

15A NCAC 02D .0953 VAPOR RETURN PIPING FOR STAGE II VAPOR RECOVERY

(a) **Applicability.** This Rule applies to any facility located in Davidson, Durham, Forsyth, Gaston, Guilford, Mecklenburg, or Wake counties or the Dutchville Township in Granville county or that portion of Davie County that is bounded by the Yadkin River, Dutchman's Creek, NC Highway 801, Fulton Creek and back to the Yadkin River:

- (1) that is built after June 30, 1994, or
- (2) whose tanks are replaced or removed for upgrades or repairs after June 30, 1994.

When a new tank is added, the new tank shall comply with this Rule.

(b) **Exemptions.** The burden of proof of eligibility for exemption from this Rule is on the owner or operator of the facility. Persons seeking an exemption from this Rule shall maintain records of throughput and shall furnish these records to the Director upon request. These records shall be maintained on file for three years. The following facilities are exempt from this Rule based upon the previous two years records:

- (1) any facility that dispenses less than 10,000 gallons of gasoline per calendar month;
- (2) any facility that dispenses less than 50,000 gallons of gasoline per calendar month and is an independent small business marketer of gasoline;
- (3) any facility that dispenses gasoline exclusively for refueling marine vehicles, aircraft, farm equipment, and emergency vehicles; or
- (4) any tanks used exclusively to test the fuel dispensing meters.

Any facility that ever exceeds the exemptions given in Subparagraphs (1), (2), (3), or (4) of this Paragraph shall be subject to all of the provisions of this Rule according to the schedule given in Paragraph (e) of this Rule, and shall remain subject to these provisions even if the facility's later operation meets the exemption requirements.

(c) **Definitions.** For the purpose of this Rule, the following definitions apply:

- (1) "Affected Facility" means any gasoline service station or gasoline dispensing facility subject to the requirements of this Rule.
- (2) "CARB" means the California Air Resources Board.
- (3) "Certified Stage II Vapor Recovery System" means any system certified by the California Air Resources Board as having a vapor recovery or removal efficiency of at least 95 percent by weight.
- (4) "Facility" means any gasoline service station or gasoline dispensing facility.
- (5) "ISBM" means independent small business marketer.
- (6) "Independent Small Business Marketer of Gasoline" means a facility that qualifies under Section 324 of the Federal Clean Air Act.
- (7) "Operator" means any person who leases, operates, controls, or supervises a facility at which gasoline is dispensed.
- (8) "Owner" means any person who has legal or equitable title to the gasoline storage tank at a facility.
- (9) "Stage II Vapor Recovery" means the control of gasoline vapor at the vehicle fill-pipe, where the vapors are captured and returned to a vapor-tight underground storage tank or are captured and destroyed.
- (10) "Throughput" means the amount of gasoline dispensed at a facility during any calendar month.
- (11) "Vapor Recovery Dispenser Riser" means piping rising from the vapor recovery piping to the dispenser.
- (12) "Vapor Recovery Piping" means vapor return piping connecting the storage tank(s) with the vapor recovery dispenser riser(s).

(d) **Requirements.** Affected facilities shall install the necessary piping for future installation of CARB certified Stage II vapor recovery system. The vapor piping shall extend from the tanks to the pumps. The vapor piping shall be installed in accordance with the following requirements:

- (1) Gasoline vapors shall be:
 - (A) transferred from each gasoline dispenser to the underground storage tank individually, or
 - (B) manifolded through a common header from which a single return line is connected through another manifold to all of the underground tanks.

Each vapor return pipe shall allow the transfer of gasoline vapors to the tank from which the liquid gasoline is being drawn;

- (2) Pipe diameter shall meet manufacturer's specifications. If the manufacturer does not specify diameters, the following minimum pipe diameters apply. If the manufacturer only specifies diameters for part of the system, the following diameters apply for the pipe(s) not specified. All fittings, connectors, and joints shall have an inside diameter equal to the inside diameter of the pipe to which it is attached. The following diameters are specified for the number of nozzles that may be operated at the same time;
 - (A) Vapor Recovery Dispenser Risers
 - (i) Three-fourths of an inch for vapor recovery dispenser risers returning vapors from one nozzle; or

- (ii) One inch for vapor recovery dispenser risers returning vapors from two nozzles;
 - (B) Vapor Recovery Piping
 - (i) At least two inches for six or fewer nozzles; or
 - (ii) At least three inches for more than six nozzles;
 - (3) All piping and fittings shall be installed in accordance with manufacturer's instructions and specifications. Metal pipe shall be minimum schedule 40 welded or seamless steel per ASTM A-53, "Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless Pipe". Fittings shall be 150 pounds cold water screwed malleable iron. Pipe and fittings shall be galvanized and pipe threads shall be zinc-coated. Nonmetallic pipes and fittings shall be U/L listed under nonmetallic primary pipes and fittings for underground flammable liquids (gas and oil equipment directory);
 - (4) Each vapor return pipe shall slope toward the storage tank with a minimum grade of 1/8 inches per foot. No low points or sags shall exist along the return piping;
 - (5) All vapor return and vent piping shall be provided with flexible joints or swing joints at each tank connection and at the base of the vent pipe riser where it fastens to a building or other structure;
 - (6) All vapor return pipe-trenching shall be compacted to 90 percent of the standard proctor according to ASTM D-698 "Laboratory Compaction Characteristics of Soil Using Standard Effort" of the area soil before the pipes are installed and back-filled with sand or other material approved by the pipe manufacturer at least six inches below and above the piping;
 - (7) The pipes shall not be driven over or in any other way crushed before paving or surfacing;
 - (8) The vapor return piping or manifolded piping on a vacuum assisted system shall enter a separate opening to the tank from that connected to the vent pipe or the Stage I piping;
 - (9) All vapor return piping shall be tagged at the termination point recording the function of the piping. In addition, a record of the installation of the Stage II vapor return piping shall be kept in the facility;
 - (10) Vent piping shall be constructed of materials in accordance with Subparagraph (3) of this Paragraph;
 - (11) All vent pipes shall be a minimum of two inches inside diameter or meet the local Fire Codes; and
 - (12) All vent pipes shall slope toward the underground storage tank with a grade of at least 1/8 inch per linear foot.
- (e) Compliance Schedule. Compliance under Paragraph (d) of this Rule by the affected facility shall coincide with the completion of the tank installation or repair. The owner or operator of a facility shall notify the Director within 60 days after the day the facility has exceeded the exemptions under Paragraph (b) of this Rule. Facilities that lose their exemption under Paragraph (b) of this Rule shall comply with this Rule within 18 months after the day the owner or operator of the facility has notified the Director that the facility has exceeded its exemption under Paragraph (b) of this Rule.
- (f) Testing Requirements.
- (1) Within 30 days after installation of the vapor return piping, the owner or operator of the facility shall submit reports of the following tests to be completed as described in EPA-450/3-91-022b:
 - (A) Bay Area Source Test Procedure ST-30, Leak Test Procedure, or San Diego Test Procedure TP-91-1, Pressure Decay/Leak Test Procedure, and
 - (B) Bay Area Source Test Procedure ST-27, Dynamic Back Pressure, or San Diego Test Procedure TP-91-2, Pressure Drop vs Flow/Liquid Blockage Test Procedure.
 - (2) Testing shall be in accordance with Rule .0912 of this Section.
 - (3) The owner or operator of the facility shall notify the Regional Office Supervisor by telephone at least five business days before back-filling the trenches and at least 10 business days before the tests given in Subparagraph (1) of this Paragraph are to be performed to allow inspection by the Division. The owner or operator may commence back-filling five days after notification has been given to the Division.
 - (4) The owner or operator of the facility and the test contractor shall report all test failures to the Regional Office Supervisor within 24 hours of the failure.
 - (5) The Director may require the owner or operator of the facility to perform any of the tests in Subparagraph (1) of this Paragraph if there are any modifications or repairs.
 - (6) Where the Division conducts a test on the vapor control system, it shall be without compensating the owner or operator of the facility for any lost revenues incurred due to the testing procedure.
- (g) Referenced documents. EPA-450/3-91-022b, "Technical Guidance - Stage II Vapor Recovery Systems for Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities, Volume II: Appendices", November 1991, cited in this Rule is hereby incorporated by reference and does not include subsequent amendments or editions. A copy of this document is available for inspection at the Regional Offices of the North Carolina Department of Environment and Natural Resources (Addresses are given in Rule .0103 of this Subchapter). Copies of this document may be obtained through the Library

Services Office (MD-35), U.S. Environmental Protection Agency, Research Triangle Park or National Technical Information Services (NTIS), 5285 Port Royal Road, Springfield VA 22161. The NTIS number for this document is PB-92132851, and the cost is fifty-two dollars (\$52.00).

History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a); 150B-21.6;
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