricopa County has been reclassified to "moderate" nonattainment for the 2008 eight-hour ozone NAAQS, the Clean Air Act requires Maricopa County to implement reasonably available control technology (RACT) to control volatile organic compound (VOC) and nitrogen oxide (NOx) emissions. The following six (6) rules are being revised to address RACT for VOCs: (1) AQ-2015-005-Rule 336 (Surface Coating Operations), (2) AQ-2015-006-Rule 342 (Coating Wood Furniture And Fixtures), (3) AQ-2015-008-Rule 350 (Storage Of Organic Liquids At Bulk Plants And Bulk Terminals), (4) AQ-2015-008-Rule 351 (Loading Of Organic Liquids), (5) AQ-2015-008-Rule 352 (Gasoline Delivery Vessel Testing And Use), and (6) AQ-2015-008-Rule 353 (Gasoline In Stationary Dispensing Tanks). The following three (3) rules are being revised to address RACT for NOx: (1) AQ-2015-002-Rule 322 (Power Plant Operations), (2) AQ-2015-003-Rule 323 (Fuel Burning Equipment From Industrial/Commercial/Institutional Sources), and (3) AQ-2015-004-Rule 324 (Stationary Internal Combustion (IC) Engines). The public hearing will be held at the Maricopa County Board of Supervisors' Auditorium, 205 West Jefferson St., Phoenix, Arizona. For more information regarding this rulemaking, please refer to the Staff Report to the Board of Supervisors, available at: http://www.maricopa.gov/regulations/. Copies of the Staff Report to the Board of Supervisors and the final draft rules will also be available at least 30 days prior to the hearing for public inspection at the offices of the Maricopa County Air Quality Department, 1001 N. Central Ave. Suite #125, Phoenix, Arizona 85004.
9/28, 10/5/16

RR-2927860#

State Of Arizona)
)ss.
County Of Maricopa)

Subscribed and sworn to before me on the 5th day of October, 2016

HEATHER CLAYTON
Notary Public - Arizona
Maricopa County
Expires 07/31/2020

Maricopa County
Air Quality Department

Revisions To The State Implementation Plan Revision For The Maricopa County Air Quality Department Ozone Rules Contained In The Arizona SIP

Originally Dated December 5, 2016
Originally Submitted To The EPA On December 19, 2016
June 16, 2017

APPENDIX 7A: EVIDENCE OF PUBLIC NOTICE RE: RACT SIP AND NEGATIVE DECLARATIONS

Arizona Business Gazette
The business resource

PO BOX 194
Phoenix, Arizona 85001-0194
(602) 444-7315 FAX (602) 444-5901

AFFIDAVIT OF PUBLICATION

STATE OF ARIZONA
COUNTY OF } SS.

MC AIR QUALITY DIV
1001 N CENTRAL AVE SUITE 125
Phoenix, AZ 85004

I, being first duly sworn, upon oath deposes and says: That I am the legal clerk of the Arizona Business Gazette, a newspaper of general circulation in the counties of Maricopa, Coconino, Pima and Pinal, in the State of Arizona, published weekly at Phoenix, Arizona, and that the copy hereto attached is a true copy of the advertisement published in the said paper on the dates indicated.

Order # 0008676462

P.O # SIP REVISION

Published Date(s):
04/20/17, 04/27/17

Sworn to before me this
28 TH day of
APRIL 2017

ROSE J NOVAK
Notary Public – Arizona
Maricopa County
My Comm. Expires Mar 14, 2021

Notary Public

NOTICE OF PUBLIC HEARING FOR STATE IMPLEMENTATION PLAN (SIP) REVISION

NOTICE IS HEREBY GIVEN that the Maricopa County Board of Supervisors will conduct a public hearing on May 24, 2017 at 9:30 AM to solicit comments on the submittal of the Reasonably Available Control Technology (RACT) SIP and negative declarations to the U.S. Environmental Protection Agency (EPA) as a revision to the (Arizona) SIP. Following the public hearing, the Board of Supervisors is requested to approve the submittal of the RACT SIP and negative declarations to the EPA as a revision to the (Arizona) SIP.

The RACT SIP is an analysis made by the Maricopa County Air Quality Department (MCAQD) that concludes that the MCAQD has fulfilled the requirements of RACT, as applicable to the 2008 eight-hour ozone national ambient air quality standards (NAAQS) for all Control Techniques Guidelines (CTG) source categories and for all major sources of volatile organic compounds (VOCs) and nitrogen oxides (NOx). RACT is the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. CTGs, issued by the EPA, are intended to provide States information that should assist them in determining RACT for source categories. In instances where either there were no sources in Maricopa County in a particular CTG source category or where there were no sources exceeding the CTG applicability threshold, the MCAQD made a negative declaration regarding such CTG source category. Negative declarations are included in the RACT SIP and are summarized as: (1) The MCAQD has determined that there are no emitting facilities in the county for the following CTG source categories: Automobiles and light duty trucks, Cutback asphalt, Flat wood paneling, Flexible packaging printing, Magnet wire insulation, Natural gas/gasoline processing plants, Fiberglass boat manufacturing, Petroleum refineries, Polymer manufacturing, Rubber tire manufacturing, Shipbuilding, and Synthetic organic chemical manufacturing and (2) The MCAQD has determined that there are no emitting facilities that exceed the CTG applicability threshold in the county for the following CTG source categories: Aerospace, Industrial adhesives, Large appliances, Large petroleum dry cleaners, Metal coils, Metal furniture, Paper, and Synthesized pharmaceutical products.

On November 2, 2016, the Board of Supervisors conducted a public hearing and approved amendments to nine (9) rules (Rules 322, 323, 324, 336, 342, 350, 351, 352, and 353) and approved the submittal of the amended rules to the EPA as a revision to the (Arizona) SIP. The rules were revised to address requirements of the SIP for "moderate" nonattainment for the 2008 eight-hour NAAQS. On December 19, 2016, the amended rules were submitted to the

[illegible] as a revision to the [illegible] SIP. Although the RACT SIP analysis dated December 5, 2016 was included with the nine (9) rules, neither the Notice of Public Hearing newspaper ads nor the Board of Supervisors' certified agenda mentioned the RACT SIP or the negative declarations. The public hearing on May 24, 2017 officially notifies the public of the opportunity to comment on the RACT SIP and negative declarations. Following the Board of Supervisors' public hearing on May 24, 2017 and approval of the submittal of the RACT SIP and negative declarations to the EPA as a revision to the (Arizona) SIP, the MCAQD will submit the RACT SIP and negative declarations to the EPA as a revision the (Arizona) SIP. The public hearing will be held at the Maricopa County Board of Supervisors' Auditorium, 205 West Jefferson St., Phoenix, Arizona. Copies of the RACT SIP and negative declarations will be available at least 30 days prior to the hearing for public inspection at the offices of the Maricopa County Air Quality Department, 1001 N. Central Ave. Suite #125, Phoenix, Arizona 85004.

MCAQD will take reasonable measures to provide access to department services to individuals with limited ability to speak, write, or understand English and/or to those with disabilities. Requests for language interpretation services or for disability accommodations must be made at least 48 hours in advance by contacting: (602) 506-6443

MCAQD tomará medidas razonables para proveer acceso a los servicios del departamento para personas con capacidad limitada para hablar, escribir o entender Inglés y / o para las personas con discapacidad. Las solicitudes de servicios de interpretación del lenguaje o de alojamiento de discapacidad deben hacerse por lo menos 48 horas de antelación poniéndose en contacto con: (602) 506-6443

Pub: April 20, 27 2017

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AFFIDAVIT OF PUBLICATION

Reference #:

Notice Type: MCHRG - NOTICE OF HEARING

Ad Description: RACT SIP Public Hearing

I, Cathy Fisher, am authorized by the publisher as agent to make this affidavit. Under oath, I state that the following is true and correct.

THE RECORD REPORTER is a newspaper of general circulation published Monday, Wednesday and Friday except legal holidays, in the County of Maricopa (also publishing for Pima County), State of Arizona. The copy hereto attached is a true copy of the advertisement as published on the following dates:

04/19/2017, 04/26/2017

State Of Arizona)
)ss.
County Of Maricopa)

Subscribed and sworn to before me on the 26th day of April, 2017

DIANE HEUEL
Notary Public - Arizona
Maricopa County
Expires 10/31/2018

RR# 2998999

NOTICE OF PUBLIC HEARING FOR STATE IMPLEMENTATION PLAN (SIP) REVISION NOTICE IS HEREBY GIVEN that the Maricopa County Board of Supervisors will conduct a public hearing on May 24, 2017 at 9:30 AM to solicit comments on the submittal of the Reasonably Available Control Technology (RACT) SIP and negative declarations to the U.S. Environmental Protection Agency (EPA) as a revision to the (Arizona) SIP. Following the public hearing, the Board of Supervisors is requested to approve the submittal of the RACT SIP and negative declarations to the EPA as a revision to the (Arizona) SIP. The RACT SIP is an analysis made by the Maricopa County Air Quality Department (MCAQD) that concludes that the MCAQD has fulfilled the requirements of RACT, as applicable to the 2008 eight-hour ozone national ambient air quality standards (NAAQS) for aiControl Techniques Guidelines (CTG) source categories and for all major sources of volatile organic compounds (VOCs) and nitrogen oxides (NO x). RACT is the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. CTGs, issued by the EPA, are intended to provide States information that should assist them in determining RACT for source categories. In instances where either there were no sources in Maricopa County in a particular CTG source category or where there were no sources exceeding the CTG applicability threshold, the MCAQD made a negative declaration regarding such CTG source category. Negative declarations are included in the RACT SIP and are summarized as: (1) The MCAQD has determined that there are no emitting facilities in the county for the following CTG source categories: Automobiles and light duty trucks, Cutback asphalt, Flat wood paneling, Flexible packaging printing, Magnet wire insulation, Natural gas/gasoline processing plants, Fiberglass boat manufacturing, Petroleum refineries, Polymer manufacturing, Rubber tire manufacturing, Shipbuilding, and Synthetic organic chemical manufacturing and (2) The MCAQD has determined that there are no emitting facilities that exceed the CTG applicability threshold in the county for the following CTG source categories: Aerospace, Industrial adhesives, Large appliances, Large petroleum dry cleaners, Metal coils, Metal furniture, Paper, and Synthesized pharmaceutical products. On November 2, 2016, the Board of Supervisors conducted a public hearing and approved amendments to nine (9) rules (Rules 322, 323, 324, 336, 342, 350, 351, 352, and 353) and approved the submittal of the amended rules to the EPA as a revision to the (Arizona) SIP. The rules were revised to address requirements of the SIP for "moderate" nonattainment for the 2008 eight-hour NAAQS. On December 19, 2016, the amended rules were submitted to the EPA as a revision to the (Arizona) SIP. Although the RACT SIP analysis dated December 5, 2016 was included with the nine (9) rules, neither the Notice of Public Hearing newspaper ads nor the Board of Supervisors' certified agenda mentioned the RACT SIP or the negative declarations. The public hearing on May 24, 2017 officially notifies the public of the opportunity to comment on the RACT SIP and negative declarations. Following the Board of Supervisors' public hearing on May 24, 2017 and approval of the submittal of the RACT SIP and negative declarations to the EPA as a revision to the (Arizona) SIP, the MCAQD will submit the RACT SIP and negative declarations to the EPA as a revision the (Arizona) SIP. The public hearing will be held at the Maricopa County Board of Supervisors' Auditorium, 205 West Jefferson St., Phoenix, Arizona. Copies of the RACT SIP and negative declarations will be available at least 30 days prior to the hearing for public inspection at the offices of the Maricopa County Air Quality Department, 1001 N. Central Ave, Suite #125, Phoenix, Arizona 85004. MCAQD will take reasonable measures to provide access to department services to individuals with limited ability to speak, write, or understand English and/or to those with disabilities. Requests for language interpretation services or for disability accommodations must be made at least 48 hours in advance by contacting: (602) 506-6443 MCAQD tomará medidas razonables para proveer acceso a los servicios del departamento para personas con capacidad limitada para hablar, escribir o entender inglés y / o para las personas con discapacidad. Las solicitudes de servicios de interpretación del lenguaje o de alojamiento de discapacidad deben hacerse por lo menos 48 horas de anticipación poniéndose en contacto con: (602) 506-6443
4/19, 4/26/17

RR-2998999

DIANE HEUEL
Notary Public - Arizona
Maricopa County
Expires 10/31/2018

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