

NOTICE OF PROPOSED EXPEDITED RULEMAKING

TITLE 18. ENVIRONMENTAL QUALITY

**CHAPTER 2. DEPARTMENT OF ENVIRONMENTAL QUALITY –
AIR POLLUTION CONTROL**

PREAMBLE

- 1. Article, Part, or Section Affected (as applicable)** **Rulemaking Action**
R18-2-1006 Amend
- 2. Citations to the agency’s statutory rulemaking authority to include the authorizing statute (general) and the implementing statute (specific):**
- Authorizing statutes: A.R.S. §§49-104, 49-404, 49-425, 49-447
- Implementing statutes: A.R.S. §§49-541, 49-542, 49-542.02, 49-542.03
- 3. Citations to all related notices published in the *Register* as specified in R1-1-409(A) that pertain to the record of the proposed rule:**
- Notice of Rulemaking Docket Opening: July 30, 2021, Volume 27, Issue 31 A.A.R. Page 1147
- 4. The agency’s contact person who can answer questions about the rulemaking:**
- Name: Jennifer Reeves
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- 5. An agency’s justification and reason why a rule should be made, amended, repealed or renumbered under A.R.S § 41-1027(A), to include an explanation about the rulemaking:**

Under A.R.S. §41-1027(A)(3), an agency may correct typographical errors, make address or name changes, or clarify the language of a rule without changing its effect. This rulemaking performs technical corrections to address typographical errors in A.A.C. Title 18, Chapter 2, Article 10 (Motor Vehicles; Inspections and Maintenance) and will not add regulatory burden.

In Fiscal Year 2019, ADEQ executed the “Vehicle Emissions Modernization Rulemaking.” The modernization rulemaking brought the Vehicle Emissions Testing Program (VEIP) in line with federal regulations, implemented HB 2357 (2005), HB 1531 (2007), and HB 2226 (2014) into rule, allowed the Arizona VEIP to leverage new technology, and codified VEIP practices that have been simplified as a result of ADEQ’s adoption of the LEAN Management System. In addition, that rulemaking introduced tables to Article 10 to simplify the way vehicles and their testing types were presented in the Article. However, the newly introduced tables contain errors to internal citations within the VEIP regulations. These minor errors are immaterial to the execution of the regulations, but may be confusing to individuals using the rules to see what type of test their vehicle must undergo.

As part of the process to update VEIP regulations, ADEQ must still update the Arizona State Implementation Plan (SIP) before the changes become effective. This is reflected in the contingent nature of some of the rule changes, which become effective after the United States Environmental Protection Agency (EPA) approves the already adopted regulations into the SIP. EPA will not approve the rules without the technical corrections in this expedited rulemaking.

The only changes that will be made to the rules are in the “Test Subsection” columns in A.A.C. R18-2-1006. These updated citations will provide clarity to Arizona citizens regarding which testing procedures apply to their vehicles.

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

Not applicable.

7. A showing of good cause why the rulemaking is necessary to promote a statewide interest if the rulemaking will diminish a previous grant of authority of a political subdivision of this state:

Not applicable.

8. The agency is exempt from the requirements under A.R.S. § 41-1055(G) to prepare and file an economic, small business, and consumer impact statement under A.R.S. § 41-1055(D)(2).

9. The agency’s contact person who can answer questions about the economic, small business and consumer impact statement:

Not applicable.

10. The time, place, and nature of the proceedings to make, amend, repeal, or renumber the rule, or if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:

Date: January 25, 2022

Time: 2:00 p.m. MST

Location: ADEQ has scheduled a virtual public hearing via GoToWebinar.

Join by Internet: The link to access the hearing is:

<https://attendee.gotowebinar.com/register/4171783929720048655>

After registering, you will receive a confirmation email containing information about joining the webinar.

ADEQ will accept any written comments on the matter until close of comment, the day of the public hearing.

11. All agencies shall list other matters prescribed by statute applicable to the specific agency or to any specific rule or class of rules. Additionally, an agency subject to Council review under A.R.S. §§ 41-1052 and 41-1055 shall respond to the following questions:

There are no other matters prescribed by statutes applicable specifically to ADEQ or this specific rulemaking.

a. Whether the rule requires a permit, whether a general permit is used and if not, the reasons why a general permit is not used:

This rule will not require a permit.

b. Whether a federal law is applicable to the subject of the rule, whether the rule is more stringent than federal law and if so, citation to the statutory authority to exceed the requirements of federal law:

According to the Code of Federal Regulations, Title 40, Chapter I, Subchapter C, Part 51, and Subpart S Inspection/Maintenance Program Requirements: Inspection/maintenance (I/M) programs are required in both ozone and carbon monoxide nonattainment areas, depending upon population and nonattainment classification or design value. This rulemaking merely clarifies minor typographical errors within Arizona's existing I/M program.

c. Whether a person submitted an analysis to the agency that compares the rule's impact of the competitiveness of business in this state to the impact on business in other states:

No persons submitted an analysis to ADEQ.

12. A list of any incorporated by reference material as specified in A.R.S. § 41-1028 and its location in the rules:

Performing Onboard Diagnostic System Checks as Part of a Vehicle Inspection and Maintenance Program," EPA420-R-01-015, EPA, June 2001.

R18-2-1006(C)(4)(b)

IM240 & Evap Technical Guidance," EPA420-R-00-007, EPA, April 2000.

R18-2-1006(C)(5)(a)(vii)

R18-2-1006(C)(5)(b)(iii)

R18-2-1006(C)(6)(c)(i)

Society of Automotive Engineers Recommended Practice J1667, February 1996

R18-2-1006(C)(10)(a)(i)

40 CFR 51, Subpart S, Appendix B, Section III, amended as of July 1, 2017

R18-2-1006(C)(6)(b)

40 CFR 51, Subpart S, Appendix A, Section I, amended as of July 1, 2017

R18-2-1006(C)(6)(c)(ii)

R18-2-1006(C)(7)(b)

R18-2-1006(C)(8)(b)

40 CFR 51, Subpart S, Appendix B, Section II, amended as of July 1, 2017

R18-2-1006(C)(7)(a)

13. The full text of the rules follows:

TITLE 18. ENVIRONMENTAL QUALITY

CHAPTER 2. DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR POLLUTION CONTROL

ARTICLE 10. MOTOR VEHICLES; INSPECTIONS AND MAINTENANCE

R18-2-1006. Emissions Test Procedures

- A. This Section establishes the testing requirements for vehicles in the State of Arizona. Subsection (B) identifies which tests apply to a particular type and model year of vehicle. Subsection (C) establishes the procedures and criteria for passing, failing, or being rejected from each test.
- B. Test applicability.
 - 1. Area A and Area B non-diesel. The following general requirements govern test applicability for non-diesel vehicles in both Area A and Area B:
 - a. A rotary engine shall be inspected as a 4-stroke engine with four cylinders or less.
 - b. For a vehicle in which an engine has been replaced:
 - i. A vehicle owner shall not install a heavy-duty engine in a light-duty chassis.
 - ii. A vehicle owner shall not install a light-duty engine in a heavy-duty chassis.
 - iii. The replacement engine package shall include all emissions control equipment and devices that were required by the manufacturer for an engine-chassis certification. All emissions control equipment and devices shall be properly installed and in operating condition, and the resulting engine-chassis configuration shall be equivalent to a verified configuration of the same, or newer, model year as that of the vehicle chassis.
 - iv. The Department shall inspect the vehicle according to the model year of the vehicle chassis.

2. Area A Non-Diesel. Non-diesel vehicles in Area A are subject to the test procedures identified in this subsection:
- a. Vehicles other than alternative fuel vehicles operated by a school district in Area A, heavy duty alternative fuel vehicles, reconstructed vehicles, and constant 4-wheel-drive vehicles that are not equipped with OBD, are subject to the following test procedures until the Administrator approves subsection (B)(2)(a)(i) into the applicable implementation plan:

Area A Non-Diesel Testing Procedures Until SIP Revision is Approved				
Model Year	GVWR	Test Frequency	Tests Applicable	Test Subsection
1996 or later	8,500 pounds or less	Biennial	OBD Functional gas cap Tampering	C.4 C.16 <u>C.15</u> C.17 <u>C.16</u>
1981 through 1995	8,500 pounds or less	Biennial	Transient loaded and evaporative system pressure Functional gas cap Tampering	C.5 C.16 <u>C.15</u> C.17 <u>C.16</u>
1975 through 1980	8,500 pounds or less	Annual	Loaded test Functional gas cap Tampering	C.6 C.16 <u>C.15</u> C.17 <u>C.16</u>
1975 or later	More than 8,500 pounds	Annual	Loaded test Functional gas cap Tampering	C.6 C.16 <u>C.15</u> C.17 <u>C.16</u>
1967 through 1974	Any	Annual	Loaded test Functional gas cap	C.6 C.16 <u>C.15</u>

- i. Test procedures that apply after the Administrator approves this subsection, (B)(2)(a)(i), into the applicable implementation plan:

Area A Non-Diesel Testing Procedures After SIP Revision is Approved					
Model Year	GVWR	OBD Certified?	Test Frequency	Tests Applicable	Test Subsection
1996 or Later	Any	Yes	Biennial	OBD Functional gas cap Tampering	C.4 C.16 <u>C.15</u> C.17 <u>C.16</u>
1981 or later	8,500 pounds or less	No	Biennial	Transient loaded and evaporative system pressure Functional gas cap Tampering	C.5 C.16 <u>C.15</u> C.17 <u>C.16</u>
1975 through 1980	8,500 pounds or less	No	Annual	Loaded test Functional gas cap Tampering	C.6 C.16 <u>C.15</u> C.17 <u>C.16</u>
1975 or later	More than 8,500 pounds	No	Annual	Loaded test Functional gas cap Tampering	C.6 C.16 <u>C.15</u> C.17 <u>C.16</u>

1967 through 1974	Any	No	Annual	Loaded test Functional gas cap	C.6 C.17 <u>C.15</u>
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- b. Alternative fuel vehicles operated by a school district in Area A are subject to the following testing procedures until the Administrator approves subsection (B)(2)(b)(i) into the applicable implementation plan. After section (B)(2)(b)(i) has been approved into the applicable implementation plan, alternative fuel vehicles operated by a school district in Area A will be subject to subsection (B)(2)(b)(i).

Area A Alt. Fuel Vehicles Operated by a School District Testing Procedures Until SIP Revision is Approved				
Model Year	OBD Certified?	Test Frequency	Tests Applicable	Test Subsection
1975 or later	No	Annual	Loaded test Functional gas cap Tampering	C.6 C.16 <u>C.15</u> C.17 <u>C.16</u>
1967 through 1974	No	Annual	Loaded test Functional gas cap	C.8 <u>C.6</u> C.16 <u>C.15</u>

- C. Test procedures that apply after the Administrator approves this subsection, (B)(2)(b)(i), into the applicable implementation plan.

Area A Alt. Fuel Vehicles Operated by a School District Testing Procedures After SIP Revision is Approved				
Model Year	OBD Certified?	Test Frequency	Tests Applicable	Test Subsection
Any	Yes	Biennial	OBD Functional gas cap Tampering	C.4 C.16 <u>C.15</u> C.17 <u>C.16</u>
1975 or later	No	Annual	Loaded test Functional gas cap Tampering	C.6 C.16 <u>C.15</u> C.17 <u>C.16</u>
1967 through 1974	No	Annual	Loaded test Functional gas cap	C.6 C.16 <u>C.15</u>

- c. Heavy duty alternative fuel vehicles in Area A that are not owned by a school district are subject to the follow testing procedures.

Model Year	GVWR	OBD Certified?	Test Frequency	Tests Applicable	Test Subsection
Any	More than 14,500 pounds	Yes	Biennial	OBD Functional gas cap Tampering	C.4 C.16 <u>C.15</u> C.17 <u>C.16</u>
1975 or later	More than 14,500 pounds	No	Annual	Idle test Functional gas cap Tampering	C.8 C.16 <u>C.15</u> C.17 <u>C.16</u>
1967 through 1974	More than 14,500 pounds	No	Annual	Idle test Functional gas cap	C.8 C.16 <u>C.15</u>

3. Area B Non-Diesel. Non-diesel vehicles in Area B are subject to the test procedures identified in this subsection:
- a. Vehicles other than reconstructed vehicles and constant 4-wheel-drive vehicles that are not equipped with OBD shall be subject to the following test procedures until the Administrator approves subsection (B)(2)(a)(i) into the applicable implementation plan:

Area B Non-Diesel Testing Procedures Until SIP Revision is Approved				
Model Year	GVWR	Test Frequency	Tests Applicable	Test Subsection
1996 or later	8,500 pounds or less	Annual	OBD Functional gas cap Tampering	C.4 C.16 <u>C.15</u> C.17 <u>C.16</u>
1981 through 1995	8,500 pounds or less	Annual	Loaded test Functional gas cap Tampering	C.6 C.16 <u>C.15</u> C.17 <u>C.16</u>
1975 through 1980	8,500 pounds or less	Annual	Idle test Functional gas cap Tampering	C.8 C.16 <u>C.15</u> C.17 <u>C.16</u>
1975 or later	More than 8,500 pounds	Annual	Idle test Functional gas cap Tampering	C.8 C.16 <u>C.15</u> C.17 <u>C.16</u>
1967 through 1974	Any	Annual	Idle test Functional gas cap	C.8 C.16 <u>C.15</u>

- i. Test procedures that apply after the Administrator approves this subsection (B)(2)(a)(i) into the applicable implementation plan:

Area B Non-Diesel Testing Procedures After SIP Revision is Approved					
Model Year	GVWR	OBD Certified?	Test Frequency	Tests Applicable	Test Subsection
Any	Any	Yes	Biennial	OBD Functional gas cap Tampering	C.4 C.16 <u>C.15</u> C.17 <u>C.16</u>
1981 or later	8,500 pounds or less	No	Annual	Loaded test Functional gas cap Tampering	C.6 C.16 <u>C.15</u> C.17 <u>C.16</u>
1975 through 1980	8,500 pounds or less	No	Annual	Loaded Test Functional gas cap Tampering	C.6 C.16 <u>C.15</u> C.17 <u>C.16</u>
1975 or later	More than 8,500 pounds	No	Annual	Idle test Functional gas cap Tampering	C.8 C.16 <u>C.15</u> C.17 <u>C.16</u>

1967 through 1974	Any	No	Annual	Idle test Functional gas cap	C.9 C.8 C.17 C.15
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4. Reconstructed non-diesel vehicles. Reconstructed non-diesel vehicles in both Area A and Area B are subject to the tests specified in the following table:

Model Year	Test Frequency	Tests Applicable	Test Subsection
1967 or later	Annual	Loaded test Visual gas cap	C.6 C.18 C.17

5. Constant 4-wheel-drive vehicles. Constant 4-wheel-drive in both Area A and Area B that are not equipped with OBD are subject to the tests specified in the following table:

Model Year	Test Frequency	Tests Applicable	Test Subsection
1975 or later	Annual	Idle Test Functional gas cap Tampering	C.8 C.16 C.15 C.17 C.16
1967 through 1974	Annual	Idle Test Functional gas cap	C.8 C.16 C.15

6. Area A diesel. Diesel vehicles that require inspection in Area A are subject to the test procedures specified in this subsection until the Administrator approves subsection (B)(8) into the applicable implementation plan:

Area A Diesel Testing Procedures Until SIP Revision is Approved					
GVWR	OBD Certified?	Model Year	Test Frequency	Tests Applicable	Test Subsection
8,500 and less	Yes	Any	Annual	OBD Tampering	C.4 C.17 C.16
More than 8,500 pounds	No	1975 or later	Annual	Snap idle Tampering	C.10 C.17 C.16
More than 8,500 pounds	No	1967 through 1974	Annual	Snap idle	C.10
More than 4,000 and less than or equal to 8,500 pounds	No	1975 or later	Annual	Loaded opacity B Tampering	C.12 C.17 C.16
More than 4,000 and less than or equal to 8,500 pounds	No	1967 through 1974	Annual	Loaded opacity B	C.12
4,000 pounds or less	No	1975 or later	Annual	Loaded opacity C Tampering	C.13 C.17 C.16
4,000 pounds or less	No	1967 through 1974	Annual	Loaded opacity C	C.13

7. Area B Diesel. Diesel vehicles that require inspection in Area B are subject to the test procedures specified in this subsection until the Administrator approves subsection (B)(8) into the applicable implementation plan:

Area B Diesel Testing Procedures Until SIP Revision is Approved				
GVWR	Model Year	Test Frequency	Tests Applicable	Test Subsection
More than 26,000 pounds	1975 or later	Annual	Loaded opacity A	C.12 <u>C.11</u>
			Tampering	C.18 <u>C.16</u>
More than 26,000 pounds	1967 through 1974	Annual	Loaded opacity A	C.12 <u>C.11</u>
More than 10,500 and less than or equal to 26,000 pounds	1975 or later	Annual	Any of the following: Loaded opacity A	C.12 <u>C.11</u>
			Loaded opacity B	C.13 <u>C.12</u>
			Tampering	C.18 <u>C.16</u>
More than 10,500 and less than or equal to 26,000 pounds	1967 through 1974	Annual	Any of the following: Loaded opacity A	C.12 <u>C.11</u>
			Loaded opacity B	C.13 <u>C.12</u>
More than 4,000 and less than or equal to 10,500	1975 or later	Annual	Loaded opacity B	C.13 <u>C.12</u>
			Tampering	C.18 <u>C.16</u>
More than 4,000 and less than or equal to 10,500	1967 through 1974	Annual	Loaded opacity B	C.13 <u>C.12</u>
4,000 pounds or less	1975 or later	Annual	Loaded opacity C	C.14 <u>C.13</u>
			Tampering	C.18 <u>C.16</u>
4,000 pounds or less	1967 through 1974	Annual	Loaded opacity C	C.14 <u>C.13</u>

8. Test procedures that apply for diesel vehicles in both Area A and Area B after the Administrator approves this subsection (B)(8) into the applicable implementation plan:

Area A and Area B Diesel Testing Procedures After SIP Revision is Approved					
GVWR	OBD Certified?	Model Year	Test Frequency	Tests Applicable	Test Subsection
Any	Yes	Any	Biennial	OBD Tampering	C.4 C.17 <u>C.16</u>
More than 8,500 pounds	No	1975 or later	Annual	Snap idle Tampering	C.10 C.17 <u>C.16</u>
More than 8,500 pounds	No	1967 through 1974	Annual	Snap idle	C.10

More than 4,000 and less than or equal to 8,500 pounds	No	1975 or later	Annual	Loaded opacity B Tampering	C.12 C.17 <u>C.16</u>
More than 4,000 and less than or equal to 8,500 pounds	No	1967 through 1974	Annual	Loaded opacity B	C.12
4,000 pounds or less	No	1975 or later	Annual	Loaded opacity C Tampering	C.13 C.17 <u>C.16</u>
4,000 pounds or less	No	1967 through 1974	Annual	Loaded opacity C	C.13

9. Dealer Fleet Testing Procedures. The test procedures in the table in this section apply until the administrator approves sections (B)(2)(a)(i), (B)(3)(a)(i), and (B)(8) into the applicable implementation plan for used vehicles sold by a motor vehicle dealer who is a fleet operator and who has been issued a permit pursuant to §49-546. After those sections are approved into the applicable implementation plan, used vehicles sold by a motor vehicle dealer who is a fleet operator and who has been issued a permit pursuant to §49-546 will be subject to the same testing procedures as vehicles tested at state stations and the table in this section will no longer be applicable.

Area A and Area B Dealer Fleet Testing Procedures Until SIP Revision is Approved			
Model Year	Test Frequency	Tests Applicable	Test Subsection
1981 or later	Annual	Two speed idle test Functional gas cap Tampering	C.6 <u>C.7</u> C.16 <u>C.15</u> C.17 <u>C.16</u>
1975 through 1980	Annual	Idle Test Functional gas cap Tampering	C.7 <u>C.8</u> C.16 <u>C.15</u> C.17 <u>C.16</u>
1967 through 1974	Annual	Idle Test Functional gas cap	C.8 C.16 <u>C.15</u>

C. Test Requirements

1. Conditions for Pass. A vehicle passes inspection if the vehicle:
 - a. Is subjected to all applicable tests required by Subsection (B);
 - b. Is not rejected from any of the tests for any of the reasons specified in (C)(2) or (C)(3) of this subsection; and
 - c. Does not fail any of the applicable tests for any of the reasons specified in this subsection.
2. Pre-Test Safety Inspection
 - a. The Department shall inspect each vehicle visually before the emissions test for any of the following unsafe or untestable conditions:
 - i. A fuel leak that causes wetness or pooling of fuel;
 - ii. A continuous engine or transmission oil leak onto the floor;
 - iii. A continuous engine coolant leak onto the floor such that the engine is overheating or may overheat within a short time;

- iv. A tire on a driving wheel with less than 2/32-inch tread, metal protuberances, unmatched tire size, obviously low tire pressure as determined by visual inspection;
 - v. An exhaust pipe that does not allow for safe exhaust probe insertion;
 - vi. An exhaust pipe on a diesel-powered vehicle that does not allow for safe exhaust probe insertion and attachment of opacity meter sensor units;
 - vii. Improperly operating brakes;
 - viii. Any vehicle modification or mechanical condition that prevents dynamometer operation;
 - ix. Loud internal engine noise;
 - x. An obvious exhaust leak;
 - xi. Towing a trailer or carrying a heavy load;
 - xii. Carrying explosives or any hazardous material not used as a fuel for the vehicle; or
 - xiii. Any other condition that in the judgment of the inspector makes testing unsafe or the vehicle untestable.
- b. If the inspector determines that a vehicle is unsafe or otherwise untestable by the visual inspection the following shall apply:
- i. The vehicle shall be rejected without an emissions test;
 - ii. The inspector shall notify the vehicle owner or operator of all untestable or unsafe conditions found;
 - iii. A state station shall not charge a fee; and
 - iv. A state station shall not test the vehicle until the cause for rejection is repaired.
3. Test Operating Conditions. When conducting the emissions test required by this Section, the vehicle emissions inspector shall ensure that all of the following requirements are satisfied:
- a. The vehicle shall be tested in the condition presented, unless rejected under 18-2-1006(C)(2);
 - b. The vehicle's engine shall be operating at normal temperature and not be overheating as indicated by a gauge, warning light, or boiling radiator; and
 - c. All vehicle accessories shall be turned off during testing.
4. OBD Test.
- a. Test Procedure. The OBD test shall consist of:
 - i. A visual inspection of the MIL function; and
 - ii. An electronic examination of the OBD computer by connecting a scan tool to the data link connector and interrogating the OBD system to determine vehicle readiness status, MIL status, and the presence of diagnostic trouble codes.
 - b. Equipment Specifications. The OBD equipment shall conform to the requirements of "Performing Onboard Diagnostic System Checks as Part of a Vehicle Inspection and Maintenance Program," EPA420-R-01-015, EPA, June 2001 (and no future editions or amendments), which is incorporated by reference. A copy of this incorporated material is on file with the Department, the Secretary of State, and is available online at <http://azdeq.gov/VECS/Rulemaking>.
 - c. OBD scan tools shall have the most recent available software downloaded and installed before inspection.
 - d. Test Rejection. A vehicle shall be rejected from an OBD test if any of the following conditions occurs:

- i. The number of unset readiness indicators, excluding continuous indicators, is three or more for a model year 1996-2000 vehicle, or two or more for a model year 2001 and newer vehicle;
 - ii. The data link connector cannot be located or is inaccessible;
 - iii. The data link connector is loose and the scan tool cannot be inserted into the connector;
 - iv. The OBD is not communicating;
 - v. The data link connector has no voltage; or
 - vi. The eVIN and monitors are mismatched.
 - e. Test Failure. A vehicle fails the OBD test if any of the following conditions occurs:
 - i. The vehicle's MIL does not illuminate when the ignition is on and the engine is off;
 - ii. The vehicle's MIL illuminates continuously or flashes with the engine running;
 - iii. The vehicle's OBD system reports the MIL as commanded on;
 - iv. The vehicle's OBD system data is inappropriate for the vehicle being tested; or
 - v. The vehicle's OBD system data does not match the original equipment manufacturer (OEM) or an ADEQ exempted OBD software configuration.
- 5. Transient Loaded and Evaporative System Pressure Test.
 - a. Transient Loaded Test Procedure.
 - i. The transient loaded test shall consist of 147 seconds of mass emissions measurement using a constant volume sampler while the vehicle is driven by an inspector through a computer-monitored driving cycle on a dynamometer with inertial weight settings appropriate for the weight of the vehicle.
 - ii. The driving cycle shall include the acceleration, deceleration, and idle operating modes described in Table 4.
 - iii. The 147-second sequence may be ended earlier using a fast-pass or fast-fail algorithm.
 - iv. A retest algorithm shall be used to determine if a test failure is due to insufficient vehicle preconditioning. As determined by the retest algorithm, an additional test may be performed on a failing vehicle.
 - v. The highest selectable drive gear shall be used for automatic transmissions and first gear shall be used for manual transmission acceleration from idle.
 - vi. Exhaust emissions concentrations in grams per mile for HC, CO, NO_x and CO₂ shall be recorded continuously beginning with the first second.
 - vii. All testing and test equipment for the transient loaded emissions test shall conform to "IM240 & Evap Technical Guidance," EPA420-R-00-007, EPA, April 2000, and no future editions or amendments, which is incorporated by reference, except that the transient driving cycle in Table 4, the standards in Table 4, and the fast-pass, fast-fail retest algorithms described in subsection (C)(5)(a) shall be used. A copy of the incorporated material is on file with the Department, the Secretary of State, and is available online at <http://azdeq.gov/VECS/Rulemaking>.
 - viii. In determining compliance under subsection (C)(5)(d) for a vehicle that operates on natural gas, HC emissions shall be multiplied by 0.19, when

- an analyzer with a flame ionization detector is used or 0.61, when an NDIR analyzer is used.
- b. Evaporative System Pressure Test Procedure. The evaporative system pressure test shall consist of the following steps in sequence:
 - i. Connect the test equipment to either the fuel tank vent hose at the canister or the fuel tank filler neck;
 - ii. Pressurize the system to 14 ± 0.5 inches of water without exceeding 26 inches of water system pressure; and
 - iii. Close off the pressure source, seal the evaporative system, and monitor pressure decay for two minutes unless a failure is detected or a fast-pass determination is made as defined in EPA420-R-00-007, which is incorporated by reference in subsection (C)(5)(a)(vii) of this rule.
 - c. Test Rejection. A vehicle shall be rejected from the transient loaded and evaporative system pressure test if it has an audible or visible exhaust leak during emissions testing, or the vehicle displays unsafe behavior on the dynamometer during testing.
 - d. Transient Loaded Test Failure. A vehicle fails the transient loaded test if emissions measured during the test exceed the Table 3 standard applicable to the model year and type of the vehicle being tested as follows:
 - i. The average emissions measured for the entire test exceed the “composite standard” for any pollutant; or
 - ii. The average emissions measured during seconds 65 through 146 exceed the “phase-2” standard for any pollutant.
 - e. Evaporative System Pressure Test Failure. A vehicle fails the evaporative system pressure test if any of the following conditions occurs:
 - i. The evaporative system cannot maintain a system pressure above eight inches of water for two minutes after being pressurized to 14 ± 0.5 inches of water;
 - ii. The canister is missing or damaged; or
 - iii. The hose or electrical system is missing, routed incorrectly, or disconnected, according to the vehicle emissions control information label.
 - f. Test Failure. A vehicle fails the transient loaded and evaporative system pressure test if it fails the test under either subsection 10-2-1006(C)(5)(d) or 10-2-1006(C)(5)(e).
6. Loaded Test.
- a. Loaded Cruise Test Procedure.
 - i. The vehicle’s drive wheels shall be placed on a dynamometer and the vehicle shall be operated according to the Table 1 of this Article.
 - b. Besides the Arizona specific dynamometer test schedule, loaded tests shall conform to the procedures listed at 40 CFR 51, Subpart S, Appendix B, Section III, amended as of July 1st, 2017, which is incorporated by reference and on file with the Department, the Secretary of State, and is available online at <http://azdeq.gov/VECS/Rulemaking>.
 - c. Loaded Test Equipment Specifications.
 - i. The equipment used in Area A state stations for loaded cruise and curb idle testing shall conform to IM240 & Evap Technical Guidance," EPA420-R-00-007, EPA, April 2000, and no future editions or amendments, which is incorporated by reference in subsection (C)(5)(a)(vii) of this rule.

- ii. The equipment used in Area B state stations and all Arizona fleet emission testing stations for the loaded test shall comply with 40 CFR 51, Subpart S, Appendix A, Section I, amended as of July 1, 2017, which is incorporated by reference and on file with the Department, the Secretary of State, and is available online at <http://azdeq.gov/VECS/Rulemaking>.
 - d. In determining whether a vehicle that operates on natural gas complies with the HC emissions standards in Table 2 of this Article, the results of the test shall be multiplied by 0.19, when an analyzer with a flame ionization detector is used or 0.61, when an NDIR analyzer is used.
 - e. Test Rejection. A vehicle shall be rejected from a loaded cruise and curb idle test, if the CO₂ plus CO reading during the curb idle test is less than 6%.
 - f. Test Failure. A vehicle fails the loaded cruise and curb idle test if tailpipe emissions measured by the test exceed the applicable standards in Table 2 for loaded cruise mode or curb idle mode for the type and model year of the vehicle being tested.
7. Two Speed Idle Test
- a. All two speed idle testing shall conform to the procedures listed at 40 CFR 51, Subpart S, Appendix B, Section II, amended as of July 1, 2017, and no future editions or amendments, which is incorporated by reference and on file with the Department, the Secretary of State, and is available online at <http://azdeq.gov/VECS/Rulemaking>.
 - b. All equipment used for two speed idle testing shall conform with the requirements of 40 CFR 51, Subpart S, Appendix A, Section I, amended as of July 1, 2017, and no future editions or amendments, which is incorporated by reference and on file with the Department.
 - c. Test Failure. A vehicle fails the two speed idle test if tailpipe emissions measured by the test exceed the applicable standards in Table 2 for the type and model year of the vehicle being tested.
8. Idle Test
- a. All idle testing shall conform to the procedures listed at 40 CFR 51, Subpart S, Appendix B, Section I, amended as of July 1, 2017, and no future editions or amendments, which is incorporated by reference and on file with the Department, the Secretary of State, and is available online at <http://azdeq.gov/VECS/Rulemaking>.
 - b. All equipment used for two speed idle testing shall conform with the requirements of 40 CFR 51, Subpart S, Appendix A, Section I, amended as of July 1, 2017, and no future editions or amendments, which is incorporated by reference and on file with the Department.
 - c. Test Failure. A vehicle fails the idle test if tailpipe emissions measured by the test exceed the applicable standards in Table 2 for the type and model year of the vehicle being tested.
9. Exhaust Sampling Requirements for Annual Tests on Non-Diesel Vehicles.
- a. All CO and HC emissions analyzers shall have water traps incorporated in the sampling lines. Sampling probes shall be capable of taking undiluted exhaust samples from a vehicle exhaust system.
 - b. A vehicle, other than a diesel-powered vehicle, shall be inspected with a gas analyzer capable of determining concentrations of CO and HC within the ranges and tolerances specified in Table 5.
 - c. A vehicle with multiple exhaust pipes shall be inspected by collecting and averaging samples by one of the following methods:

- i. Collecting separate samples from each exhaust pipe and use the average concentration to determine the test result;
 - ii. Using manifold exhaust probes to simultaneously sample approximately equal volumes from each exhaust pipe; or
 - iii. Using manifold exhaust pipe adapters to collect approximately equal volume samples from each exhaust pipe.
- 10. Snap Idle Test.
 - a. Snap Idle Test Procedure.
 - i. The Department shall test the vehicle with a procedure that conforms to Society of Automotive Engineers Recommended Practice J1667, February 1996, incorporated by reference and on file with the Department, the Secretary of State and is available online at <http://azdeq.gov/VECS/Rulemaking>. This incorporation by reference contains no future editions or amendments.
 - ii. All testing and test equipment shall conform to the J1667 Recommended Practice.
 - iii. The procedure shall use the corrections for ambient test conditions in Appendix B of the J1667 Recommended Practice for all tests.
 - iv. To expedite testing throughput, the Department may implement rapid testing procedures.
 - v. The test results shall be reported as the percentage of smoke opacity.
 - b. Snap Idle Test Failure.
 - i. Except as provided in subsection (C)(10)(c), a vehicle fails the snap idle test if the opacity of emissions exceeds the level specified in the following table:

Model Year	Standard
1991 or later	40%
1990 or earlier	55%

- ii. The engine model year is determined by the emission control label. If the emission control label is missing, illegible, or incorrect, the test standard shall be 40%, unless a correct, legible, emission control label replacement is attached to the vehicle within 30 days of the inspection.
 - c. Alternative Opacity Standard. The Director shall identify an alternative, less stringent opacity standard for an engine family if the conditions of either subsection (C)(10)(c)(i) or (C)(10)(c)(ii) are satisfied.
 - i. The engine family exhibits smoke opacity greater than the applicable standard in subsection (C)(10)(b)(i) when in good operating condition and adjusted to the manufacturer's specifications. If this condition is satisfied, the Director shall identify a technologically appropriate less stringent standard based on a review of data obtained from engines in good operating condition and adjusted to manufacturer's specifications.
 - ii. The engine family has been granted an exemption from a standard equivalent to the applicable standard in subsection (C)(10)(b)(i) based on the J1667 Recommended Practice by the executive officer of the California Air Resources Board (CARB). If this condition is satisfied, the Director shall allow the engine family to comply with any technologically appropriate less stringent standard identified by the executive officer of CARB.

- iii. A demonstration under subsection (C)(10)(c)(i) shall be based on data from at least three vehicles. Data from official inspections under this subsection (C)(10) showing that vehicles in the engine family meet the standard may be used to rebut the demonstration.
 - iv. The Director shall implement any new standard resulting from each exemption as soon as practicable for all subsequent tests and provide notice at all affected test stations and fleets.
- 11. Loaded Opacity A Test.
 - a. Test Procedure.
 - i. The vehicle shall be tested on a chassis dynamometer beginning with no power absorption by selecting a gear ratio that produces a maximum vehicle speed of 30-35 MPH at governed or maximum rated RPM.
 - ii. If the vehicle has a manual transmission or an automatic transmission with individual gear selection, the engine shall be operated at governed or maximum rated engine RPM, at normal operating temperature under a power absorption load applied to the dynamometer until the loading reduces the engine RPM to 80% of the governed speed at wide-open throttle position.
 - iii. If the vehicle has an automatic transmission and automatic gear kickdown, the engine shall be loaded to a speed just above the kickdown speed or 80% of the governed speed, whichever is greater.
 - iv. If the chassis dynamometer does not have enough horsepower absorption capability to lug the engine down to these speeds, the vehicle's brakes may be used to assist the dynamometer.
 - b. Test Failure. A vehicle fails the test if the opacity reading for a period of 10 consecutive seconds exceeds the applicable standard in R18-2-1030(B).
- 12. Loaded Opacity B Test.
 - a. Test Procedure. The vehicle shall be tested by a loaded dynamometer test by applying a single load of 30 HP, \pm 2 HP, while operated at 50 MPH.
 - b. Test Failure. A vehicle fails the test if the opacity reading for a period of 10 consecutive seconds exceeds the applicable standard in R18-2-1030(B).
- 13. Loaded Opacity C Test.
 - a. Test Procedure. The vehicle shall be tested by a loaded dynamometer test by applying a single load of between 6.4 - 8.4 HP while operated at 30 MPH.
 - b. Test Failure. A vehicle fails the test if the opacity reading for a period of 10 consecutive seconds exceeds the applicable standard in R18-2-1030(B).
- 14. Exhaust Sampling Requirements for Diesel Vehicles Tests other than the Snap Idle Test.
 - a. For a diesel-powered vehicle equipped with multiple exhaust pipes, separate measurements shall be made on each exhaust pipe. The reading taken from the exhaust pipe that has the highest opacity reading shall be used for comparison with the standard in R18-2-1030(B).
 - b. A vehicle shall be inspected with either a full-flow or sampling-type opacity meter. The opacity meter shall be a direct reading, continuous reading light extinction-type using a collimated light source and photo-electric cell, accurate to a value within \pm 5% of filter value.
- 15. Functional Gas Cap Test.
 - a. Test Procedure.
 - i. The vehicle shall undergo a functional test of the gas cap to determine cap leakage.
 - ii. A vehicle with a non-sealing gas cap shall be checked for the presence of a properly fitting gas cap.

- b. Exemption. A vehicle with a vented fuel system is exempt from this subsection.
 - c. Test Failure.
 - i. A vehicle fails the test if cap leakage exceeds 60 cubic centimeters of air per minute at a pressure of 30 inches of water gauge.
 - ii. Notwithstanding subsection 18-2-1006(C)(15)(c)(i), a vehicle does not fail the test if the failing cap is immediately replaced at the state station by a gas cap that satisfies the requirements of this subsection.
16. Tampering Inspection.
- a. The inspection shall be based on the original configuration of the vehicle as manufactured. The Department shall verify the applicable emissions system requirements shall be verified by the “Vehicle Emission Control Information” label. “Original configuration” for a foreign manufactured vehicle means the design and construction of a vehicle produced by the manufacturer for original entry and sale in the United States.
 - b. The Department's tampering inspection shall consist of the following:
 - i. A visual inspection to determine the presence and proper installation of each required catalytic converter system or OEM equivalent;
 - ii. An examination to determine the presence of an operational injection system, if applicable;
 - iii. A visual inspection to determine the presence of an operational positive crankcase ventilation system or closed crankcase ventilation system, if applicable; and
 - iv. A visual inspection to determine the presence of an operational evaporative control system, if applicable.
17. Visual Gas Cap Test.
- a. The visual gas cap test consists of the inspector's ocular verification that a gas cap is properly fitted to the vehicle.
18. Testing Vehicles that Operate on More than One Fuel.
- a. A vehicle, other than a vehicle for which an OBD test is required, designed to operate on more than one fuel, shall be tested on the fuel in use when the vehicle is presented for inspection, except vehicles that operate on alternative fuel, as defined in A.R.S. § 1-215.
19. Testing Vehicles that Operate on Alternative Fuels.
- a. The inspector shall test vehicles that operate on an alternative fuel, as defined in A.R.S. § 1-215, other than a vehicle for which an OBD test is required, on each fuel that the vehicle is intended to operate on, using the appropriate emissions test procedure and standards for that vehicle.
 - b. The vehicle shall be operated for a minimum of 30 seconds after switching fuels and before testing begins. The vehicle shall be rejected for testing if it is not able to operate on each fuel that the vehicle is intended to operate on or if the vehicle operator cannot switch fuels.
 - c. A vehicle that operates exclusively on propane or natural gas, as defined in A.R.S. § 1-215, shall be exempt from the functional gas cap test in subsection 10-2-1006(C)(15) and the evaporative pressure system test in subsection 10-2-1006(C)(5)(b).