

# PROPOSED REGULATIONS

For information concerning Proposed Regulations, see Information Page.

## Symbol Key

Roman type indicates existing text of regulations. *Italic type* indicates proposed new text.  
Language which has been stricken indicates proposed text for deletion.

## TITLE 9. ENVIRONMENT

### STATE AIR POLLUTION CONTROL BOARD

**Title of Regulation:** 9 VAC 5-91. Regulations for the Control of Motor Vehicle Emissions in the Northern Virginia Area (amending 9 VAC 5-91-20, 9 VAC 5-91-160, 9 VAC 5-91-180, 9 VAC 5-91-740, 9 VAC 5-91-750, and 9 VAC 5-91-760, adding 9 VAC 5-91-741, 9 VAC 5-91-742, and 9 VAC 5-91-743).

**Statutory Authority:** §§ 46.2-1178.1, 46.2-1178.2 and 46.2-1180 of the Code of Virginia; § 182 of the federal Clean Air Act; 40 CFR Part 51, Subpart S.

**Public Hearing Date:** September 9, 2004 - 11 a.m.

Public comments may be submitted until 5 p.m. on October 8, 2004.

(See Calendar of Events section for additional information)

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**Basis:** Sections 46.2-1176 through 46.2-1187.3 of the Virginia Motor Vehicle Emissions Control Law authorize the State Air Pollution Control Board to promulgate regulations for the control of motor vehicle emissions and for emissions testing including remote sensing. Specifically, § 46.2-1178.1 of the Code of Virginia authorizes the board to establish by regulation on-road testing requirements. The legal requirements governing the content of the regulations are found in §§ 46.2-1178.1, 46.2-1178.2 and 46.2-1179 of the Code of Virginia.

**Purpose:** The purpose of the regulation is to require that motor vehicles undergo periodic emissions inspection and be maintained in compliance with emission standards for (i) the protection of public health and welfare, and (ii) the attainment and maintenance of the air quality standards. The proposed amendments are being made to conform to state law and federal Clean Air Act requirements for the testing of emissions, including remote sensing, from motor vehicles located or primarily operated in Northern Virginia.

**Substance:** The proposed amendments make a number of revisions to the remote sensing provisions of the regulation. These changes include: changes in some definitions, changes in some elements of the remote sensing testing applicability and program procedures and protocol as it pertains to gross polluters and clean car screening, changes to the remote sensing test standards, and changes in some enforcement and compliance procedures.

The new regulatory amendments would, in part, revise the existing provisions affecting the remote sensing of emissions

from motor vehicles located in or primarily operated in Northern Virginia (including out of area commuters) and the subsequent testing of those motor vehicles. Vehicles in or that operate primarily in the program area will be subject to remote sensing emission standards that include limits for not only carbon monoxide and hydrocarbons, as was included in the previous regulation, but also nitric oxide. Vehicles found to be significantly out of compliance with the standards (known as "gross emitters") will be required to have an out-of cycle inspection and if warranted, have the vehicle repaired. Finding and repairing these very dirty vehicles will improve the air quality in Northern Virginia. The regulation amendments also establish a program to subsidize repair costs of some vehicles identified by remote sensing as gross emitters.

#### Issues:

A. Public: The primary advantage to the general public is that air quality will improve due to the technical improvements of remote sensing being able to identify gross emitters and require their repair prior to the normal in-cycle inspection requirement. The change to the definition of motor vehicle, for example, will result in a more effective program with the need to inspect, via remote sensing, 1968 and newer model vehicles. Changes in testing procedures will result in faster yet more thorough inspections that translate into shorter lines at the testing facilities. Changes in certification requirements will mean repairs to vehicles that fail the test will be more effective.

Changes have been made to the exhaust emission standards for remote sensing. The new standards also include a standard for nitric oxide, a prime component of ozone. Vehicles that violate the new standards will be required to receive an out-of-cycle inspection and, if necessary, repair the vehicle or face civil charges. This will impact a number of vehicle owners whose vehicles fail the new remote sensing exhaust standards. Although it is a disadvantage that there will be expenses for repairs, there are also advantages to the vehicle owners in that needed repairs will increase vehicle fuel efficiency and enhance vehicle life, not to mention the improvement in air quality.

To assist with the cost of repair to the vehicles that violate the exhaust standards for remote sensing, sections have been added to address financial assistance for those vehicles: how it works, eligibility and application process.

B. Department: Most of the issues affecting the department are a result of either technical change in program operation or state requirements. Amendments due to technical changes in program operation include: (i) changes in the wording of some definitions, (ii) changes in some elements of the remote sensing testing procedure, (iii) changes in the timing and flexibility of some test standards and (iv) changes in some permitting and licensing procedures.

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Few disadvantages are associated with these regulatory changes. There will be additional data management as a result of the information generated by remote sensing testing; however, the current computer capabilities are more than adequate to address this issue.

The overwhelming advantage from remote sensing testing is the increased emission reductions and cleaner air for Virginia citizens and continued EPA approval of the Commonwealth's I/M program. Tightening the remote sensing exhaust emission standards will have a similar advantageous effect.

Comparison with Federal Requirements: The proposed regulation amendments are more restrictive than the applicable legal requirements. The exhaust standards for remote sensing include standards for nitric oxides; EPA requires only standards for carbon monoxide and hydrocarbons. In addition, the regulation provides for only one remote sensing measurement to constitute a violation beginning in 2005; previous requirements involved measurements from two different remote sensing locations.

Department of Planning and Budget's Economic Impact Analysis: The Department of Planning and Budget (DPB) has analyzed the economic impact of this proposed regulation in accordance with § 2.2-4007 H of the Administrative Process Act and Executive Order Number 21 (02). Section 2.2-4007 H requires that such economic impact analyses include, but need not be limited to, the projected number of businesses or other entities to whom the regulation would apply, the identity of any localities and types of businesses or other entities particularly affected, the projected number of persons and employment positions to be affected, the projected costs to affected businesses or entities to implement or comply with the regulation, and the impact on the use and value of private property. The analysis presented below represents DPB's best estimate of these economic impacts.

Summary of the Proposed Regulation. Sections 46.2-1176 through 46.2-1187.3 of the Code of Virginia authorize the State Air Pollution Control Board to promulgate regulations for the control of motor vehicle emissions and for emissions testing including remote sensing. Section 46.2-1177 of the Code of Virginia mandates that the Department of Environmental Quality administer an emissions inspection program. The program is to require biennial inspections of motor vehicles at permitted emissions inspection stations and could require additional inspections of motor vehicles that have been shown by on-road testing to exceed established emissions standards. Section 46.2-1178 of the Code of Virginia lays out the administration and scope of the emissions inspection program. The State Air Pollution Control Board is authorized in § 46.2-1178.1 of the Code of Virginia to promulgate regulations establishing on-road motor vehicle emissions testing requirements and in § 46.2-1179 of the Code of Virginia to adopt emissions standards necessary to implement the emissions inspection program.

The proposed regulation was adopted with minor differences as an emergency regulation on January 1, 2004. The proposed regulation (i) establishes new and updated remote sensing exhaust emission standards, (ii) requires that vehicles in or operating primarily in the program area be

subject to remote sensing emission standards not only for carbon monoxide and hydrocarbons, but also for nitric oxide, (iii) defines the phrase "operate primarily" for the purposes of remote sensing as a vehicle recorded in the program area by remote sensing equipment at least three times in a two-month period with no less than 30 days between the first and last reading, (iv) establishes that vehicles exceeding the standards two days in any 120-day period will be determined to have violated emissions standards, (v) allows for vehicles that have a high emitter index of greater than 75 and that exceed established standards once to be determined to have violated the emissions standards starting January 1, 2005, (vi) requires remote sensing measurements used to determine if a vehicle exceeds emissions standards to be taken at valid sites and only under conditions when the vehicle specific power indicator is between 3 and 22, (vii) amends the vehicle clean screening requirements of the existing regulation, and (viii) modifies operating procedures and the application of civil charges when a vehicle is determined to have violated emissions standards.

The proposed regulation also makes a number of Code of Virginia required changes such as establishing a program to subsidize the repair costs of some vehicles identified by remote sensing and expanding the model year coverage for vehicles subject to remote sensing to include 1968 and newer model vehicles. The regulation also includes additional language intended to clarify various aspects of the regulation.

Estimated economic impact.

Description of the regulation. The proposed regulation makes amendments to the existing regulation for the control of motor vehicle emissions in the Northern Virginia area (covering the counties of Arlington, Fairfax, Loudoun, Prince William, and Stafford and the cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park). The current regulation requires vehicles in or operating primarily in the area to report for biennial emissions inspections at permitted emissions inspection stations. Vehicles that fail the test are denied registration until they pass a retest or spend at least \$450 on emissions-related repairs. The current program also allows for the random testing of vehicles through roadside pullovers or remote sensing devices. Failing vehicles are required to report to an emissions inspection station for an out-of-cycle test.

The proposed regulation updates the remote sensing emissions standards used to determine whether a vehicle is in violation. According to the Department of Environmental Quality (DEQ), remote sensing emissions standards in the existing regulation are approximately 10 years old. The new standards being proposed are based on new technology that has become available since then and on information collected through two remote sensing pilot studies conducted in Virginia. The standards being proposed include exhaust emission standards for nitric oxide. The existing regulation established remote sensing standards for carbon monoxide and hydrocarbons. The northern Virginia area has been classified by the Environmental Protection Agency (EPA) as a severe ozone nonattainment area. Ozone is formed by a chemical reaction between volatile organic compounds, nitrogen oxides, and sunlight. Thus, by including standards for

nitric oxide, the proposed regulation is intended to identify vehicles emitting high amounts of nitric oxide, require them to receive an out-of-cycle inspection, and make the required repairs.

The new standards apply to all vehicles in or operated primarily in the northern Virginia area. The regulation defines operated primarily for the purposes of the remote sensing program as a vehicle recorded in the program area by remote sensing equipment at least three times in a two-month period, with no less than 30 days between the first and last reading. For the purposes of the biennial inspection, operated primarily is defined as a vehicle being recorded (through remote sensing and on-road testing) in the area at least three times in a two-week period. According to DEQ, applying the definition for biennial inspections would reduce the effectiveness of remote sensing in identifying dirty vehicles. Remote sensing would observe a very small sample of vehicles (and an even smaller sample of unique vehicles) three times in a two-week period. DEQ believes that expanding the time-period to two months will allow for the effective identification of high emitting vehicles and better enable the remote sensing program to meet its emissions reduction goals.

Vehicles will be determined to be in violation of the emissions standards if they exceed these standards two days in any 120-day period. Under the existing regulation, vehicles were determined to be in violation if they exceeded the standards two days in a 90-day period. The increase in time-period was based on concerns similar to those mentioned in the above paragraph. DEQ believes that requiring two readings exceeding the standards in a 90-day period reduces the effectiveness of the remote sensing program in identifying high emitters. Increasing the time-period to 120 days will allow for more effective identification of high emitters and more effective implementation of the remote sensing program. Starting January 1, 2005, the regulation allows DEQ to consider vehicles exceeding the standards once and with a high emitter index of above 75 to be in violation of the emissions standards. The high emitter index categorizes the probable emissions inspection failure rates of engine families and is calculated based on historical failure rates once vehicles have been identified through remote sensing. The decision to include this provision was based on the fact that, starting January 1, 2005, DEQ would have a full year's worth of data on which to base the high emitter index. According to DEQ, research shows that the high emitter index combined with remote sensing is very reliable in terms of identifying potential failures.

Remote sensing measurements that are used to determine whether a vehicle is in violation of emission standards are to be taken only under conditions when the vehicle specific power indicator is between 3 and 22. The vehicle specific power indicator adjusts remote sensing measurements for factors such as vehicle speed, acceleration, drag coefficient, tire rolling resistance, and roadway gradient. Not adjusting for these factors could result in readings that temporarily exceed established standards. Thus, use of the vehicle specific power indicator will reduce the number of false positives (i.e., the number of vehicles identified as high emitters through remote sensing who subsequently pass the confirmation test) and allow for more efficient identification of high emitting vehicles.

The proposed regulation amends the clean screen requirements in the existing regulation. Starting January 1, 2005, the proposed regulation allows up to 5.0% of vehicles measured during a 30-day period to be identified as candidates for clean screening. These vehicles will not be required to report for their next biennial inspection. Based on conversations with DEQ, the clean screen requirements are to be further modified following public comment. (i) The agency plans to clean screen only vehicles of the 1995 model year and older. Vehicles of 1996 model year and newer are deemed unsuitable for clean screening as there is a high probability that some of them will qualify for clean screening when in fact the malfunction indicator light is illuminated due to an emissions-related problem being detected. Based on remote sensing data from Illinois, clean screening 5.0% of 1996 and newer vehicles would lead to 3.0% of on-board diagnostic failures being exempted from the biennial inspection requirement. (ii) Moreover, the agency intends to provide clean screens for up to 5.0% of the cleanest cars in each model year group observed during a 30-day period. These vehicles would have to be recorded at least three times on three different days during a 120-day period, with each measurement not exceeding any of the established standards. At the end of each year, if the emissions reduction loss due to clean screening is less than 10% of total program emissions reduction, the percentage of cars clean screened will be raised. If, on the other hand, the emissions reduction loss due to clean screening is more than 10% of total program emissions reduction, the percentage will be reduced appropriately.

The proposed regulation also modifies operating procedures and the application of civil charges when a vehicle is determined to have violated emissions standards. For example, motor vehicle owners will be required to furnish proof that their vehicle passed a confirmation test or received a waiver within 30 days of a notice of violation of remote sensing emission standards in order to avoid paying civil charges. The existing regulation allows 90 days between the notice of violation and the imposition of the civil charge. Other changes to the operating procedures and the application of civil charges include changes to how the degree of violation and hence the civil charges are calculated and a provision allowing DEQ to require 1996 and newer model year vehicles to pass an exhaust test in addition to the on-board diagnostic test.

Finally, the proposed regulation also makes a number of Code of Virginia required changes. It establishes a financial assistance program to subsidize the repair costs of some vehicles identified by remote sensing. Qualified individuals will be able to receive up to 50% of the cost of emissions-related repairs or 50% of the waiver amount, after a minimum co-payment of \$100. It also expands the model year coverage for vehicles subject to remote sensing to include 1968 and newer model vehicles.

Estimated economic impact: The proposed change is likely to impose additional costs on vehicle owners and emissions inspection stations in terms of requiring increased inspections. Apart from the regular biennial emissions inspection, vehicles identified through remote sensing as high emitters will be required to report for an out-of-cycle

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confirmation test at a permitted emissions inspection station (vehicles required to report for the biennial inspection within 90 days of the remote sensing violation or vehicles that have received a waiver in the 12 months prior to the violation will not be required to report for an out-of-cycle emissions test). The cost of the confirmation test is to be borne by the emissions inspection station or the vehicle owner depending on whether the vehicle passes or fails the test. If a vehicle identified as a high emitter through remote sensing passes the confirmation test, the cost is to be borne by the emissions inspection station. If, on the other hand, a vehicle fails the confirmation test, the cost of the test is to be borne by the vehicle owner. According to DEQ, most service stations currently charge \$28 for an emissions inspection (the Code of Virginia caps the inspection fee at \$28).

Based on the 2002 remote sensing pilot study conducted in Virginia, it is estimated that approximately 2.0% of all vehicles observed through remote sensing are likely to meet the definition of operated primarily and be determined to violate the emission standards. DEQ expects that between 250,000 and 300,000 unique vehicles per year are likely to be remote tested. Assuming 300,000 vehicles are remote tested each year and 2.0% of them are required to report for an out-of-cycle test, approximately 6,000 vehicles per year will be required to report for an out-of-cycle emissions test. Of these, approximately 9.0% (or 540 vehicles) are likely to be registered outside the northern Virginia area and not subject to the biennial inspection program.<sup>1</sup> Of the remaining 5,460 vehicles, we can expect 12.5% to be due for a biennial inspection in the 90-day period following the remote sensing violation and thus be exempt from reporting for an out-of-cycle emissions inspection.<sup>2</sup> The number of vehicles applying and qualifying for waivers is not known. Assuming all vehicles registered outside the northern Virginia area and determined to be violating the remote sensing standards are required to report for an out-of-cycle inspection (540 vehicles) and 87.5% of all vehicles registered in the northern Virginia area and determined to be violating the remote sensing standards are required to report for an out-of-cycle inspection (4,778 vehicles), the proposed regulation will result in approximately 5,318 vehicles being required to report for an out-of-cycle inspection and additional inspection costs of \$148,904.

According to a study conducted by California, it is estimated that 8.0% (or 425 out of 5,318) of vehicles identified as high emitters through remote sensing are likely to pass the confirmation test.<sup>3</sup> Thus, emissions inspection stations are

likely to incur additional inspection costs of \$11,900 per year (the cost of 425 inspections at \$28 per inspection) and vehicles owners are likely to incur additional inspection costs of \$137,004 per year (the cost of 4,893 inspections at \$28 per inspection).

In addition to the cost of additional inspections, the proposed regulation is likely to impose additional repair costs on vehicle owners. Owners whose vehicles fail the confirmation test will be required to make appropriate repairs or undertake \$450 (in 1990 dollars) in repairs in order to qualify for a waiver. According to DEQ, the average cost of these repairs is approximately \$250. In the absence of this regulation, vehicles registered in the northern Virginia area would have to make these repairs during the course of the regular biennial inspection. By requiring the repairs to be made earlier, the proposed change is likely to impose some additional cost on vehicle owners. Repairs worth \$250 made a year early would cost the vehicle owner an additional \$11.35 (based on the average 1-year treasury rate over the past ten years of 4.54%). In the absence of this regulation, vehicles registered outside the northern Virginia area would not be required to make any emissions-related repairs. These vehicle owners will now have to incur the additional cost of making these repairs. As estimated above, approximately 540 (or 9.0%) of the 6,000 high emitting vehicles identified through remote sensing are likely to be registered outside the control area. Assuming an 8% rate of false positives, 497 of the 540 vehicles are likely to fail the confirmation test and be required to make appropriate repairs.<sup>4</sup> Thus, the additional repair-related cost imposed by the regulation is \$49,895 on vehicles registered in northern Virginia (an average cost of \$11.35 on 4,396 vehicle owners) and \$124,250 on vehicles registered outside northern Virginia (an average cost of \$250 on 497 vehicle owners).

The proposed regulation will also impose additional costs on the state. DEQ estimates that the remote sensing program will cost approximately \$300,000 per year for data collection. This includes the cost of obtaining and setting up the remote sensing units, hiring trained operators, analyzing data, and providing the Department of Motor Vehicles with the requisite information. DEQ is also likely to incur additional costs in terms of staff time and resources in overseeing the program. DEQ expects that one full-time position will be dedicated to the remote sensing and economic assistance program.

The proposed regulation is also likely to produce economic benefits. The adoption of this rule is likely to reduce emissions of ozone-causing compounds in the Northern Virginia area. According to DEQ, the proposed changes are estimated to reduce hydrocarbons and nitrogen oxide emissions by one-half of a ton per day during the high ozone summer months. Apart from identifying high emitting vehicles registered in the northern Virginia area and requiring them to be fixed in a timely fashion, the proposed regulation will also help identify

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<sup>1</sup> The 2002 Virginia remote sensing pilot study estimated that approximately 9% of vehicles operating primarily in the northern Virginia area were registered outside the control area.

<sup>2</sup> The 12.5% estimate is based on the assumption that the distribution of vehicles requiring inspections during any two-year period is uniform.

<sup>3</sup> The 2002 Virginia remote sensing pilot study estimated the percentage of false positives at 35%-40%. However, this estimate is likely to overstate the number of false positives. Vehicles violating the remote sensing standards were not immediately given an emissions test. Instead, the estimate was based on the pass/fail rate on emissions tests conducted in the six months following a vehicle's remote sensing violation. Factors such as vehicles being repaired or receiving engine tune-ups prior to taking the emissions test are likely to have raised the number of false positives. The California estimate is likely to be more reliable as it is based on the pass/fail rate of vehicles on exhaust emissions test administered immediately following a vehicle's violation of the remote sensing standards.

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<sup>4</sup> In making these estimates, it is assumed that vehicles registered outside the northern Virginia area are just as likely to be identified as high emitters and fail the confirmation test as vehicles registered in the area. However, it is likely that vehicles that have not been inspected on a biennial basis are more likely to be high emitters than those that are required to report for regular emissions testing.

high emitters who are not registered in the northern Virginia control area but are operating primarily in the control area. As mentioned above, the 2002 Virginia remote sensing pilot study estimated that 9.0% of all vehicles falling under the definition of operated primarily were registered outside the control area. These vehicles do not fall under the biennial inspection program and would not be required to be emissions tested. Thus, the proposed regulation is likely to reduce emissions by identifying approximately 497 high emitting vehicles registered outside the northern Virginia but operating primarily in the area and requiring them to be fixed.

The emissions reductions are likely to be beneficial to public health and welfare. According to EPA, exposure to ozone at the ground level can cause a number of respiratory problems such as irritation of the respiratory system, reduced operation of the lungs, inflammation and damage to the cells lining the lungs, and aggravation of existing lung problems. Repeated ozone exposure can cause permanent damage to children's developing lungs and accelerate the decline in lung function with age in adults. According to the U.S. Global Change Research Program, the best estimate of human health effects of ground-level ozone in the United States over the past 15 years is approximately \$7 billion per year. Thus, reducing the level of ozone will provide economic benefits in the future in terms of respiratory health problems and fatalities prevented (reflected in lower health care and other costs) and increased productivity.

The emissions reductions achieved by the implementation of this rule would also help Virginia avoid federal sanctions that would be imposed for violating the SIP (state implementation plan) provisions of the Clean Air Act. Effective March 23, 2003, the northern Virginia area was classified by EPA as a severe ozone non-attainment area as a result of emissions from both industrial sources and motor vehicles. The changes being proposed are additional measures to be incorporated into the SIP to bring emissions to a level at or below the ozone standard. Failure to prepare such a plan and/or failure to obtain EPA approval for such a plan could result in sanctions including the loss of federal funds for highways and other projects and/or more restrictive requirements for new industries. Moreover, the lack of an acceptable plan to get emissions below national ambient air quality standards could result in EPA promulgating and implementing an air quality plan for Virginia. Implementing the proposed rule would produce economic benefits by allowing Virginia to continue to receive federal funds and letting the state run its own air quality program.

The proposed change is also likely to produce additional benefits in terms of improved fuel efficiency and enhanced vehicle life. In the absence of the proposed regulation, vehicles identified as high emitters that are registered in the northern Virginia area would most likely have made the required repairs during the biennial inspection. Vehicles identified as high emitters that are registered outside the northern Virginia area would most likely not have made the required repairs until there were other problems that surfaced. According to DEQ, these repairs increase fuel efficiency and vehicle life. Thus, by requiring vehicles identified as high emitters to report for an out-of-cycle test and undertake all the

necessary repairs in a timely manner, the proposed regulation is likely to provide economic benefits to vehicle owners.

Finally, the clean screen provisions in the proposed regulation are likely to produce economic benefits. The clean screen provision is likely to result in fewer vehicles requiring biennial testing. Vehicles that are clean screened will not be required to report for the next biennial inspection following their clean screen notice. This will result in savings for vehicle owners. DEQ intends to issue clean screens to up to 5.0% of vehicles in each model year group. Based on the 2002 remote sensing pilot study conducted in Virginia, approximately 12% of vehicles observed through remote sensing (or 36,000 vehicles out of 300,000 unique vehicles observed in a year) were seen three or more times in a 60-day period.<sup>5</sup> Assuming 12% of vehicles are observed three or more times during a 120-day period (a conservative assumption) and 5.0% of these vehicles that are registered in northern Virginia are clean screened (assuming none of the measurements exceed established standards), it would result in 1,800 cars being exempted from the biennial inspection. Savings to vehicle owners would be \$50,400 per year. Moreover, to the extent that clean screening saves vehicle owners potential repair expenses and the time and effort spent in getting their vehicle emissions tested, the proposed change is likely to produce significant economic benefits. For example, the clean screen program operated by Missouri in the St. Louis area charges a clean screen fee that is equal to the emissions inspection fee. Despite this, Missouri had a clean screen notice redemption rate of 78% in 2002.

The proposed regulation will also result in a transfer of resources between vehicle owners and the state. The subsidy program provided for under the proposed regulation will result in the state subsidizing a portion of the cost of repairs incurred by qualifying vehicle owners. If emissions-related repairs are made under the biennial inspection program, vehicle owners are not be eligible for a subsidy. However, if the repairs are made under the remote sensing program, the state is required to provide a subsidy to qualified vehicle owners. The subsidy is up to 50% of the amount spent on emissions-related repairs or up to 50% of the waiver amount, after a \$100 co-payment. DEQ has currently budgeted between \$300,000 and \$350,000 for the subsidy program. The subsidy will defray some of the additional cost imposed on vehicle owners by the proposed regulation.

The net economic impact of the proposed change will depend on whether the additional costs of meeting the requirements of the proposed regulation are greater than or less than the benefits of doing so. The proposed regulation is likely to impose additional costs on vehicle owners, emissions inspection stations, and the state. Owners of vehicles registered in the northern Virginia area can expect to pay a total \$172,983 per year in additional inspection and repair-related costs. Owners of vehicles registered outside the northern Virginia area can expect to pay a total \$138,166 per year in additional inspection and repair-related costs. Some of the cost of emissions-related repairs will be subsidized by the

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<sup>5</sup> In order to be eligible for a clean screen, vehicles are required to have been observed by remote sensing at least three different times on three different days during a 120-day period.

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state. Inspection stations are likely to incur additional costs of \$11,900 per year due to false positives. The state is likely to incur costs of \$300,000 per year and the cost of one full-time position in administering and implementing the remote sensing program. However, the proposed regulation is also likely to produce economic benefits. It is likely to reduce ground-level ozone in the northern Virginia area and reduce some of its negative human health effects. It is likely to ensure that the state avoids federal sanctions and continues to receive federal funds and run its own air quality program. It is also likely to produce economic benefits for vehicle owners through enhanced fuel efficiency and vehicle life and through clean screening. A precise estimate of these benefits, and hence of the net economic impact of the proposed change, is not available at this time.

**Businesses and entities affected.** The proposed regulation is likely to affect vehicle owners who operate primarily (as defined by the regulation) in the northern Virginia area. Owners whose vehicles are registered in the northern Virginia area are likely to incur additional costs of \$172,983 per year in inspection and repair-related expenses. However, some of these owners are likely to receive clean screens, producing cost savings of over \$50,400 per year. Owners whose vehicles are registered outside the northern Virginia area are likely to incur additional costs of \$138,166 per year in additional inspection and repair-related costs. Qualifying vehicle owners registered in and outside the northern Virginia area will be eligible to receive a subsidy (currently budgeted at between \$300,000 and \$350,000 per year) to defray some of the cost of emissions-related repairs. Finally, by making emissions-related repairs, vehicle owners are likely to benefit from improved fuel efficiency and enhanced vehicle life.

The proposed regulation is likely to affect permitted emissions inspection stations. Inspection stations are likely to incur additional costs of \$11,900 per year due to false positives. In addition, they are also likely to incur losses of approximately \$50,400 through the clean screen program. However, permitted emissions inspection stations are likely to receive additional revenues of approximately \$311,149 in inspection and repair-related services.

DEQ expects the remote sensing program to measure 300,000 vehicles a year, with an expected failure rate of 2.0% (or 6,000 vehicles). Of these, approximately 4,396 vehicles are likely to be registered in the northern Virginia area and 497 vehicles are likely to be registered outside the northern Virginia area. Moreover, DEQ estimates that there are currently 392 permitted emissions inspection stations.

**Localities particularly affected.** The proposed regulation will affect the northern Virginia area covering the counties of Arlington, Fairfax, Loudoun, Prince William, and Stafford and the cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park. The localities are not expected to incur any additional costs in implementing the proposed regulation.

**Projected impact on employment.** The proposed regulation is not likely to have a significant impact on employment, especially as the labor market is not likely to be very slack in the northern Virginia area. To the extent that the proposed regulation encourages emissions inspection stations to hire

more people, it is likely to shift some workers into these jobs and away from other jobs.

**Effects on the use and value of private property.** The proposed regulation is likely to increase the costs associated with operating motor vehicles in the northern Virginia area. However, some of these costs are likely to be counter-balanced by the clean screens allowed for under this regulation, the provision of subsidies for low-income vehicle owners, improved fuel efficiency, and enhanced vehicle life. The proposed regulation is likely to have a positive effect on the use and value of emissions inspection stations. While it is likely to impose some additional costs on emissions inspection stations, the estimated increase in revenue through increased vehicle inspections and repairs is likely to outweigh the increased costs. Finally, the proposed regulation is also likely to have a positive effect on the use and value of property in the northern Virginia area. By lowering the amount of ground-level ozone and improving air quality, the proposed regulation is likely to raise property values in the northern Virginia area. The net effect of the proposed change on the use and value of private property cannot be precisely estimated at this time.

Agency's Response to the Department of Planning and Budget's Economic Impact Analysis: The department has reviewed the economic impact analysis prepared by the Department of Planning and Budget and has no comment.

## Summary:

*The proposed amendments make a number of revisions to conform to changes in Virginia law pertaining to remote sensing. In general, the regulation needs to be amended to reflect new emission standards for vehicles detected via remote sensing as well as criteria for conducting random testing of motor vehicle emissions, procedures to notify owners of test results, and assessment of civil charges for noncompliance with emissions standards in the current regulation.*

*Two specific changes to the regulation as a result of changes to the Code of Virginia include the change in the model year coverage for vehicles subject to remote sensing to include model year 1968 and newer model vehicles, and the requirement to establish a program to subsidize repair costs of some vehicles identified by remote sensing.*

## **9 VAC 5-91-20. Terms defined.**

"Aborted test" means an emissions inspection procedure that has been initiated by the inspector but stopped and not completed due to inspector error or a vehicular problem that prevents completion of the test. Aborted tests are not tests that cannot be completed due to a "failed/invalid" result caused by an exhaust dilution problem or an engine condition that prevents the inspection from being completed.

"Access code" means the security phrase or number which allows authorized station personnel, the department, and analyzer service technicians to perform specific assigned functions using the certified analyzer system, as determined by the department. Depending on the assigned function, the access code is a personal password, a state password or a service password. Access code is not an identification



number, but is used as an authenticator along with the identification number where such number is needed to perform specific tasks.

"Actual gross weight" means the gross vehicle weight rating (GVWR).

"Administrator" means the administrator of the U.S. Environmental Protection Agency (EPA) or an authorized representative.

"Affected motor vehicle" means any motor vehicle which:

1. Was manufactured or designated by the manufacturer as a model year less than 25 calendar years prior to January 1 of the present calendar year according to the formula, the current calendar year minus 24, *except those identified by remote sensing as specified in subdivision 5 of this definition;*

2. Is designed for the transportation of persons or property;

3. Is powered by an internal combustion engine; and

4. For the Northern Virginia Emissions Inspection Program, has an actual gross weight of 10,000 pounds or less; and

5. *For vehicles subject to the remote sensing requirements of 9 VAC 5-91-180, was designated by the manufacturer as model year 1968 or newer.*

The term "affected motor vehicle" does not mean any

1. Vehicle powered by a clean special fuel as defined in § 58.1-2101 of the Code of Virginia, provided the federal Clean Air Act permits such exemptions for vehicles powered by clean special fuels;

2. Motorcycle;

3. Vehicle ~~which~~, *that* at the time of its manufacture, was not designed to meet emissions standards set or approved by the federal government;

4. Any antique motor vehicle as defined in § 46.2-100 of the Code of Virginia and licensed pursuant to § 46.2-730 of the Code of Virginia;

5. Firefighting equipment, rescue vehicle, or ambulance;

6. Vehicle for which no testing standards have been adopted by the board; or

7. Tactical military vehicle.

"Air intake systems" means those systems ~~which~~ *that* allow for the induction of ambient air (to include preheated air) into the engine combustion chamber for the purpose of mixing with a fuel for combustion.

"Air pollution" means the presence in the outdoor atmosphere of one or more substances which are or may be harmful or injurious to human health, welfare or safety; to animal or plant life; or to property; or which unreasonably interfere with the enjoyment by the people of life or property.

"Air Pollution Control Law" means Chapter 13 (§ 10.1-1300 et seq.) of Title 10.1 of the Code of Virginia.

"Air system" means a system for providing supplementary air to promote further oxidation of hydrocarbons and carbon monoxide gases and to assist catalytic reaction.

"Alternative fuel" means an internal combustion engine fuel other than (i) gasoline, (ii) diesel, or (iii) fuel mixtures containing more than 15% volume of gasoline.

"Alternative method" means any method of sampling and analyzing for an air pollutant that is not a reference method, but that has been demonstrated to the satisfaction of the board, in specific cases, to produce results adequate for its determination of compliance.

~~"ASM" means Acceleration Simulation Mode testing which is~~ *(ASM) test" means* a dynamometer-based emissions test performed in one or more, discreet, simulated road speed and engine load modes, and equipment which can be used to perform any such test.

"Authorized personnel" means department personnel, an individual designated by analyzer manufacturer, station owner, licensed emissions inspector, station manager or other person as designated by the station manager.

"Basic engine systems" means those parts or assemblies which provide for the efficient conversion of a compressed air and fuel charge into useful power to include but not limited to valve train mechanisms, cylinder head to block integrity, piston-ring-cylinder sealing integrity and post-combustion emissions control device integrity.

"Bi-fuel" means any motor vehicle capable of operating on one of two different fuels, usually gasoline and an alternative fuel, but not a mixture of the fuels. That is, only one fuel at a time.

"Board" means the State Air Pollution Control Board or its designated representative.

"Calibration" means establishing or verifying the response curve of a measurement device using several different measurements having precisely known quantities.

"Calibration gases" means gases of precisely known concentrations that are used as references for establishing or verifying the response curve of a measurement device.

"Canister" means a mechanical device capable of adsorbing and retaining hydrocarbon vapors.

"Catalytic converter" means a post combustion device ~~which~~ *that* oxidizes hydrocarbons, carbon monoxide gases, and may also reduce oxides of nitrogen.

"Certificate of emissions inspection" means a document, device, or symbol, whether recorded in written or electronic form, as prescribed by the director and issued pursuant to this chapter, which indicates that (i) an affected motor vehicle has satisfactorily complied with the emissions standards and passed the emissions inspection provided for in this chapter; (ii) the requirement of compliance with the emissions standards has been temporarily waived; or (iii) the affected motor vehicle has failed the emissions inspection.

"Certified emissions repair facility" means a facility, or portion of a facility, that has obtained a certification in accordance

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with Part VII (9 VAC 5-91-500 et seq.) to perform emissions related repairs on motor vehicles.

"Certified emissions repair technician" means a person who has obtained a certification in accordance with Part VIII (9 VAC 5-91-550 et seq.) to perform emissions related repairs on motor vehicles.

"Certified enhanced analyzer system" or "analyzer system" means the complete system that samples and reads concentrations of hydrocarbon, carbon dioxide, ~~nitrogen~~ *nitric* oxides and carbon monoxide gases and that is approved by the department for use in the Enhanced Emissions Inspection Program in accordance with Part X (9 VAC 5-91-640 et seq.). The system includes the exhaust gas handling system, the exhaust gas analyzer, evaporative system pressure test equipment, associated automation hardware and software, data media, the analyzer system cabinet, the dynamometer and appurtenant devices, vehicle identification equipment, and associated cooling and exhaust fans and gas cylinders.

"Certified thermometer" means a laboratory grade ambient temperature-measuring device with a range of at least 20°F through 120°F, and an attested accuracy of at least 1°F with increments of 1°, with protective shielding.

"Chargeable inspection" means a completed inspection on an affected motor vehicle, for which the station owner is entitled to collect an inspection fee. No fee shall be paid for (i) inspections for which a certificate of emissions inspection has not been issued, (ii) inspections that are conducted by the department for referee purposes, (iii) inspections which were ordered due to on-road test failures but which result in an emissions inspection "pass" at an inspection station, or (iv) the first reinspection done at the same station that performed the initial inspection within 14 days. An inspection ordered by the department due to an on-road test failure ~~and~~ that results in ~~an emissions inspection~~ a *confirmation test* failure at the ~~an~~ emissions inspection station is a chargeable inspection.

*"Confirmation test" means an emissions inspection required due to a determination that the vehicle exceeds the exhaust emissions standards prescribed in Table III-B in 9 VAC 5-91-180 for on-road testing through remote sensing. The confirmation emissions inspection procedure may include an exhaust test (ASM or TSI), OBD system test or both.*

"Consent order" means a mutual agreement between the department and any owner, operator, emissions inspector, or emissions repair technician that such owner or other person will perform specific actions for the purpose of diminishing or abating the causes of air pollution or for the purpose of coming into compliance with this chapter. A consent order may include agreed upon civil charges. Such orders may be issued without a formal hearing.

"Curb idle" means vehicle operation whereby the transmission is disengaged and the engine is operated with the throttle in the closed or idle stop position with the resultant engine speed between 400 and 1,250 revolutions per minute (rpm), or at another idle speed if so specified by the manufacturer.

"Data handling system" means all the computer hardware, software and peripheral equipment used to conduct emissions

inspections and manage the enhanced emissions inspection program.

"Data medium" or "data media" means the medium contained in the certified analyzer system and used to electronically record test data.

"Day" means a 24-hour period beginning at midnight.

"Dedicated alternative fuel vehicle" means a vehicle that was configured by the vehicle manufacturer to operate only on one specific fuel other than (i) gasoline, (ii) diesel, or (iii) fuel mixtures containing more than 15% by volume of gasoline.

"Dedicated-fuel vehicle" means a vehicle that was designed and manufactured to operate and operates on one specific fuel.

"Department" means any employee or other representative of the Virginia Department of Environmental Quality, as designated by the director.

"Director" means the director of the Virginia Department of Environmental Quality or a designated representative.

"Dual fuel" means a vehicle ~~which~~ *that* operates on a combination of fuels, usually gasoline or diesel and an alternative fuel, at the same time. That is, the mixed fuels are introduced into the combustion chamber of the engine.

"Emissions control equipment" means any part, assembly or equipment originally installed by the manufacturer in or on a motor vehicle for the sole or primary purpose of reducing emissions.

"Emissions control systems" means any system consisting of parts, assemblies or equipment originally installed by the manufacturer in or on a motor vehicle for the primary purpose of reducing emissions.

"Emissions inspection" means an emissions inspection of a motor vehicle performed by an emissions inspector employed by or working at an emissions inspection station or fleet emissions inspection station, using the tests, procedures, and provisions set forth in this chapter.

"Emissions inspection station" means a facility or portion of a facility ~~which~~ *that* has obtained an emissions inspection station permit from the director authorizing the facility to perform emissions inspections in accordance with the provisions of this chapter.

"Emissions inspector" means a person licensed by the department to perform inspections of vehicles required under the Virginia Motor Vehicle Emissions Control Law and is qualified in accordance with this chapter.

"Emissions standard" means any provision of Part III (9 VAC 5-91-160 et seq.) or Part XIV (9 VAC 5-91-790 et seq.) ~~which~~ *that* prescribes an emission limitation, or other emission control requirements for motor vehicle air pollution.

"Empty weight (EW)" means that weight stated as the EW on a Virginia motor vehicle registration or derived from the motor vehicle title or manufacturer's certificate of origin. The EW may be used to determine emissions inspection standards.



"Enhanced emissions inspection program" means a motor vehicle emissions inspection including procedures, emissions standards, and equipment required by 40 CFR Part 51, Subpart S or equivalent and consistent with applicable requirements of the federal Clean Air Act. The director shall will administer the enhanced emissions inspection program. Under the Virginia Motor Vehicle Emissions Control Law, the program requires that affected motor vehicles, unless otherwise exempted, receive biennial inspections at official emissions inspection stations, which may be test and repair facilities, in accordance with this chapter. Nothing in this program shall bar enhanced emissions inspection stations or facilities from also performing vehicle repairs.

"EPA" means the United States Environmental Protection Agency.

"Equivalent test weight (ETW)" or "emission test weight" means the weight of a motor vehicle as automatically determined by the emissions analyzer system based on vehicle make, model, body, style, model year, engine size, permanently installed equipment, and other manufacturer and aftermarket supplied information, and used for the purpose of assigning dynamometer resistance and exhaust emissions standards for the conduct of an exhaust emissions inspection.

"Evaporative system pressure test" or "pressure test" means a physical test of the evaporative emission control system on a motor vehicle to determine whether the evaporative system vents emissions of volatile organic compounds from the fuel tank and fuel system to an on-board emission control device, and prevents their release to the ambient air under normal vehicle operating conditions. Such testing shall only be conducted at emissions inspection stations upon installation of approved equipment and software necessary for performing the test, as determined by the director.

"Exhaust gas analyzer" means an instrument which that is capable of measuring the concentrations of certain air pollutants in the exhaust gas from a motor vehicle.

"Facility" means something that is built, installed or established to serve a particular purpose; includes, but is not limited to, buildings, installations, public works, businesses, commercial and industrial plants, shops and stores, apparatus, processes, operations, structures, and equipment of all types.

"Federal Clean Air Act" means 42 USC § 7401 et seq.

"Fleet" means 20 or more motor vehicles which that are owned, operated, leased or rented for use by a common owner.

"Fleet emissions inspection station" means any inspection facility operated under a permit issued to a qualified fleet owner or lessee as determined by the director.

"Flexible-fuel vehicle" means any motor vehicle capable of operating on two or more fuels, either one at a time or any mixture of two or more different fuels.

"Formal hearing" means a board or department process that provides for the right of private parties to submit factual proofs as provided in § 2.2-4020 of the Administrative Process Act in connection with case decisions. Formal hearings do not

include the factual inquiries of an informal nature provided in § 2.2-4019 of the Administrative Process Act.

"Fuel control systems" means those mechanical, electro-mechanical, galvanic or electronic parts or assemblies which regulate the air-to-fuel ratio in an engine for the purpose of providing a combustible charge.

"Fuel filler cap pressure test" or "gas cap pressure test" means a test of the ability of the fuel filler cap to prevent the release of fuel vapors from the fuel tank under normal operating conditions.

"Gas span" means the adjustment of an exhaust gas analyzer to correspond with known concentrations of gases.

"Gas span check" means a procedure using known concentrations of gases to verify the gas span adjustment of an analyzer.

"Gross vehicle weight rating (GVWR)" means the maximum recommended combined weight of the motor vehicle and its load as prescribed by the manufacturer and is (i) expressed on a permanent identification label affixed to the motor vehicle; (ii) stated on the manufacturer's certificate of origin; or (iii) coded in the vehicle identification number. If the GVWR can be determined it shall be one element used to determine emissions inspection standards and test type. If the GVWR is unavailable, the department may make a determination based on the best available evidence including manufacturer reference, information coded in the vehicle identification number, or other available sources of information from which to make the determination.

"Heavy duty gasoline vehicle (HDGV)" means a heavy duty vehicle using gasoline as its fuel.

"Heavy duty vehicle (HDV)" means any affected motor vehicle (i) which is rated at more than 8,500 pounds GVWR or (ii) which has a loaded vehicle weight or GVWR of more than 6,000 pounds and has a basic frontal area in excess of 45 square feet.

"High emitter index" means the method of categorizing the probable emissions inspection failure-rates of engine families. Values within the index are determined by computing the percentile of the historical emissions inspection failure rate of a specific engine family, i.e., a specific group of vehicles with the same vehicle type, year, make and engine size, to the historical emissions inspection failure rate of all engine families in a specific model year group. Failure rates are based on the most recent full year of emissions inspection test data from the Virginia Motor Vehicle Emissions Control Program. Vehicles with an index value above 75 are considered "high-emitters."

"Identification number" means the number assigned by the department to uniquely identify department personnel, an emissions inspection station, a certified emissions repair facility, a licensed emissions inspector, a certified emissions repair technician or other authorized personnel as necessary for specific tasks.

"Idle mode" means a condition where the vehicle engine is warm and running at the rate specified by the manufacturer

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as curb idle, where the engine is not propelling the vehicle, and where the throttle is in the closed or idle stop position.

"Ignition systems" means those parts or assemblies which ~~that~~ are designed to cause and time the ignition of a compressed air and fuel charge.

"Implementation plan" means the plan, including any revision thereof, that has been submitted by the Commonwealth and approved in Subpart VV of 40 CFR Part 52 by the administrator under § 110 of the federal Clean Air Act, or promulgated in Subpart VV of 40 CFR Part 52 by the administrator under § 110(c) of the federal Clean Air Act, or promulgated or approved by the administrator pursuant to regulations promulgated under § 301(d) of the federal Clean Air Act and that implements the relevant requirements of the federal Clean Air Act.

"Informal fact finding" means an informal conference or consultation proceeding used to ascertain the fact basis for case decisions as provided in § 2.2-4019 of the Administrative Process Act.

"Initial inspection" means the first complete emissions inspection of a motor vehicle conducted in accordance with the biennial inspection requirement and for which a valid vehicle emissions inspection report was issued. Any test following the initial inspection is a retest or reinspection.

"Inspection area" means the area that is occupied by the certified analyzer system and the vehicle being inspected.

"Inspection fee" means the amount of money that the emissions inspection station may collect from the motor vehicle owner for each chargeable inspection.

"Light duty gasoline vehicle (LDGV)" means a light duty vehicle using gasoline as its fuel.

"Light duty gasoline truck (LDGT1)" means a light duty truck 1 using gasoline as its fuel.

"Light duty gasoline truck (LDGT2)" means a light duty truck 2 using gasoline as its fuel."

Light duty truck (LDT)" means any affected motor vehicle which (i) has a loaded vehicle weight or GVWR of 6,000 pounds or less and meets any one of the criteria below; or (ii) is rated at more than 6,000 pounds GVWR but less than 8,500 pounds GVWR and has a basic vehicle frontal area of 45 square feet or less; and meets one of the following criteria:

1. Designed primarily for purposes of transportation of property or is a derivation of such a vehicle.
2. Designed primarily for transportation of persons and has a capacity of more than 12 persons.
3. Equipped with special features enabling off-street or off-highway operation and use.

"Light duty truck 1~~er~~" (LDT1)" means any affected motor vehicle which meets the criteria above and is light duty truck rated at 6,000 pounds GVWR or less. LDT1 is a subset of light duty trucks.

"Light duty truck 2~~er~~" (LDT2)" means any affected motor vehicle which meets the criteria above and is light duty truck

rated at greater than 6,000 pounds GVWR. LDT2 is a subset of light duty trucks.

"Light duty vehicle (LDV)" means an affected motor vehicle that is a passenger car or passenger car derivative capable of seating 12 passengers or less.

"Loaded vehicle weight (LVW)" or "curb weight" means the weight of a vehicle and its standard equipment; i.e., the empty weight as recorded on the vehicle's registration or the base shipping weight as recorded in the vehicle identification number, whichever is greater; plus the weight of any permanent attachments, the weight of a nominally filled fuel tank, plus 300 pounds.

"Locality" means a city, town, or county created by or pursuant to state law.

"Mobile fleet emissions inspection station" means a facility or entity which ~~which~~ that provides emissions inspection equipment or services to a fleet emissions inspection station on a temporary basis. Such equipment is not permanently installed at the fleet facility but is temporarily located at the fleet facility for the sole purpose of testing vehicles owned, operated, leased or rented for use by a common owner.

"Model year" means, except as may be otherwise defined in this chapter, the motor vehicle manufacturer's annual production period which includes the time period from January 1 of the calendar year prior to the stated model year to December 31 of the calendar year of the stated model year; provided that, if the manufacturer has no annual production period, the term "model year" shall mean the calendar year of manufacture. For the purpose of this definition, model year is applied to the vehicle chassis, irrespective of the year of manufacture of the vehicle engine.

"Motor vehicle" means any motor vehicle as defined in § 46.2-100 of the Code of Virginia as a motor vehicle and that:

1. Is designed for the transportation of persons or property and
2. Is powered by an internal combustion engine.

"Motor vehicle dealer" means a person who is licensed by the Department of Motor Vehicles in accordance with §§ 46.2-1500 and 46.2-1508 of the Code of Virginia.

"Motor vehicle inspection report" means a printed certificate of emissions inspection that is a report of the results of an emissions inspection. It indicates whether the motor vehicle has (i) passed, (ii) failed, or (iii) obtained a temporary emissions inspection waiver. It may also indicate whether the emissions inspection could not be completed due to an exhaust dilution or an engine condition that prevents the inspection from being completed. The report shall accurately identify the motor vehicle and shall include inspection results, recall information provided by the department, warranty and repair information, and a unique identification number.

"Motor vehicle owner" means any person who owns, leases, operates, or controls a motor vehicle or fleet of motor vehicles.

"Nonconforming vehicle" means a vehicle not manufactured for sale in the United States to conform to emissions standards established by the federal government.

"Normal business hours" for emissions inspection stations, means a daily eight-hour period Monday through Friday, between the hours of 8 a.m. and 6 p.m., with the exception of national holidays, state holidays, temporary closures noticed to the department and closures due to the inability to meet the requirements of this chapter. Nothing in this chapter shall prevent stations from performing inspections at other times in addition to the "normal business hours." Emissions inspection stations may, with the approval of the department, substitute a combined total of eight hours, between 8 a.m. and 6 p.m., over a weekend period for one weekday as their "normal business hours" for conducting emission inspections. Emissions inspection stations shall post inspection hours.

"Northern Virginia emissions inspection program" means the emissions inspection program required by this chapter in the Northern Virginia program area.

"Northern Virginia program area" or "program area" means the territorial area encompassed by the boundaries of the following localities: the counties of Arlington, Fairfax, Loudoun, Prince William, and Stafford; and the cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park.

"On-board diagnostic system" ~~or~~ (OBD system)" means the computerized emissions control diagnostic system installed on model year 1996 and newer affected motor vehicles.

"On-board diagnostic system test" ~~or~~ (OBD) system test" means an evaluation of the OBD system pursuant to 40 CFR 86.094-17 according to procedures specified in 40 CFR 85.2222 and this chapter.

"On-board diagnostic vehicle" ~~or~~ (OBD vehicle)" means a model year 1996 and newer model affected motor vehicle equipped with an on-board diagnostic system and meeting the requirements of 40 CFR 85.2231.

"On-road testing" means tests of motor vehicle emissions or emissions control devices by means of roadside pullovers or remote sensing devices.

"Operated primarily" means vehicle operation that constitutes a significant use in the program area. For the purpose of this definition *compliance with the requirements of 9 VAC 5-91-160 and 9 VAC 5-91-170*, significant use shall be (i) mileage in excess of 6,000 miles per year or (ii) routine operation into or within the program area as evidenced by recordation of travel in the program area at least three times in a two-week period by remote sensing or on-road testing. *For the purpose of compliance with the requirements of 9 VAC 5-91-180*, significant use shall be routine operation into or within the program area as evidenced by recordation by remote sensing equipment at least three times in a two-month period with no less than 30 days between the first and last recordation. The director may increase the number of observations required for compliance determination if, in his discretion, based on program experience, such an increase would not significantly adversely impact the objectives of this chapter.

"Order" means any decision or directive of the board or the director, including orders, consent orders, and orders of all types rendered for the purpose of diminishing or abating the causes of air pollution or enforcement of this chapter. Unless specified otherwise in this chapter, orders shall only be issued after the appropriate administrative proceeding.

"Original condition" means the condition of the vehicle, parts, and components as installed by the manufacturer but not necessarily to the original level of effectiveness.

"Owner" means any person who owns, leases, operates, controls or supervises a facility or motor vehicle.

"Party" means any person who actively participates in the administrative proceeding or offers comments through the public participation process and is named in the administrative record. The term "party" also means the department.

"Person" means an individual, corporation, partnership, association, a governmental body, a municipal corporation, or any other legal entity.

"Pollutant" means any substance the presence of which in the outdoor atmosphere is or may be harmful or injurious to human health, welfare or safety, to animal or plant life, or to property, or which unreasonably interferes with the enjoyment by the people of life or property.

"Referee station" means those facilities operated or used by the department to (i) determine program effectiveness, (ii) resolve emissions inspection conflicts between motor vehicle owners and emissions inspection stations, and (iii) provide such other technical support and information, as appropriate, to emissions inspection stations and motor vehicle owners.

"Reference method" means any method of sampling and analyzing for an air pollutant as described in Appendix A of 40 CFR Part 60.

"Reinspection" or "retest" means a type of inspection selected by the department or the emissions inspector when a request for an inspection is due to a previous failure. Any inspection that occurs 120 days or less following the most recent chargeable inspection is a retest.

"Rejected" or "rejected from testing" means that the vehicle cannot be inspected due to conditions in accordance with 9 VAC 5-91-420 C or 9 VAC 5-91-420 G 3.

"Remote sensing" means the observation, measurement, and recordation of motor vehicle exhaust emissions from motor vehicles while ~~travelling~~ *traveling* on roadways or in specified areas by specialized equipment. Such equipment may use light sensing and electronic stimuli in conjunction with devices, including videographic and digitized images, to detect and record vehicle identification information, such as registration or other identification numbers.

"Sensitive mission vehicle" means any vehicle which, for law enforcement or national security reasons, cannot be tested in the public inspection system and must not be identified through the fleet testing system. For such vehicles, an autonomous fleet testing system may be established by agreement between the controlling agency and the director.

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"Span gas" means gases of known concentration used as references to adjust or verify the accuracy of an exhaust gas analyzer that are approved by the department and are so labeled.

"Standard conditions" means a temperature of 20°C (68°F) and a pressure of 760 mm of H<sub>g</sub> (29.92 inches of H<sub>g</sub>).

"Standardized instruments" means laboratory instruments calibrated with precision gases traceable to the National Institute of Standards and Technology and accepted by the department as the standards to be used for comparison purposes. All candidate instruments are compared in performance to the standardized instruments.

"Tactical military vehicle" means any motor vehicle designed to military specifications or a commercially designed motor vehicle modified to military specifications to meet direct transportation support of combat, tactical, or military relief operations, or training of personnel for such operations.

"Tampering" means to alter, remove or otherwise disable or reduce the effectiveness of emissions control equipment on a motor vehicle.

"Test" means an emissions inspection of a vehicle, or any portion thereof, performed by an emissions inspector at an emissions inspection station, using the procedures and provisions set forth in this chapter.

"Test and repair" means motor vehicle emissions inspection stations which that perform emissions inspections and may also perform vehicle repairs. No provision of this chapter shall bar emissions inspection stations from also performing vehicle repairs.

"Thermostatic air cleaner" means a system that supplies temperature-regulated air to the air intake system during engine operation.

"True concentration" means the concentration of the gases of interest as measured by a standardized instrument which that has been calibrated with 1.0% precision gases traceable to the National Bureau of Standards.

"Two-speed idle test" ~~or~~ (TSI)" means a vehicle exhaust emissions test, performed in accordance with section (II) of 40 CFR Part 51, Appendix B to Subpart S, which measures the concentrations of pollutants in the exhaust gases of an engine (i) while the motor vehicle transmission is not propelling the vehicle and (ii) while the engine is operated at both curb idle and at a nominal engine speed of 2,500 rpm.

"Vehicle specific power (VSP)" means an indicator expressed as a function of vehicle speed, acceleration, drag coefficient, tire rolling resistance and roadway grade that is used to characterize the load a vehicle is operating under at the time and place a vehicle is measured by remote sensing equipment. It is calculated using the following formula:

$$VSP = 4.39 \times \text{Sine} (\text{Site Grade in Degrees}/57.3) \times \text{Speed} + K1$$

$$+ \text{Speed} \times \text{Acceleration} + K2 \times \text{Speed} + K3 \times \text{Speed}^3$$

Where

VSP = vehicle specific power indicator;

Sine = the trigonometric function that for an acute angle is the ratio between the side opposite the angle when it is considered part of a right triangle and the hypotenuse;

Site Grade in Degrees = slope of road where remote sensing measurement is taken;

K1, K2 and K3 = empirically determined coefficients specific to the weight class of the vehicle;

Speed = rate of motion in miles per hour of vehicle at the time remote sensing measurement is taken; and

Acceleration = change in speed in miles per hour per second.

For light duty vehicles the values for K1, K2 and K3 are respectively 0.22, 0.0954 and 0.0000272. Based on EPA guidance, the department may develop different values for K1, K2 and K3 that are applicable to heavy duty vehicles or to specific classes of light duty vehicles.

"Virginia Motor Vehicle Emissions Control Program" means the program for the inspection and control of motor vehicle emissions established by Virginia Motor Vehicle Emissions Control Law.

"Virginia Motor Vehicle Emissions Control Law" means Article 22 (§ 46.2-1176 et seq.) of Chapter 10 of Title 46.2 of the Code of Virginia.

"Visible smoke" means any air pollutant, other than visible water droplets, consisting of black, gray, blue or blue-black airborne particulate matter emanating from the exhaust system or crankcase. Visible smoke does not mean steam.

"Zero gas" means a gas, usually air or nitrogen, which is used as a reference for establishing or verifying the zero point of an exhaust gas analyzer.

## 9 VAC 5-91-160. Exhaust emission standards for two-speed idle testing in enhanced emissions inspection programs.

A. No motor vehicle subject to the two-speed idle test shall discharge carbon monoxide (CO), or hydrocarbons (HC) in its exhaust emissions in excess of standards set forth in Table III-A when measured with a certified analyzer system and in accordance with the two-speed idle inspection procedures prescribed in Part VI (9 VAC 5-91-410 et seq.).

B. The measured concentration of CO plus CO<sub>2</sub> shall be greater than or equal to 6.0%.

C. The standards in Table III-A may be adjusted by no more than one percentage point for CO and 150 ppm for HC in order to meet the requirements of the Environmental Protection Agency or the federal Clean Air Act.

TABLE III-A.  
EXHAUST EMISSION STANDARDS FOR TWO-SPEED  
IDLE EMISSIONS INSPECTIONS TESTS.

| Model Year   | HC (ppm) | CO (%) |
|--|----------|--------|
| For idle test and 2500 RPM test for vehicles up to 8500 pounds GVWR: |          |        |
| 1996 & later   | 110      | 0.75   |
| 1990-95  | 125      | 1.0    |
| 1981-89  | 220      | 1.2    |
| 1980   | 220      | 2.0    |
| 1975-79  | 400      | 4.0    |
| 1970-74  | 600      | 6.0    |
| 1968-69  | 800      | 8.0    |
| For vehicles from 8501 to 10000 pounds GVWR:                         |          |        |
| 1997 & later   | 125      | 0.75   |
| 1991-96  | 150      | 1.0    |
| 1981-90  | 220      | 1.2    |
| 1980   | 220      | 2.0    |
| 1975-79  | 400      | 4.0    |
| 1970-74  | 600      | 6.0    |
| 1968-69  | 800      | 8.0    |

E. All remote sensing measurements used to determine if a vehicle exceeds emissions standards prescribed in Table III-B shall be taken at valid sites under conditions at which the vehicle specific power (VSP) indicator is between 3 and 22. Standards for NO shall be corrected for VSP using the following formula:

$$NO \text{ standard} = \text{Low Range Standard} + (VSP-3) / 19 \times (\text{High Range Standard} - \text{Low Range Standard})$$

Where:

Low Range Standard = the smaller values in Table III-B in the NO (ppm) Range column;

VSP = vehicle specific power indicator; and

High Range Standard = the larger values in Table III-B in the NO (ppm) Range column.

F. The department may adjust the standards in Table III-B if it is determined that the a standard is causing a false failure confirmation test pass rate in excess of 20% or less than 5.0% as measured by the results of emissions inspections at emissions inspection stations. Such adjustments may be for specific model years models within each model year group based on manufacturer's emissions control technology.

TABLE III-B.  
EXHAUST EMISSION STANDARDS FOR REMOTE  
SENSING.

9 VAC 5-91-180. Exhaust emissions standards for on-road testing through remote sensing.

A. No affected motor vehicle shall exceed the emissions standard for carbon monoxide (CO), the emission standard for hydrocarbons (HC) or nitric oxide (NO), whichever is selected for use, or both, set forth in Table III-B when measured with a remote sensing device and in accordance with the inspection procedures prescribed in Part XII (9 VAC 5-91-740 et seq.).

B. Any affected motor vehicle determined to have exceeded any emissions standards in Table III-B at least twice within 90 days when measured by a remote sensing device in accordance with the procedures of Part XII (9 VAC 5-91-740 et seq.) may be subject to an emissions inspection at an emissions inspection station in accordance with Part XII (9 VAC 5-91-740 et seq.) or a civil charge in accordance with § 46.2-1178.1 B of the Code of Virginia, or both.

C. Beginning January 1, 2004, motor vehicles that exceed the emissions standards in Table III-B two days in any 120-day period shall be considered to have violated the emissions standards. In addition, the department may use the high emitter index as an additional screening requirement.

D. Beginning January 1, 2005, or later date based on analysis of remote sensing failure rates and confirmation test results, the department may determine that an affected vehicle is a high emitter if the vehicle exceeds the standards in Table III-B once and is also determined to have a high emitter index of greater than 75.

| Model Year                         | CO (%) | HC (ppm) |
|------------------------------------|--------|----------|
| 1977-79, 6000 lb. and less         | 4.0    | 1600     |
| 1977-79, more than 6000 lb.        | 4.2    | 2000     |
| 1980-95, 8500 lb. and less         | 4.8    | 880      |
| 1980-95, more than 8500 lb.        | 6.0    | 880      |
| 1996-98, 6000 lb. and less         | 3.6    | 660      |
| 1996-98, more than 6000 lb.        | 5.0    | 660      |
| 1999 and newer, 6000 lb. and less  | 3.6    | 440      |
| 1999 and newer, more than 6000 lb. | 5.0    | 440      |

| Standards Beginning January 1, 2004 |        |          |                                  |
|-------------------------------------|--------|----------|----------------------------------|
| Period/Model Year/<br>Vehicle Type  | CO (%) | HC (ppm) | NO (ppm)<br>Range<br>Low to High |
| Pre-1981 - LDGT (1 or 2)            | 7.0%   | 1000     |                                  |
| Pre-1981 - LDGV                     | 7.0%   | 1000     |                                  |
| Pre-1981 - HDGV                     | 7.0%   | 1000     |                                  |
| 1981 to 1985 - LDGT (1 or 2)        | 6.0%   | 800      | 1500-2000                        |
| 1981 to 1985 - LDGV                 | 6.0%   | 750      | 1200-1800                        |
| 1981 to 1985 - HDGV                 | 7.0%   | 750      |                                  |
| 1986 to 1990 - LDGT (1 or 2)        | 5.5%   | 700      | 1200-1800                        |
| 1986 to 1990 - LDGV                 | 5.5%   | 650      | 1000-1600                        |
| 1986 to 1990 - HDGV                 | 6.5%   | 750      |                                  |
| 1991 to 1995 - LDGT (1 or 2)        | 5.0%   | 650      | 1200-1800                        |
| 1991 to 1995 - LDGV                 | 5.0%   | 600      | 1000-1600                        |
| 1991 to 1995 - HDGV                 | 6.0%   | 700      |                                  |
| 1996 and newer LDGT (1 or 2)        | 4.0%   | 450      | 600-900                          |
| 1996 and newer LDGV                 | 4.0%   | 450      | 600-900                          |
| 1996 and newer HDGV                 | 5.0%   | 600      |                                  |

# Proposed Regulations

| Standards Beginning January 1, 2005, and later - Two or More On-Road Measurements |        |             |                                  |
|---|--------|-------------|----------------------------------|
| Period/Model Year/<br>Vehicle Type  | CO (%) | HC<br>(ppm) | NO (ppm)<br>Range<br>Low to High |
| Pre-1981 – LDGT (1 or 2)  | 7.0%   | 1000        |                                  |
| Pre-1981 – LDGV   | 7.0%   | 1000        |                                  |
| Pre-1981 – HDGV   | 7.0%   | 1000        |                                  |
| 1981 to 1985 – LDGT (1 or 2)  | 6.0%   | 800         | 1500–2000                        |
| 1981 to 1985 – LDGV   | 6.0%   | 750         | 1200–1800                        |
| 1981 to 1985 – HDGV   | 7.0%   | 750         |                                  |
| 1986 to 1990 – LDGT (1 or 2)  | 5.5%   | 700         | 1200–1800                        |
| 1986 to 1990 – LDGV   | 5.5%   | 650         | 1000–1600                        |
| 1986 to 1990 – HDGV   | 6.5%   | 750         |                                  |
| 1991 to 1995 – LDGT (1 or 2)  | 4.0%   | 550         | 1000–1500                        |
| 1991 to 1995 – LDGV   | 4.0%   | 500         | 900–1400                         |
| 1991 to 1995 – HDGV   | 6.0%   | 700         |                                  |
| 1996 and newer LDGT (1 or 2)  | 3.0%   | 350         | 500–800                          |
| 1996 and newer LDGV   | 3.0%   | 350         | 500–800                          |
| 1996 and newer HDGV   | 5.0%   | 600         |                                  |

  

| January 1, 2005 and later - Single On-Road Measurement<br>Vehicle must have High Emitter Index of 75% or Higher |        |             |                                  |
|---|--------|-------------|----------------------------------|
| Period/Model Year/<br>Vehicle Type  | CO (%) | HC<br>(ppm) | NO (ppm)<br>Range<br>Low to High |
| Pre-1981 – LDGT (1 or 2)  | 7.0%   | 1000        |                                  |
| Pre-1981 – LDGV   | 7.0%   | 1000        |                                  |
| Pre-1981 – HDGV   | 7.0%   | 1000        |                                  |
| 1981 to 1985 – LDGT (1 or 2)  | 6.0%   | 800         | 1500–2000                        |
| 1981 to 1985 – LDGV   | 6.0%   | 750         | 1200–1800                        |
| 1981 to 1985 – HDGV   | 7.0%   | 750         |                                  |
| 1986 to 1990 – LDGT (1 or 2)  | 5.5%   | 700         | 1200–1800                        |
| 1986 to 1990 – LDGV   | 5.5%   | 650         | 1000–1600                        |
| 1986 to 1990 – HDGV   | 6.5%   | 750         |                                  |
| 1991 to 1995 – LDGT (1 or 2)  | 4.0%   | 550         | 1000–1500                        |
| 1991 to 1995 – LDGV   | 4.0%   | 500         | 900–1400                         |
| 1991 to 1995 – HDGV   | 6.0%   | 700         |                                  |
| 1996 + LDGT (1 or 2)  | 3.0%   | 350         | 500–800                          |
| 1996 + LDGV   | 3.0%   | 350         | 500–800                          |
| 1996 + HDGV   | 5.0%   | 600         |                                  |

$NO$  standard = Low Range standard + (Actual VSP-3)/19 x (High Range standard – Low Range Standard)

D. For any 30-day period, up to 5.0% of the number of vehicles measured three times which have been detected as having the cleanest measurements, based on an average of three measurements using on-road testing equipment within the period, may, at the discretion of the director, be recorded as having passed an emissions inspection and such result shall be entered into the emissions inspection record for that vehicle.

E. Remote sensing measurements used for such purposes shall be from at least two different on-road testing locations.

F. Remote sensing measurements obtained while a vehicle is decelerating shall not be used for the purpose described in this section.

G. Beginning January 1, 2005, clean screen vehicles will be identified using on-road testing equipment measurements based on all of the following criteria:

1. Up to 5.0% of the number of vehicles measured during any 30-day period may be identified as clean screen vehicles.

2. Vehicles that have the cleanest measurements based on an average of at least three measurements (taken on three different days) may be identified as clean screen vehicles.

3. Vehicles with no measurements exceeding the standards in Table III B may be identified as clean screen vehicles.

H. At the discretion of the director, vehicles identified as clean screen vehicles in accordance with subsection G of this section may be recorded as having passed the next emissions inspection required by § 46.2-1183 of the Code of Virginia and the result shall be entered into the emissions inspection record for that vehicle.

### 9 VAC 5-91-740. General requirements.

A. The on-road testing program shall conform, at a minimum, to the requirements of 40 CFR 51.371 and § 46.2-1178.1 of the Code of Virginia applicable to the program area in which it is employed.

B. The emissions standards for the on-road remote sensing program are those contained in Table III-B in 9 VAC 5-91-180.

C. The on-road testing program and the emissions standards applicable thereto shall apply to affected motor vehicles registered in the program area and any affected motor vehicles operated primarily in the program area.

### 9 VAC 5-91-741. Financial assistance program

A. Vehicles identified by on-road testing that fail to meet emissions standards may qualify for financial assistance for emissions-related diagnostic and repair services.

B. Repairs shall be performed by, or under the supervision or approval of, a certified emissions repair technician at a certified emissions repair facility.

C. The department will notify owners of vehicles that violate the remote sensing requirements of 9 VAC 5-91-180. The notification will inform owners of the potential for financial assistance and how to apply for the assistance for repairs to vehicles identified via remote sensing if they meet the eligibility requirements in 9 VAC 5-91-742 and the subsidy percentage of total eligible repair costs.

D. For affected motor vehicles subject to a confirmation test, the department may provide a subsidy of up to 50% of the amount spent on emissions related repairs up to a maximum of 50% of the waiver amount for repairs performed to comply with the emission standards prescribed in 9 VAC 5-91-160 and 9 VAC 5-91-170. The director may increase or decrease the subsidy percentage depending upon the number of applications received, average expenditure for repair, and availability of funds.

### 9 VAC 5-91-742. Eligibility requirements for financial assistance

A. In order to qualify for financial assistance, a person shall meet the following requirements, as applicable:



1. Be the registered owner of an eligible vehicle for which all appropriate registration fees for the vehicle with the Department of Motor Vehicles have been paid.

2. Have a household income that is less than or equal to 133% of the federal Poverty Guidelines, as published by the United States Department of Health and Human Services; and

3. Spend a minimum copayment of one hundred dollars on emissions-related repairs at a certified vehicle emissions repair facility. Money spent to correct tampered emissions control systems or to make a vehicle test ready shall not be included in the copayment. Repairs shall meet the requirements of 9 VAC 5-91-741 B.

B. In order to qualify for financial assistance, a vehicle shall be an affected motor vehicle that:

1. Is subject to the provisions of § 46.2-1177 of the Code of Virginia;

2. Can be driven under its own power to the emissions repair facility;

3. Is currently registered or is operated primarily in the program area;

4. Has a current and valid Virginia Motor Vehicle Safety Inspection as provided in §§ 46.2-1157 and 46.2-1158 of the Code of Virginia; and

5. Has been issued a notice of violation under 9 VAC 5-91-750 B.

C. The owners of the following vehicles are not eligible for financial assistance:

1. A vehicle undergoing a transfer of ownership.

2. A vehicle being initially registered in Virginia.

3. A nonconforming vehicle.

4. A vehicle powered exclusively by a clean special fuel.

5. A vehicle owned or operated by a fleet.

6. A vehicle registered to a nonprofit organization.

7. A vehicle owned or leased by a commercial entity.

8. A vehicle owned or leased by a government entity.

9. A vehicle registered as an antique vehicle.

10. A vehicle that is unable to complete a motor vehicle emissions inspection according to 9 VAC 5-91-410 through 9 VAC 5-91-490.

**9 VAC 5-91-743. Application and documentation requirements.**

A. Persons seeking financial assistance shall submit a completed application to the department or its designee with original signature.

B. The application shall include copies of the following documents, as applicable:

1. Any invoices for emissions-related repairs performed pursuant to a notification of violation issued under 9 VAC 5-91-750 B prior to applying financial assistance.

2. Any emissions repair data forms from the certified emissions repair facility supporting the repair invoices.

3. Any other information as may be required by the department to determine eligibility and/or compliance.

**9 VAC 5-91-750. Operating procedures; violation of standards.**

A. Remote sensing equipment shall be operated in accordance with the remote sensing equipment manufacturers operating instructions and any contract or agreement between the department and the equipment operator.

B. Motor vehicles determined by remote sensing equipment to have exceeded the applicable emissions standard in Table III-B in 9 VAC 5-91-180 twice within 90 days shall be considered to have violated such emissions standards.

1. Owners of such motor vehicles shall will be issued a notice of violation and shall be subject to the civil charges in 9 VAC 5-91-760 unless waived pursuant to this section.

2. Upon a determination by the department that a violation has occurred, motorists shall will be informed by the department or its representative of the failure to comply with emissions standards and of the dates, times, and places such remote sensing measurement occurred.

C. Civil charges assessed pursuant to this part shall will be waived if, within 90 30 days of the date of the notice of the violation, the motor vehicle owner provides proof to the department that since the date of the violation, (i) the vehicle has passed a vehicle emissions inspection, (ii) the vehicle has received an emissions inspection waiver, or (iii) the vehicle has qualified for a waiver within the 12 months prior to the violation.

1. Since the date of the violation, the vehicle has passed, or received a waiver as the result of, a confirmation test, or

2. Within the 12 months prior to the violation, the vehicle had received an emissions inspection waiver.

D. The requirement for an emissions inspection or payment of civil charges, based on a remote sensing failure, may be waived by the department if the affected motor vehicle in question (i) is, by virtue of its registration date, required to have an emissions inspection within 90 days three months of the date of the notice of violation remote sensing measurement that indicates the vehicle has exceeded the applicable standards in Table III-B in 9 VAC 5-91-180 or (ii) has received a waiver within the 12 months prior to the violation.

E. For 1996 and newer model vehicles with OBD, the director may require that the vehicle pass an exhaust test (ASM or two-speed idle) in addition to the OBD system test.

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# Proposed Regulations

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## **9 VAC 5-91-760. Schedule of civil charges.**

A. No charge shall exceed an adjusted maximum charge of \$450 adjusted annually by using 1990 as the base year and applying the consumer price index.

B. For violations measured in accordance with 9 VAC 5-91-750 B to be up to 120% of the applicable standard, the charge shall not exceed 20% of the adjusted maximum charge in subsection A of this section.

C. For violations measured in accordance with 9 VAC 5-91-750 B to be more than 120% but not exceeding 140% of the applicable standard, the charge shall not exceed 40% of the adjusted maximum charge in subsection A of this section.

D. For violations measured in accordance with 9 VAC 5-91-750 B to be more than 140% but not exceeding 160% of the applicable standard, the charge shall not exceed 60% of the adjusted maximum charge in subsection A of this section.

E. For violations measured in accordance with 9 VAC 5-91-750 B to be more than 160% but not exceeding 180% of the applicable standard, the charge shall not exceed 80% of the adjusted maximum charge in subsection A of this section.

F. For violations measured in accordance with 9 VAC 5-91-750 B to be over 180% of the applicable standard, the charge shall not exceed the adjusted maximum charge in subsection A of this section.

G. Civil charges assessed pursuant to this part shall be paid into the state treasury according to § 46.2-1178.1 of the Code of Virginia.

H. For the purpose of applying a civil charge as prescribed in this section, the degree of violation shall be determined by averaging the ~~readings~~ *highest percentage by which the emissions standard was exceeded for each remote sensing measurement in which exceed at least one of the standard applicable standards was exceeded.*

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