

5. Leak detection equipment standards shall be as follows:

- i. The leak detection equipment shall be certified as safe for operation in explosive atmospheres;
- ii. The monitoring instrument detector shall be capable of measuring the leak definition concentration specified in the appropriate section in N.J.A.C. 7:27-16. Detector types meeting this requirement include but are not limited to catalytic oxidation, flame oxidation, infrared absorption and photoionization; and
- iii. The instrument shall be readable to within five percent of the specific leak concentration and shall have a response time of 30 seconds or less.

(e) The procedure for this section shall be as follows:

1. Mount the positive displacement meter to the top of the atmospheric vent of the storage tank(s). If the vent has restriction, remove the restriction before mounting the meter;
2. Connect the manometer and thermocouple to the taps on the meter;
3. Connect tank truck fuel and vapor return hoses to the underground storage tanks in accordance with procedures outlined by the manufacturer;
4. Check the tank truck and all vapor return line connections with a leak detection instrument for a tight seal before and during the test;
5. Record the initial reading of the gas meter(s);
6. Start the transfer of gasoline to the storage tank(s) in accordance with facilities' established normal procedures;
7. Record temperature, pressure, and gas meter readings at two minute intervals;
8. Record at the start and the end of the test the barometric pressure and ambient temperature;
9. Disconnect the tank truck hoses from the storage tank in accordance with the procedures outlined by the facility when the transfer has been completed;
10. Continue to record temperature, pressure, and gas meter readings at the underground storage tank vent(s) at two-minute intervals for a period of ten minutes after the completion of the gasoline transfer;
11. Record the final reading of the gas meter;
12. Record the total volume of gasoline that was transferred; and
13. Disconnect the positive displacement meter from the atmospheric vent.

(f) Calculate the efficiency of the vapor recovery system using the following equation:

$$E = 1 - \frac{V_v (7.481) (T_s + 460) (P_b)}{V_T (T_v + 460) (29.92)} \times 100$$

Where:

E = Percent efficiency of the vapor recovery system at standard conditions.

$V_v$  = Volume of displaced vapors vented from the atmospheric vent in actual cubic feet (ACF).

$V_T$  = Volume of gasoline transferred to storage tanks in gallons.

$T_v$  = Temperature of vapors vented from atmospheric vent in degrees Fahrenheit.

$T_s$  = Standard temperature (70°F).

$P_b$  = Average barometric pressure during test in inches of mercury.

7.481 = Conversion factor of gallons per cubic foot (Gal/ft<sup>3</sup>).

29.92 = Standard pressure in inches of mercury.

(g) The test report shall include the following information submitted on the required reporting forms listed in Appendix H. (Any alternative report form shall be submitted to the Department for review pursuant to N.J.A.C. 7:27B-3.2(c) and (e)):

1. A dimensioned sketch of the sampling location detailing number of storage tanks, type of fill pipe; and type of vapor recovery system;
2. The total amount of each type of gasoline transferred;
3. The size of the storage tank(s) into which the gasoline was transferred;
4. The total amount of gasoline present in the storage tank(s) prior to transfer;
5. Pressure/vacuum test date listed on the tank truck; and
6. Identification of the tank truck.

#### 7:27B-3.17 Procedures for the determination of volatile organic compounds emitted from petroleum solvent dry cleaning operations

(a) The method in this section is applicable for the determination of the final recovered solvent flow rate at the completion of the recovery cycle, and the VOC content in all filtration waste. For the same circumstances as described above, any alternative method shall be submitted to the Department for review, pursuant to N.J.A.C. 7:27B-3.2(c), (d), and (e).

(b) This method is based upon:

1. The determination of the volume of the recovered solvent; and
2. The separation and weight determination of the solvent.

(c) The following is a summary of this method:

1. The recovered solvent is diverted to a graduated cylinder at the end of the recovery cycle. The volume of solvent recovered during a one minute period is measured and recorded.
2. The recovered solvent is separated from other filtration waste and weighed.

(d) The procedure for this section shall be as follows:

1. Recovered solvent shall be determined as follows:
  - i. The flow rate of the recovered solvent is measured at the outlet of the solvent-water separator;
  - ii. The flow rate of the recovered solvent is measured at the end of the solvent recovery phase;
  - iii. Divert the flow of the recovered solvent to a graduated cylinder;
  - iv. Record the volume of recovered solvent to the nearest milliliter, after a one minute interval;
  - v. Record the type of articles cleaned and the length of the recovery cycle; and
  - vi. Repeat steps i-v over three cleaning cycles.
2. The solvent content in filtration waste shall be determined as follows:
  - i. Collect three one-kilogram samples of still and filtration waste in air-tight containers which are impervious to petroleum solvents;
  - ii. Record the total mass of articles in kilograms cleaned since the last still boildown or filter change;
  - iii. Record the total mass of still and filter water in kilograms produced since the last waste removal;
  - iv. Determine the solvent content of the still and filter water using the procedure specified in ASTM D322-80, "Standard Test Method for Gasoline Diluent in Used Gasoline Engine Oils by Distillation" (N.J.A.C. 7:27B-3.18, Reference 15); and
  - v. Report the results as mass of VOC per mass of dry weight of articles dry cleaned in kilograms per kilogram.

Amended by R.1992 d.102, effective March 2, 1992 (operative March 28, 1992).

See: 23 N.J.R. 1858(b), 24 N.J.R. 792(a).

"VOS" replaced by "VOC".

#### 7:27B-3.18 Test methods and sources incorporated by reference

(a) The following sources and test methods are incorporated by reference in this subchapter:

1. New Jersey Administrative Code Title 7, Chapter 27B-1, AIR TEST METHOD 1 is available from New Jersey Department of Environmental Protection, John Fitch Plaza, CN 027, Trenton, New Jersey 08625. (Free)
2. Code of Federal Regulations, Title 29, Chapter XVII, Parts 1910 and 1926 are available from the Occupational Safety and Health Administration, U.S. Department of Labor, 1515 Broadway, New York, New York 10036.
3. Code of Federal Regulations, Title 40, Part 80, Appendix E—"Method 1—Dry RVP Measurement Method" and "Method 2—Herzog Semi-Automatic Method" are available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.
4. ASTM Designation D2879-75, Standard Method for Test for Vapor Pressure—Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (\$4.00).
5. API (American Petroleum Institute) Bulletin 2517, Selecting the Proper Nomograph, 156 William Street, New York, New York 10038.
6. ASTM Designation D2551-80, Standard Method of Test for Vapor Pressure of Petroleum Products (micro-method), American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (\$4.00).
7. ASTM Designation D1475-60, Standard Method of Test for Density of Paint, Varnish, Lacquer, and Related Products, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (\$4.00).
8. ASTM Designation D2369-81, Standard Method of Test for Volatile Content of Coatings, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (\$4.00).
9. ASTM Designation D4017-81, Standard Test Method for Water in Paints and Paint Materials by Karl Fischer Titration Method, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103. (\$4.00)
10. ASTM Designation D402-76, Standard Test Method for Distillation of Cut-Back Asphaltic (Bituminous) Products, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (\$4.00).
11. ASTM Designation D-70-76, Standard Test Method for Specific Gravity of Semi-Solid Bituminous Materials, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (\$4.00).

12. ASTM Designation D2698-73, Standard Test Method for the Determination of the Pigment Content of Solvent Reducible Paints by High Speed Centrifuging, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (\$4.00).

13. ASTM Designation D95-83, Standard Method for Determining Water in Petroleum and Bituminous Materials by Distillation, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (\$4.00).

14. Method 2-1 California Air Resources Board, Test Procedures for Determining the Efficiency of Gasoline Vapor Recovery Systems at Service Stations. Available from State of California, Air Resources Board, 1102 Q Street, Sacramento, California 95812.

15. ASTM Designation D322-80, Standard Test Method for Gasoline Diluent in Used Gasoline Engine Oils by Distillation, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (\$4.00).

16. Code of Federal Regulations, Title 40, Part 60—Reference Methods 2A and 2B are available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

Amended by R.1992 d.102, effective March 2, 1992 (operative March 28, 1992).

See: 23 N.J.R. 1858(b), 24 N.J.R. 792(a).

Repealed and replaced (a)3 regarding vapor pressure measurement methods.

Editor's Note: In addition to the above text, Appendices A through H were filed with these rules, but not reproduced herein. Further information regarding these Appendices may be obtained by contacting:

Bureau of Technical Services  
Division of Environmental Quality  
Department of Environmental Protection  
CN 411 (380 Scotch Road)  
Trenton, New Jersey 08625-0411

#### SUBCHAPTER 4. AIR TEST METHOD 4: TESTING PROCEDURES FOR MOTOR VEHICLES

##### Authority

N.J.S.A. 13:1D-5, 13:1D-9, 26:2C-8, 26:2C-8.1,  
26:2C-8.2 and 26:2C-8.5.

##### Source and Effective Date

R.1985 d.3, effective January 21, 1985 (operative July 1, 1985).  
See: 16 N.J.R. 2894, 17 N.J.R. 184(a).

#### 7:27B-4.1 Definitions

The following words and terms, when used in this subchapter, have the following meanings, unless the context clearly indicates otherwise.

"Alternative smoke opacity standard" means the smoke opacity standard applicable to a specific vehicle-engine-chassis combination, as determined by the procedure set forth at N.J.A.C. 7:27B-4.13.

"California Air Resources Board" or "CARB" means the agency of the State of California established and empowered to regulate sources of air contaminant emissions, including motor vehicles, pursuant to California Health and Safety Code, Sections 39500 et seq.

"Carbon monoxide" or "CO" means a gas having a molecular composition of one carbon atom and one oxygen atom.

"Certified configuration" means a heavy-duty diesel engine design or a light-duty diesel-powered motor vehicle-engine-chassis design certified by either of the following agencies as meeting the applicable emission standards for heavy-duty diesel engines or light-duty diesel-powered motor vehicles manufactured in a given model year:

1. EPA, for model year 1971 or for a more recent model year heavy-duty diesel vehicle engine;
2. EPA, for model year 1968 or for a more recent model year light-duty diesel vehicle;
3. CARB, for model year 1973 or for a more recent model year heavy-duty diesel vehicle engine; or
4. CARB, for model year 1966 or for a more recent model year light-duty diesel vehicle.

"Chassis dynamometer" or "dynamometer" means a power absorption device utilizing a set of rollers on which a motor vehicle is driven to simulate on-road vehicle operation.

"Commissioner" means the Commissioner of the Department of Environmental Protection.

"Crankcase emissions" means substances emitted into the atmosphere from any portion of the engine crankcase ventilation or lubrication system.

"Department" means the New Jersey Department of Environmental Protection.

"Dew point" means the temperature to which air must be cooled for saturation to occur.

"Diesel bus" means any diesel-powered autobus or motorbus of any size or configuration, whether registered in this State or elsewhere, that is designed or used for intrastate or interstate transportation of passengers for hire or otherwise

on a public road, street or highway or any public or quasi-public property in this State, including, but not limited to, autobuses under the jurisdiction of the New Jersey Department of Transportation pursuant to Titles 27 or 48 of the Revised Statutes; autobuses of the New Jersey Transit Corporation and its contract carriers that are under the inspection jurisdiction of the New Jersey Department of Transportation; autobuses that are subject to Federal motor carrier safety regulations; autobuses under the authority of the Interstate Commerce Commission or its successor agency; school buses, as defined pursuant to N.J.S.A. 39:1-1; and hotel, casino, charter, and special buses.

"Diesel emissions inspection center" or "DEIC" means a facility licensed by the Division of Motor Vehicles pursuant to N.J.S.A. 39:8-69 and N.J.A.C. 13:20-47.

"Diesel engine" means a compression ignition type of internal combustion engine.

"Diesel-powered" means utilizing a diesel engine.

"Division of Motor Vehicles" or "DMV" means the Division of Motor Vehicles within the New Jersey Department of Transportation.

"Element of design" means any part or system on a motor vehicle or a motor vehicle engine pertaining to the vehicle's or engine's certified configuration.

"Emission control apparatus" means any device utilized by the vehicle manufacturer and/or the engine manufacturer to control the emission of any regulated emission, including any associated component which monitors the function and maintenance of such a device.

"Engine RPM rise time" means the time period, in seconds, during acceleration between curb idle and high idle.

"EPA" means the United States Environmental Protection Agency.

"Exhaust aftertreatment" means any element of design which affects or alters the molecular content of the exhaust emissions of a diesel engine.

"Exhaust emissions" means the emissions (including any liquid or solid particles in the gaseous stream) released into the atmosphere from any opening downstream from the exhaust ports of a motor vehicle engine.

"Exhaust leak" means any condition of the exhaust system which permits exhaust emissions to escape into the atmosphere at any point between the exhaust ports of a motor vehicle engine and the outlet of the engine exhaust pipe.

"Full-flow smokemeter" means a smokemeter which measures smoke opacity by passing a beam of light through the axis of the exhaust plume as the exhaust exits the tailpipe of a motor vehicle.

"Gasoline-fueled" means powered by a hydrocarbon fuel other than diesel fuel, including, but not limited to, gasoline, natural gas, liquified petroleum gas, or propane or powered by alcohol fuels, hydrocarbon-alcohol fuel blends or hydrogen.

"Governor" means a mechanism installed on a diesel engine by the original equipment manufacturer for the purpose of limiting the maximum engine RPM.

"Gross combination weight rating" or "GCWR" means the GVWR of a combination (articulated) vehicle, which is defined as the GVWR of the power unit plus the GVWR of the towed unit or units.

"Gross vehicle weight rating" or "GVWR" means the value specified by the vehicle manufacturer as the maximum loaded weight of a single or combination vehicle. When used in connection with a combination or articulated vehicle, GVWR refers to the "gross combination weight rating" or "GCWR" of the combination or articulated vehicle, which is defined as the GVWR of the power unit plus the GVWR of the towed unit or units.

"Heavy-duty diesel vehicle" or "HDDV" means a diesel-powered motor vehicle other than a diesel bus that has a GVWR exceeding 8,500 pounds and is designed primarily for transporting persons or property.

"Heavy-duty gasoline-fueled vehicle" or "HDGV" means a gasoline-fueled motor vehicle that has a GVWR exceeding 8,500 pounds and is designed primarily for transporting persons or property.

"High idle" means the highest engine speed obtainable when the engine is disengaged from the transmission and is free-wheeling.

"High speed diesel engine" means any heavy-duty diesel engine with a maximum governed engine speed over 2,800 RPM.

"Hydrocarbons (HC)" means any compound or mixture of compounds whose molecules consist of atoms of hydrogen and carbon only.

"Idle" means an operating mode where the vehicle engine is not engaged in gear and where the engine operates at a speed at the revolutions per minute specified by the engine or vehicle manufacturer.

"Idle mode" means the vehicle test mode of the prescribed inspection test procedure, consisting of a non-loaded, throttled engine speed at the revolutions per minute specified by the manufacturer.

"Inertia weight" means the vehicle curb weight plus 300 pounds.

"Inspector" means any person authorized by the State of New Jersey to determine whether a vehicle complies with the requirements of N.J.A.C. 7:27-14.

"Light-duty diesel vehicle" or "LDDV" means a diesel-powered motor vehicle, other than a diesel bus, that has a GVWR of 8,500 pounds or less and is designed primarily for transporting persons or property.

"Light-duty gasoline-fueled vehicle" or "LDGV" means a gasoline-fueled motor vehicle that has a GVWR of 8,500 pounds or less, is designed primarily for use as a passenger car or is a passenger car derivative and is capable of seating no more than 12 passengers.

"Light-duty gasoline-fueled truck" or "LDGT" means a gasoline-fueled motor vehicle that has a GVWR of 8,500 pounds or less, a vehicle curb weight of 6,000 pounds or less, and a basic frontal area of 45 square feet or less, and that is:

1. Designed primarily for the transportation of property or more than 12 passengers; or
2. Available with special features enabling off-street or off-highway operation and use.

"Light-duty gasoline-fueled truck 1" or "LDGT1" means a light-duty gasoline-fueled truck with a GVWR of 6,000 pounds or less.

"Light-duty gasoline-fueled truck 2" or "LDGT2" means a light-duty gasoline-fueled truck with a GVWR of more than 6,000 pounds.

"Low idle" or "curb idle" means the minimum operating speed of an engine with the accelerator pedal released and the transmission disengaged, as specified by the engine manufacturer.

"Low speed diesel engine" means any heavy-duty diesel engine with a maximum governed engine speed of no more than 2,200 RPM.

"Maximum governed RPM" means, for an engine which has a functioning governor, the manufacturer's recommended maximum engine speed as restricted by the governor. For an engine which does not have a functioning governor, this term means a value of 80 percent of the manufacturer's recommended maximum engine speed.

"Measurement path" means the linear path between the sending and receiving points of a full-flow smokemeter.

"Medium speed diesel engine" means any heavy-duty diesel engine with a governed engine speed of 2,201 RPM to 2,800 RPM.

"Motor vehicle" means all vehicles propelled otherwise than by muscular power, excepting motorized bicycles and such vehicles as run only upon rails or tracks.

"Motor vehicle emission testing equipment" means equipment used to conduct a test of a gasoline-fueled motor vehicle set forth at N.J.A.C. 7:27B, and which satisfies all applicable specifications set forth at N.J.A.C. 7:27B-4.14, Specifications for motor vehicle emission testing equipment for use in the New Jersey Enhanced Inspection and Maintenance Program. For motor vehicle inspections conducted pursuant to N.J.A.C. 7:27-15 and this subchapter, this term shall include all devices used for performing a motor vehicle inspection, including, but not limited to, exhaust gas analyzers, evaporative pressure testing apparatus, evaporative purge testing apparatus, dynamometers, computers and related software.

"Motorized bicycle" means a pedal bicycle having a helper motor characterized in that either the maximum piston displacement is less than 50 cubic centimeters, or said motor is rated at no more than 1.5 brake horsepower and said bicycle is capable of a maximum speed of no more than 25 miles per hour on a flat surface.

"MPH" means miles per hour.

"Neutral density filter" means a device used to calibrate or verify the accuracy of the raw opaque value within the measurement path of a smokemeter which consists of a lens of neutral particle density and which filters visible light to a known opacity value.

"Nominal stack size" means the exhaust pipe diameter to be used in conducting smoke opacity measurements to determine compliance with diesel smoke opacity standards, based on engine horsepower, as set forth in N.J.A.C. 7:27B-4.3 Table 1.

"Oil temperature probe" means a device integral to a smokemeter which measures the engine crankcase oil temperature.

"Opacity" means the property of a substance whereby it partially or wholly obstructs the transmission of visible light expressed as the percentage to which light is obstructed.

"Partial-flow smokemeter" means a smokemeter which samples, at frequent intervals, a representative portion of the total exhaust flow and directs it to a measurement cell, and which calculates smoke opacity based upon the sample smoke density and the diameter of the exhaust pipe.

"Particles" means any material, except uncombined water, which exists as liquid particles or solid particles at standard conditions.

"Peak smoke opacity" means the highest numerical value of smoke opacity measured during a snap acceleration smoke opacity test at N.J.A.C. 7:27B-4.3(a), a rolling accel-

eration smoke opacity test at N.J.A.C. 7:27B-4.3(b), or a stall smoke opacity test at N.J.A.C. 7: 27B-4.3(c).

"Regulated emission" means any solid, liquid or gaseous substance which is emitted from a motor vehicle or motor vehicle engine and which is regulated by the EPA pursuant to 40 C.F.R. Part 86.

"RPM" means revolutions per minute.

"RPM sensor" means a mechanism integral to the smokemeter which senses the engine speed in revolutions per minute.

"SAE J1667" means the recommended practice incorporated in document number J1667 published by the Society of Automotive Engineers in February 1996, entitled Snap-Acceleration Smoke Test Procedure for Heavy-Duty Diesel-Powered Vehicles, and all appendices attached thereto, incorporated herein by reference.

"Smoke" means the emissions, including airborne solid and/or liquid particles, exclusive of water vapor, released into the atmosphere from a process of combustion.

"Smokemeter" means smoke measurement equipment designed and manufactured in accordance with specifications set forth at N.J.A.C. 7:27B-4.15.

"Tailpipe" means the final downstream section of pipe in a motor vehicle's exhaust system.

"Vehicle curb weight" means the actual weight of a motor vehicle in operational status or the weight given by the manufacturer for such a vehicle. Such weight shall include the weight of all standard equipment, of the fuel at nominal tank capacity, and of optional equipment computed in accordance with 40 CFR section 86.082-24.

"Wide open throttle" or "WOT" means, in reference to a diesel-powered motor vehicle, the positioning of the primary engine power control to deliver maximum potential power and fuel. In most cases this is the positioning of the vehicle's accelerator control at its forward-most or downward-most position.

Emergency amendment R.1995 d.409, effective June 29, 1995 (expires August 28, 1995).

See: 27 N.J.R. 2752(a).

Adopted concurrent proposal, R.1995 d.527, effective August 28, 1995 (operative October 27, 1995).

See: 27 N.J.R. 2752(a), 27 N.J.R. 3806(a).

Amended by R.1997 d.283, effective July 7, 1997 (operative August 11, 1997).

See: 29 N.J.R. 726(a), 29 N.J.R. 2826(b).

Amended "Chassis dynamometer", "Gasoline-fueled", "Heavy-duty gasoline-fueled vehicle", "Hydrocarbons (HC)", "Idle", and "Motor vehicle emission testing equipment".

Amended by R.1997 d.393, effective September 15, 1997 (operative October 7, 1997).

See: 29 N.J.R. 971(a), 29 N.J.R. 4108(a).

Added "Alternative smoke opacity standard", "California Air Resources Board", "Certified configuration", "Dew point", "Diesel bus", "Diesel emissions inspection center", "Diesel engine", "Diesel-powered", "Division of Motor Vehicles", "Element of design", "Engine RPM hookup", "Exhaust aftertreatment", "Exhaust stack diameter", "Full-flow smokemeter", "Governor", "Light-duty diesel vehicle", "Low speed engine", "Maximum governed RPM", "Measurement path", "Neutral density filter", "Oil temperature probe", "Partial-flow smokemeter", "Particles", "Peak smoke opacity", "Regulated emission", "SAE J667", "Tailpipe" and "Wide open throttle"; deleted "Autobus", "Motor vehicle safety specialist" and "Prescribed inspection test procedure"; and amended "Department", "Emission control apparatus", "Exhaust emissions", "Gasoline-fueled", "Gross vehicle weight rating", "Heavy-duty diesel vehicle", "Idle", "Inspector", "Opacity", "Smoke", and "Smokemeter".

Amended by R.1998 d.309, effective July 6, 1998 (operative July 21, 1998).

See: 30 N.J.R. 901(a), 30 N.J.R. 2476(b).

Deleted "Engine RPM hookup", "Exhaust stack diameter" and "Operating mode"; inserted new "Gross combination weight rating" or "GCWR", "High idle", "High speed diesel engine", "Low idle" or "curb idle", "Medium speed diesel engine", "Nominal stack size" and "RPM sensor"; and rewrote "Gross vehicle weight rating" or "GCWR" and "Low speed diesel engine".

#### 7:27B-4.2 General instructions for all tests

(a) The general procedures which must be carried out in order for an emissions test conducted pursuant to any provision of this subchapter to be valid are as follows:

1. Prior to conducting an emissions test pursuant to this subchapter, ensure that the equipment is calibrated by checking and, if necessary, adjusting zero and span settings;
2. Prior to testing, verify that the smokemeter is calibrated in accordance with the manufacturer's requirements;
3. When testing a heavy-duty diesel vehicle, bring the engine to normal operating temperature by operating the vehicle on a highway or a chassis dynamometer with a road load for a minimum of 15 minutes. Confirm proper engine operating temperature by inserting an oil temperature probe through the oil dipstick tube into the crankcase oil, so that the oil temperature as measured during the test will be recorded as part of the analyzer printout at the conclusion of the test. Oil temperature shall be at least 70 degrees Celsius (160 degrees Fahrenheit), and water temperature shall be at least 82 degrees Celsius (180 degrees Fahrenheit) but not overheating;
4. Examine the vehicle's exhaust system for integrity. Tighten all loose pipe connections and repair all significant exhaust leaks before performing a test;
5. Prior to conducting a smoke opacity test on a diesel-powered motor vehicle equipped with multiple exhaust outlets, determine which exhaust outlet exhibits the highest opacity level by visually comparing the opacity level of each outlet during a single repetition of the snap acceleration test as set forth at N.J.A.C. 7:27B-4.3(a), if appropriate, or by liberally accelerating the engine at WOT, not to exceed maximum governed RPM. Conduct the testing using the highest-opacity exhaust outlet;