APPENDIX 8
VOLATILE ORGANIC COMPOUND EMISSION STANDARDS INCLUDING VOC RACT

OVERVIEW OF VOC CONTROL PROGRAM

Several air quality regulations could be applicable to emissions of volatile organic compounds (VOC), such as solvents, chemicals, fuels, etc.

All facilities that use VOC as solvents, carriers, material processing media, or industrial chemical reactants, or in other similar use or that mix, blend, or manufacture VOC, or emit VOC as a product of a chemical reaction are required to comply with the work practice standards of **15A NCAC 2D .0958**. There are two exceptions: (1) architectural or maintenance coating activities and (2) sources subject to the wood furniture MACT, 40 CFR Part 63, Subpart JJ.

All gasoline service stations and dispensing facilities, bulk gasoline plants, and bulk gasoline terminals in the State are required to comply with the requirements of Section **15A NCAC 2D .0900**.

Major sources of VOC constructed in Mecklenburg County before May 1, 1995, are required to comply with the rules in Section **15A NCAC 2D .0900**.

In areas not in compliance with the ozone ambient air quality standards (ozone nonattainment areas), certain categories of existing major sources of VOC are required to comply with the RACT rules contained in Section **15A NCAC 2D .0900**. New or modified major VOC sources in ozone nonattainment areas must be controlled to the lowest achievable emission rate (LAER) and provide reductions at existing sources to offset new emissions (**15A NCAC 2D .0531**).

In ozone attainment areas, major new or modified VOC sources are required to install BACT to comply with the prevention of significant deterioration requirements in Rule **15A NCAC 2D .0530**.

Certain new sources of VOC are required to comply with new source performance standards (NSPS) contained in 40 CFR Part 60, which are adopted by reference in **15A NCAC 2D .0524**. Certain sources of VOC are required to comply with the national emission standards for hazardous air pollutants (NESHAP) contained in 40 CFR Part 61 and Part 63. The NESHAP in 40 CFR Part 61 are adopted by reference in **15A NCAC 2D .1110**. The requirements in 40 CFR Part 63 are adopted by reference in Rule **15A NCAC 2D .1111**. Sources of VOC may also be subject to the requirements of the State's air toxic rules in Section **15A NCAC 2D .1100** .

SOIL REMEDIATION AND AIR STRIPPING

Both air strippers and mobile source remediation units (MSRU) should be permitted according to the current rules as emission sources. Either of these sources may take advantage of the insignificant activity exemption provided by **15A NCAC 2Q .0102(b)(2)(E)(i),** the miscellaneous exemption, if the before control potential emissions are below five tons per year and the potential emissions of hazardous air pollutants are below the lesser quantity cutoff emission rate. This exemption is available to sources regardless of whether a control device is installed. Air strippers may also qualify for exemption under **15A NCAC 2Q .0102(b)(1)(K)(ix)**, no applicable requirement, if there are no applicable requirements for the unit and if the unit is not at a facility required to have a permit under Title V.

In evaluating the permitting applicability for MSRU, potential emissions should be determined separately for each site, i.e., emissions should not be aggregated to determine applicability. If the MSRU requires permitting, soil at each site should be characterized and compliance demonstrated for each site. If a multiple site permit is issued pursuant to **15A NCAC 2Q .0311**, Permitting Facilities at Multiple Temporary Sites, the permit should be issued and billed from regional office where the initial site is located. As required by the rules, the permit holder has to notify the regional office at least 10 days before each change of site.

DEFINITIONS: 15A NCAC 2D .0901

Coating Line

If the coating applicators have a common flashoff area and oven or if coating applicators and their flashoff areas have a common drying oven, then the coating operations are considered one coating line. If each coating operation has its own applicator, flashoff area and oven, the coating operation is still considered one coating line if the material coated on one is then coated on the other line. If a physical connection occurs between coating lines, they are considered one line. The connection can be the use of common equipment, flashoff area, or drying ovens. The connection can be the article being coated, that is, the same article is coated on each line. However, if each coating line operates independent of the others, then each is considered a different coating line.*

Solvent

For the purpose of Section **15A NCAC 2D .0900**, "solvent" does not include water. Only organic liquid compounds are considered solvents under this Section.†

Volatile Organic Compounds

The following compounds are listed either as not being a volatile organic compound or as having negligible photochemical reactivity:

carbon monoxide
carbon dioxide
carbonic acid
metallic carbides or carbonates
ammonium carbonate
methane
ethane
trichlorofluoromethane (chlorofluorocarbon 11, CFC-11)
dichlorodifluoromethane (chlorofluorocarbon 12, CFC-12)
chlorodifluoromethane (chlorofluorocarbon 22, HCFC-22)
trifluoromethane (fluorocarbon 23, HFC-23)

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*Thomas Allen to Ogden Gerald, "Definition of Coating Line," 30 April 1982,(memorandum).

†Thomas C. Allen to Regional Supervisors, "Explanation of the Term 'Solvent' as Used in Regulation 15 NCAC 2D .0518 and Section 15 NCAC 2D .0900," 17 March 1981 (memorandum).

1,1,2-trichloro-1,2,2-trifluoroethane (chlorofluorocarbon 113, CFC-113)
1,2-dichloro 1,1,2,2-tetrafluoroethane (chlorofluorocarbon 114, CFC-114)
chloropentafluoroethane (chlorofluorocarbon 115, CFC-115)
1,1,1-trichloroethane (methyl chloroform)
dichloromethane (methylene chloride)
1,1,1-trifluoro 2,2-dichloroethane (hydrochlorofluorocarbon 123, HCFC-123)
1,1,1,2-tetrafluoroethane (hydrofluorocarbon 134a, HFC-134a)
1,1-dichloro 1-fluoroethane (hydrochlorofluorocarbon 141b, HCFC-141b)
1-chloro 1,1-difluoroethane (hydrochlorofluorocarbon 142b, HCFC-142b)
2-chloro-1,1,1,2-tetrafluoroethane (hydrochlorofluorocarbon 124, HCFC-124)
pentafluoroethane (hydrofluorocarbon 125, HFC-125)
1,1,2,2-tetrafluoroethane (hydrofluorocarbon 134, HFC-134)
1,1,1-trifluoroethane (hydrofluorocarbon 143a, HFC-143a)
1,1 difluoroethane (hydrofluorocarbon 152a, HFC-152a)
parachlorobenzotrifluoride (PCBTF)
acetone
cyclic, branched, or linear completely methylated siloxanes
perchloroethylene (tetrachloroethylene)
3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)
1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)
1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC-43-10mee)
difluoromethane (HFC-32)
ethylfluoride (HFC-161)
1,1,1,3,3,3-hexafluoropropane (HFC-236fa)
1,1,2,2,3-pentafluoropropane (HFC-245ca)
1,1,2,3,3-pentafluoropropane (HFC-245ea)
1,1,1,2,3-pentafluoropropane (HFC-245eb)
1,1,1,3,3-pentafluoropropane (HFC-245fa)
1,1,1,2,3,3-hexafluoropropane (HFC-236ea)
1,1,1,3,3-pentafluorobutane (HFC-365mfc)
chlorofluoromethane (HCFC-31)
1-chloro-1-fluoroethane (HCFC-151a)
1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a)
1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane

2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane
1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane
2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane
methyl acetate
perfluorocarbon compounds that fall into these classes:

(1) cyclic, branched, or linear completely fluorinated alkanes;
(2) cyclic, branched, or linear completely fluorinated ethers with no unsaturations;
(3) cyclic, branched, or linear completely fluorinated tertiary amines with no unsaturations; and
(4) sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine

APPLICABILITY: 15A NCAC 2D .0902

Exemptions

Rule **15A NCAC 2D .0902** contains three exemptions from the rules in Section **15A NCAC 2D .0900**, two of which are pertinent to **15A NCAC 2D .0958**. One of these exemptions is for sources that emit no more than 15 pounds of VOC per day. The other deals with laboratories.

In general, the 15-pound-per-day exemption (**15A NCAC 2D .0902(h)(1)**) applies to sources whose emissions do not exceed 15 pounds for any day. If the source exceeds 15 pounds on any one day, this exemption does not apply. This interpretation of this exemption is appropriate for most processes. However, for maintenance areas, construing the exemption as a maximum daily limit is not practical without a great deal of record keeping. For maintenance areas, a more practical interpretation would be 15 pounds per day averaged over the number of days of operation for the year.*

For a coating operation, emissions from equipment and activities, such as spray booths, equipment cleaning, and tanks and containers containing coating or cleaning materials, associated with that coating operation and located in the proximity of the coating operation, are included with the emissions from the coating operation to determine if the 15-pound-per-day exemption applies. However, if a centralized

*"Guidance for Implementing New VOC Rule Changes," revised 7 Nov. 2000.

storage tank, for example, serves multiple coating operations, emissions from that tank would not be included with the emissions from the coating operations when determining if the 15-pound-per-day limit applies.*

The laboratory exemption applies to sources used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance if (1) the operation of the source is not an integral part of the production process, (2) the emissions from the source do not exceed 800 pounds per calendar month, and (3) the exemption is approved in writing by the Director. The best way to understand this exemption is to read it to mean essentially the same thing as the permit exemption for laboratory activities (**15A NCAC 2Q .0102(c)(1)(C)** with an 800-pounds-per-calendar-month cap. Furthermore, the facility needs to request and receive approval from the Director (Regional Supervisor) to qualify for this exemption. (NOTE: If the emissions from the laboratory do not exceed 15 pounds per day, it qualifies for the 15-pound-per-day exemption under **15A NCAC 2D .0902(h)(1)** and does not need approval from the Division of Air Quality.) For laboratories, "source" should be interpreted to mean the entire laboratory regardless of hoods. Generally, laboratories that are physically separated would be considered different sources. However, in some situations identifying laboratories as sources based on function may be more appropriate and practical.†

COMPLIANCE SCHEDULES FOR SOURCE IN NEW NONATTAINMENT AREAS: 15A NCAC 2D .0909

Currently, Rule **15A NCAC 2D .0909** applies only to the three ozone maintenance areas, Charlotte/Gastonia, Greensboro/Winston-Salem/High Point, and Raleigh/Durham. The counties in these maintenance areas are identified in Appendix 37 and Rule **15A NCAC 2D .0902**, Applicability. This Rule would apply only to those source categories in the counties identified in the Director's notice for control. This notice would identify the county where the controls are needed and the source category for which controls are needed. If a source falls into one of these source

Ibid.

†*Ibid.*

categories and meets the exemption level in **15A NCAC 2D .0902(h)**, then the source is exempted.*

If the Division identifies a new nonattainment area, it would need to amend Rule **15A NCAC 2D .0909** or adopt a new rule to establish a compliance schedule for the new area.

The final compliance date is set out in Rule **15A NCAC 2D .0909**, which is three years from the time that the Director's notice appears in the North Carolina Register.†

BULK GASOLINE PLANTS: 15A NCAC 2D .0926

Rule **15A NCAC 2D .0926** does not apply to facilities that deliver only to motor vehicles.

BULK GASOLINE TERMINALS: 15A NCAC 2D .0927

Calculating Throughput

The key in determining whether a facility is a bulk gasoline plant or bulk gasoline terminal is an average daily throughput. If the average daily throughput is more than 20,000 gallons of gasoline, then the facility is a bulk gasoline terminal. If the average daily throughput is less than 20,000 gallons of gasoline, then the facility is a bulk gasoline plant.

Rule **15A NCAC 2D .0926**, Bulk Gasoline Plants, describes how to calculate average daily throughput. Average daily throughput of gasoline equals the annual throughput of gasoline divided by 312 days. Rule **15A NCAC 2D .0927**, Bulk Gasoline Terminals, does not describe the method to use to calculate average daily throughput. Therefore, to be consistent, average daily throughput of gasoline under Rule **15A NCAC 2D .0927** should be calculated by dividing the annual throughput of gasoline by 312 days.‡

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*Thom Allen to Kirk Rife, "Re: New VOC Regs—effective July 1, 2000?", 17 May, 2000 (e-mail).

†*Ibid.*

‡Thomas C. Allen II to Joan Liu, 4 Mar. 1996 (letter on calculating average daily throughput).

Self-Supporting Structure

A gasoline storage tank with an external steel roof with a center column and an internal floating roof equipped with primary and rim-mounted secondary seals satisfies the requirements of **15A NCAC 2D .0927(f)**.*

Tank out of Service

Under **15A NCAC 2D .0927**, Bulk Gasoline Terminals, a tank is considered to have been taken out of service once it has been degassed. A tank that has been emptied so that it may be filled with a different product is not considered to have been taken out of service if it is not degassed.†

Increased Benzene Emissions

Under **15A NCAC 2D .0927(i)** the increase in volatile organic compound emissions should be determined based on the difference between the future actual emission rate and a representative existing actual emission rate.‡

GASOLINE SERVICE STATIONS STAGE I: 15A NCAC 2D .0928

Storage Tanks Containing Ethanol Blend

Storage tanks containing an ethanol-gasoline blend that is used as a fuel for motor vehicles are covered under **15A NCAC 2D .0928** if the Reid vapor pressure of the blend is four psia or greater.¶

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*Thomas Allen to Rodney A. Gibson, "Definition of Self-Supporting Structure Under 15A NCAC 2D .0927, Bulk Gasoline Terminals," 30 May 1996 (letter).

†Brock Nicholson to Regional Supervisors, *et al.*, "Tank out of Service" (memorandum).

‡Michael Brandon to Nicola Ellis, "Air Permit No. 04468R12, Motiva Enterprise, LLC, . . ." 2 May 2001 (letter).

¶Mike Abraczinskas to Donnie Redmond, "Vapor Recovery for E85," 5 Jan. 1999 (e-mail).

SOLVENT METAL CLEANING: 15A NCAC 2D .0930

In **15A NCAC 2D .0930 (e)(2)(B) and (f)(4)(B)** the 10 inches are measured from the top of the design operating level of the vapor zone. The purpose of this requirement is to prevent spraying above the vapor level.*

In **15A NCAC 2D .0930(e)(2)(C) and (f)(4)(C)** the vapor level control thermostat should be activated when the solvent vapor rises above the design operating level of the vapor zone.†

GASOLINE TRUCK TANKS AND VAPOR COLLECTION SYSTEMS: 15A NCAC 2D .0932

Under **15A NCAC 2D .0932(d)(5)** the owner or operators of bulk gasoline plants and bulk gasoline terminals are required to monitor (test) their vapor collection systems at least once every year. If after two complete annual checks, no more than 10 leaks are found, the Director may allow a decrease in the frequency of monitoring. If more than 20 leaks are found, the Director may require the frequency of monitoring to be increased. Gasoline service stations and gasoline dispensing facilities are not required to monitor their vapor recovery systems regularly. The Director may require monitoring of gasoline service stations and dispensing facilities on a case-by-case basis when there is cause to believe that the equipment is not properly working.

*Thomas Allen to N1EA505, "Interpretation of 2D .0930," 9 Aug. 1996 (e-mail).

†*Ibid.*

COATING OF MISCELLANEOUS METAL PARTS AND PRODUCTS: 15A NCAC 2D .0934

Lawn mower paints are considered extreme performance coatings. Therefore, the 6.7 pound VOC per gallon of solids standard applies.*

GRAPHIC ARTS: 15A NCAC 2D .0936

For the purposes of **15A NCAC 2D .0936**, a "printing system" referred to in Subparagraph (d)(4) consists of all connected stages in which ink is applied or evaporated, i.e., it includes all interim stages in a continuous process. The combined emissions of all solvents emitted from each such printing system could not exceed 30 percent of what would have been emitted if solvent-borne inks had been used. There is no averaging time; the amount of solvent by volume in the inks as formulated to comply with Subparagraph (d)(4) must be 30 percent or less of that amount by volume in the inks using solvent formulation. The formulations of multiple inks may be added to determine the compliance status of any printing system.

To determine the allowable pounds of solvent per gallon ink under Subparagraph (d)(4), the following should be used:

$$0.30\frac{(S_1)(a_1)+(S_2)(a_2)}{(a_1)+(a_2)} = gal\ of\ solvents/gal\ of\ ink$$

where S_1 = % solvent by volume of ink 1;
S_2 = % solvent by volume of ink 2;
and inks are mixed at a ratio of a_1:a_2.

The permit of a source seeking to comply with **15A NCAC 2D .0936** using Subparagraph (d)(4) must go through the public comment process.†

*R. Paul Wilms to Charles D. Blackwell, "Interpretation of 15 NCAC 2D .0934(d)(3), Coating of Miscellaneous Metal Parts and Products—Extreme Performance Coating," n.d. (letter).

†Fin Johnson to Don R. Willard,, "Title 15 North Carolina Administrative Code Chapter 2D .0936, 'Graphic Arts,'" 30 Jan. 1986 (letter).

VOC EMISSIONS FROM TRANSFER OPERATIONS: 15A NCAC 2D .0948

15A NCAC 2D .0948 replaced **15A NCAC 2D .0518(c)** when it was repealed. Transfer operations covered under **15A NCAC 2D .0518(c)** are now covered under **15A NCAC 2D .0948**, and should continue to comply with all monitoring, recordkeeping, and reporting requirements in the permit for the transfer operation unless the material being loaded has a vapor pressure less than 1.5 pounds per square inch. Unlike **15A NCAC 2D .0518(c)**, which did not have a vapor pressure cutoff, **15A NCAC 2D .0948** does. "Loading operation" in **15A NCAC 2D .0948** should mean the same as "loading facility" in **15A NCAC 2D .0518(c)**. Each loading rack is a loading operation.*

To determine if submerged loading or another equivalent emissions reduction technique is needed under **15A NCAC 2D .0948**, the throughput from all loading racks and booms are added for each individual volatile organic compound with a vapor pressure of 1.5 psi or greater. If the throughput of any volatile organic compound exceeds 20,000 gallons in any one day, then submerged loading or equivalent is required.

STORAGE OF MISCELLANEOUS VOLATILE ORGANIC COMPOUNDS: 15A NCAC 2D .0949

15A NCAC 2D .0949 replaced **15A NCAC 2D .0518(b)** when it was repealed. Tanks that were covered under **15A NCAC 2D .0518(b)** are now covered under **15A NCAC 2D .0949** and should continue to comply with all monitoring, recordkeeping, and reporting requirements in the permit for the storage of liquid organic compounds.†

*"Guidance for Implementing New VOC Rule Changes," revised 7 Nov. 2000.

†"Guidance for Implementing New VOC Rule Changes," revised 7 Nov. 2000.

MISCELLANEOUS VOLATILE ORGANIC COMPOUND EMISSIONS: 15A NCAC 2D .0951

The exemptions in **15A NCAC 2D .0902(h)** apply to **15A NCAC 2D .0951**, i.e., a source whose emissions of volatile organic compounds are less than 15 pounds per day is exempt. Currently, **15A NCAC 2D .0951** does not apply to anyone except possibly some coating operations that chose to comply with it under old (and now repealed) Rule **15A NCAC 2D .0518**. In the future, it may apply to sources in future ozone nonattainment areas.*

If **15A NCAC 2D .0951** is extended to apply to a source in a maintenance area through a Director's notification in the North Carolina Register, the schedule in **15A NCAC 2D .0909** would apply. If **15A NCAC 2D .0951** is extended to apply to a new nonattainment area, a new schedule would have to be written and adopted into the rules.†

VAPOR RETURN PIPING FOR STAGE II VAPOR RECOVERY: 15A NCAC 2D .0953

15A NCAC 2D .0953(d)(5) requires all vapor return and vent piping to 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. The swing joint is satisfied by 90° elbows with a straight pipe at least four feet long between the two elbows.‡

Independent Small Business Marketer of Gasoline

15A NCAC 2D .0953 defines an independent small business marketer of gasoline as "a facility that qualifies under Section 324 of the Federal Clean Air Act." This Section describes an independent small business marketer of gasoline as follows:

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*Thom Allen to Kirk Rife, "Re: New VOC Regs—effective July 1, 2000?", 17 May, 2000 (e-mail).

†*Ibid.*

‡Prakash Menon to W. Quentin Best,, "Re: Stage II Piping – "Swing Joints," 11 Sept. 1998 (e-mail).

(a) The regulations under this Act applicable to vapor recovery from fueling of motor vehicles at retail outlets of gasoline shall not apply to any outlet owned by an independent small business marketer of gasoline having monthly sales of less than 50,000 gallons. In the case of any other outlet owned by an independent small business marketer, such regulations shall provide, with respect to independent small business marketers of gasoline, for a three-year phase-in period for the installation of such vapor recovery equipment at such outlets under which such marketers shall have—

(1) 33 percent of such outlets in compliance at the end of the first year during which such regulations apply to such marketers,

(2) 66 percent at the end of such second year, and

(3) 100 percent at the end of the third year.

(b) Nothing in subsection (a) shall be construed to prohibit any State from adopting or enforcing, with respect to independent small business marketers of gasoline having monthly sales of less than 50,000 gallons, any vapor recovery requirements for mobile source fuels at retail outlets. Any vapor recovery requirement which is adopted by a State and submitted to the Administrator as part of its implementation plan may be approved and enforced by the Administrator as part of the applicable implementation plan for that State.

(c) For purposes of this section, an independent small business marketer of gasoline is a person engaged in the marketing of gasoline who would be required to pay for procurement and installation of vapor recovery equipment under section 324 of this Act or under regulations of the Administrator, unless such person—

(1)(A) is a refiner, or

(B) controls, is controlled by, or is under common control with, a refiner.

(C) is otherwise directly or indirectly affiliated (as determined under the regulations of the Administrator) with a refiner or with a person who controls, is controlled by, or is under a common control with a refiner (unless the sole affiliation referred to herein is by means of a supply contract or an agreement or contract to use a trademark, trade name, service mark, or other identifying symbol or name owned by such refiner or any such person), or

(2) receives less than 50 percent of his annual income from refining or marketing of gasoline.

For the purpose of this section, the term "refiner" shall not include any refiner whose total refinery capacity (including the refinery capacity of any person who controls, is controlled by, or is under common control with, such refiner) does not exceed 65,000 barrels per day. For purposes of this section, "control" of a corporation means ownership of more than 50 percent of its stock.

WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS: 15A NCAC 2D .0958

The rules in Section **15A NCAC 2D .0900** do not apply to compounds that the EPA has determined to have negligible photochemical reactivity. However, if these compounds are contained in a mixture with volatile organic compounds, then the requirements of **15A NCAC 2D .0958** apply to them as part of that mixture—separating the mixture into volatile organic compounds and non-volatile organic compounds is seldom practical.*

15A NCAC 2D .0958 has an extremely broad coverage. With the exception of architectural or maintenance coating and sources subject to the furniture MACT, this Rule applies to every facility using VOC as solvents, carriers, material processing media, or industrial chemical reactants, or other similar uses or that mix, blend, or manufacture VOC, or emit VOC as a product of chemical reactions. This Rule applies to sources covered under NSPS and MACT. However, the substantive parts of this Rule—Paragraphs (c) and (d)—apply on a source basis. Thus, if a source emits no more than 15 pounds of VOC per day, it is not covered under the requirements of Paragraph (c) and (d). It is possible for a facility covered by this rule not to have any sources covered because each source emits less than 15 pounds of VOC per day.†

Although Rule **15A NCAC 2D .0958** applies to a facility as a whole, it only imposes requirements on individual sources. It has two primary purposes: (1) to provide some minimum VOC control and (2) to serve as an air toxic trigger for VOC emitters.‡

15A NCAC 2D .0958(e) requires sources with control devices that were installed to comply with **15A NCAC 2D .0518** to continue to maintain and operate the control devices unless the Director determines that removal of the control device does not cause or contribute to a violation of the ozone ambient air quality standard. No determination has

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*"Guidance for Implementing New VOC Rule Changes," revised 7 Nov. 2000.

†*Ibid.*

‡*Ibid.*

yet been made. The most convincing way to make this determination is through modeling. However, modeling may not be the only way. A demonstration that shows that the increase in VOC emissions is insignificant may also suffice. In any event, if the control device is being used to avoid PSD or some other requirement, then the control device must continue to be used to avoid these other requirements. Furthermore, a source with a control device is still subject to the requirements of **15A NCAC 2D .0958(c)** and **(d)**.*

15A NCAC 2D .0958(f) requires sources that have complied with **15A NCAC 2D .0518** by complying with a rule in Section **15A NCAC 2D .0900** to continue to comply with that rule unless the Director determines that removing this requirement will not cause or contribute to a violation of the ozone standard. However, a demonstration here becomes meaningless because the requirements of **15A NCAC 2D .0518** were applied on a coating basis. The coating had to meet either the low solvent requirement of a rule in **15A NCAC 2D .0900** or the nonphotochemical definition in **15A NCAC 2D .0518**. Thus, coatings could be substituted at will as long as they met one of these two requirements. Furthermore, a source that is covered under another Section **15A NCAC 2D .0900** rule is also covered under **15A NCAC 2D .0958**, including Paragraphs (c) and (d).†

The following are responses to some of the questions or concerns that have been raised on interpreting the requirements of **15A NCAC 2D .0958**:

1. Paragraph (c)(1) requires storing material in containers covered with a tightly fitting lid when not in use. To meet the requirement of this Paragraph a seal is not needed between the lid and container. Many containers are being used that have metal lids without any kind of seal. For the purposes of this Rule, these containers can satisfy the requirements of this Paragraph. However, the lid does need to be free of cracks, holes, and other defects and closed when the container is not in use.
2. Paragraph (c)(1) refers to waste material containing volatile organic compounds. For the purposes of the Paragraph, waste material means spent solvent or coating material; it does not include coated product waste.

**Ibid.*

†*Ibid.*

3. Paragraph (c)(1) does not apply to coating mixing vessels. It applies only to containers used to store VOC material.
4. Paragraph (c)(4) does not apply to processes designed to clean these types of absorbent materials. It applies to activities like cleaning a sponge or rag in a bucket of solvent.
5. In Paragraph (c)(5) and (6), "solvent" means solvent in the traditional or common usage of the word—it essentially means the same thing as "solvent" in 2D .0518(d), a VOC used as a cleaner or carrier. If a VOC that is normally used as a reactant is used to clean lines, then for this usage this VOC becomes a solvent and must be drained into a closable container, which is closed after each use.
6. In Paragraph (c)(5), "supply line" means any type of supply line, not just coating supply lines.
7. In Paragraph (c)(6), the requirement to pour spent cleaning solvent into a closed container does not apply to reactors, vats, and other containers where the spent cleaning solvent is drained and piped to a waste treatment plant.
8. If water or water and detergent or soap are used to clean equipment, this cleaning process is not covered under this Rule even if the water picks up small amounts of VOC as a result of the cleaning.
9. Water based solvents, coatings, or materials that contain insignificant amounts of VOC are not covered under this Rule.*

Monitoring, Recordkeeping, and Reporting

All the monitoring, recordkeeping, and reporting associated with complying with **15A NCAC 2D .0518(d)** by solvent formulation are no longer needed and should be voided. **15A NCAC 2D .0958** does not require any monitoring, recordkeeping, or reporting except under Paragraph (e), when a control device has been used to comply with **15A NCAC 2D .0518**, and Paragraph (f), when compliance with a rule in **15A NCAC 2D .0900** has been used to comply with **15A NCAC 2D .0518.** Possibly, with the rare exception of a habitual problem source, recordkeeping and reporting should not be required to implement **15A NCAC 2D .0958.** In this respect, this rule is analogous to traffic rules.†

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*Ibid.

†Ibid.

Air Toxic Issues

15A NCAC 2D .0958 can be used to trigger the air toxic rules. In this respect, it should be treated like any other rule in triggering the air toxic requirements. If a new facility is not exempted from permitting and has at least one source covered by this Rule, it has triggered an air toxic evaluation. Modifications at an existing facility covered by this Rule are treated the same as modifications at facilities covered by any other rule in **15A NCAC 2D**. Changes in formulations, solvents, etc. continue to be treated as they are currently treated under the air toxic rules.*

TRANSFER EFFICIENCY

The rules in Section **15A NCAC 2D .0900** do not account for transfer efficiency. If the owner or operator of a source wants to use transfer efficiency to comply with VOC RACT, he may use the procedures in **15A NCAC 2D .0952**, Petition for Alternative Controls. The latest EPA policies and guidance on transfer efficiency should be used.

EMISSIONS TRADING (BUBBLING)

Except for **15A NCAC 2D .0937**, Manufacture of Pneumatic Rubber Tires, some control strategy in **15A NCAC 2D .0936**, Graphic Arts, and possibly **15A NCAC 2D .0935**, Factory Surface Coating of Flat Wood Paneling, emissions trading (bubbling) is not allowed in the rules in Section **15A NCAC 2D .0900**. If the owner or operator of a source wants to use emissions trading to comply with VOC RACT, he may use the procedures in **15A NCAC 2D .0952**, Petition for Alternative Controls. He must follow the procedures in **15A NCAC 2D .0501** and the latest EPA policies and guidance on emissions trading.

**Ibid.*

COMPUTING EMISSION RATES

Computing Emission Rate When Two or More Coatings Are Combined

Computing emission rate in lb VOC/gal solids when two or more coatings are combined when applied:

	coating 1	coating 2
Weight of volatiles (lb VOC/gal coating)	V_1	V_2
Volume of solids (gal solids/gal coating)	S_1	S_2

f_1 = fraction of final coating as applied composed of coating 1
f_2 = fraction of final coating as applied composed of coating 2
$f_1 + f_2 = 1$

$$\frac{[(V_1)(f_1)]+[(V_2)(f_2)]}{[(S_1)(f_1)+[(S_2)(f_2)]} = lb\ VOC/gal\ solids$$

or alternatively, if coating as applied is a mixture at the ratio of a_1:a_2

$$\frac{[(V_1)(a_1)+(V_2)(a_2)]}{[(S_1)(a_1)+(S_2)(a_2)]} = lb\ VOC/gal\ solids$$

NOTE: This method works if one of the coatings is 100% solids or 100% solvent.

CONVERSION FROM LB VOC/GAL COATING TO LB VOC/GAL SOLIDS

Given : lb VOC / gal coating (less water) = **A**

Given: VOC density → lb VOC / gal VOC = **B**

Step 1 Calculate volume of VOC in 1 gal of coating

gal VOC / gal coating = **J** = **A** / **B**

Step 2 Calculate volume of solids in 1 gal of coating

gal solids = **K** = 1 – **J**

Step 3 Calculate number of gal of coating it takes to get 1 gal of solids

gal coating / gal solids = **L** = 1 / **K**

Step 4 Convert lb VOC / gal coating to lb VOC / gal solids

lb VOC / gal solids = **M** = **A** ∗ **L**

or **M** = **A** * {1 / [1 - (**A** / **B**)]}