

**FINAL**

**North Carolina**  
**Clean Air Act Sections 193 and 110(l)**  
**Noninterference**  
**Demonstration**  
**For**  
**Repeal of Rule 15A NCAC 02D .1300,**  
**Oxygenated Gasoline Standard**



**November 29, 2017**

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## **PREFACE:**

This document contains North Carolina's Clean Air Act Sections 193 and 110(l) noninterference demonstration for repeal of 15A NCAC 02D .1300, Oxygenated Gasoline Standard.

**TABLE OF CONTENTS**

1.0 INTRODUCTION ..... 1

2.0 BACKGROUND ..... 2

    2.1 History of North Carolina’s Attainment Status with the CO NAAQS ..... 2

    2.2 History of North Carolina Oxygenated Fuel Standard Rules..... 4

3.0 PROPOSED REPEAL OF OXYGENATED GASLINE STANDARD RULES..... 4

4.0 NON-INTERFERENCE WITH THE CARBON MONOXIDE NAAQS..... 4

5.0 NON-INTERFERENCE WITH OZONE, PM, SO<sub>2</sub>, NO<sub>2</sub>, AND LEAD NAAQS ..... 6

6.0 CONCLUSION..... 7

**List of Tables**

Table 1. Recent 8-Hour CO Air Quality Data for Monitoring Sites in North Carolina ..... 5

# CLEAN AIR ACT SECTIONS 193 AND 110(I) DEMONSTRATION

## 1.0 INTRODUCTION

The oxygenated gasoline standard rules in the North Carolina Administrative Code (NCAC) are contained in Chapter 15A, section 02D .1300 (15A NCAC 02D .1301 - .1305). The Division of Air Quality (DAQ) is proposing to repeal North Carolina's oxygenated gasoline standard rules. Because these rules were included in the State Implementation Plans (SIPs) for three areas that have subsequently been designated as attainment with the carbon monoxide (CO) National Ambient Air Quality Standard (NAAQS), the DAQ must submit a demonstration to the U.S. Environmental Protection Agency (EPA) for EPA's approval to repeal the rules in accordance with Sections 193 and 110(l) of the 1990 Clean Air Act Amendments (CAAA).

Section 193 (General Savings Clause) of the CAAA requires that:

*“Each regulation, standard, rule, notice, order and guidance promulgated or issued by the Administrator under this chapter, as in effect before November 15, 1990, shall remain in effect according to its terms, except to the extent otherwise provided under this chapter, inconsistent with any provision of this chapter, or revised by the Administrator. No control requirement in effect, or required to be adopted by an order, settlement agreement, or plan in effect before November 15, 1990, in any area which is a nonattainment area for any air pollutant may be modified after November 15, 1990, in any manner unless the modification insures equivalent or greater emission reductions of such air pollutant.”*

Section 110(l) of the 1990 CAAA states:

*“Each revision to an implementation plan submitted by a State under this chapter shall be adopted by such State after reasonable notice and public hearing. The Administrator shall not approve a revision of a plan if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress (as defined in section 171 of this title), or any other applicable requirement of this Act.”*

The following “noninterference demonstration” is provided to show that the repeal of the state oxygenated gasoline standard rules will not interfere with North Carolina's ability to continue to attain and maintain compliance with the current CO, ozone, particulate matter (PM), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), and lead NAAQS.

A “Gasoline” is defined in the North Carolina General Statute (G.S. 105-449.60 (22)) as any of the following:

*a) All products that are commonly or commercially known or sold as gasoline and are suitable for use as a fuel in a highway vehicle, other than products that have an American Society for Testing Materials octane number of less than 75 as determined by the motor method. The term does not include aviation gasoline.*

- b) *A petroleum product component of gasoline, such as naphtha, reformat, or toluene.*
- c) *Gasohol.*
- d) *Fuel alcohol.*

## **2.0 BACKGROUND**

### **2.1 History of North Carolina's Attainment Status with the CO NAAQS**

The primary NAAQS for CO include (1) an 8-hour standard of 9.0 parts per million (ppm), measured using the annual second-highest 8-hour concentration for two consecutive years as the design value; and (2) a 1-hour average of 35 ppm, using the second-highest 1-hour average within a given year. The EPA adopted these standards in 1971 and has retained the standards without any changes since its last review of the standards in 2011.<sup>1</sup>

In the late 1970's, the Charlotte area experienced violations of the NAAQS and was designated nonattainment for the 8-hour CO standard in 1978. The Charlotte, Raleigh/Durham, and Winston-Salem areas were recommended as nonattainment for the 8-hour CO standard by the Governor in a March 15, 1991 letter to EPA's Region IV Administrator as required by section 107(d)(1)(A) of the 1990 CAAA.

Although the Charlotte area had an attaining design value of 8.4 ppm, based on 1988 and 1989 data, the 1978 nonattainment designation was reaffirmed by operation of law on the day of enactment of the 1990 CAAA. Therefore, the Charlotte area was designated as "not-classified" and was given, under the CAAA, five years from the date of official designation to attain the standard and therefore had an attainment deadline of November 15, 1995. In October 1994, the State of North Carolina submitted a redesignation request to EPA and the Charlotte area was designated attainment/maintenance for CO in September 1995.

The Raleigh/Durham and Winston-Salem areas were designated nonattainment for the 8-hour CO standard and classified as "moderate" under the provisions outlined in Sections 186 and 187 of the CAAA. The design values were 10.9 ppm and 9.7 ppm (based on 1988 and 1989 data) for Raleigh/Durham and Winston-Salem, respectively. Since the design values were less than 12.7 ppm, both areas were designated as "low moderate". With a moderate designation, both areas had until December 31, 1995 to attain the standard.

For the Raleigh/Durham area, the State submitted a request to EPA to redesignate this area to maintenance in October 1994 and the area was redesignated to attainment/maintenance for CO in September 1995.

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<sup>1</sup> See EPA's "Table of Historical Carbon Monoxide (CO) National Ambient Air Quality Standards (NAAQS)," <https://www.epa.gov/co-pollution/table-historical-carbon-monoxide-co-national-ambient-air-quality-standards-naaqs>.

In April 1994, the State of North Carolina submitted a request to EPA to redesignate the Winston-Salem area to maintenance status based upon three years of clean air quality data. In November 1994, this area was redesignated to attainment/maintenance for CO.

In March 2005, the State submitted the second maintenance plan to EPA for all three areas. This plan was approved by EPA on March 24, 2006 (71 FR 14817), and a clarification regarding this approval was published in June 2007. The June 2007 clarification was with respect to moving the oxygenated fuel standard to a contingency measure in the plan.

When an area has monitoring data at 85% of the CO NAAQS or lower, a state may choose the less rigorous maintenance plan option of a limited maintenance plan. Certified monitoring data from 2008-2011 showed all three areas to be below the 8-hour CO NAAQS 85% threshold of 7.65 ppm making the areas eligible for a limited maintenance plan. Therefore, on August 2, 2012, the DAQ submitted to EPA a SIP revision entitled, "*Carbon Monoxide Limited Maintenance Plan for the Charlotte, Raleigh/Durham & Winston-Salem CO Maintenance Areas*," that EPA approved on June 20, 2013 (78 FR 37118). When the limited maintenance plan was submitted, ambient monitoring data for all three maintenance areas in the state were 16% to 23% of the CO NAAQS. The limited maintenance plan included an emissions inventory for a typical winter day for the year 2010, a commitment to continue operation of the air monitoring network to verify the attainment status over the attainment period, and contingency measures to ensure prompt action is taken to correct any violation of the CO NAAQS. A limited maintenance plan is not required to include motor vehicle emissions budgets for transportation conformity purposes. However, transportation plan revisions and transportation improvement program conformity determinations must satisfy all other applicable requirements of the transportation conformity rule and hot-spot requirements must be satisfied for transportation projects (40 CFR 93.109(e)).

In 2015, each area completed its 20-year maintenance plan period and EPA revised the designation for each area to "attainment". The limited maintenance plan ended for Forsyth County on May 23, 2015, and Durham, Wake, and Mecklenburg Counties on September 18, 2015. On December 16, 2015, EPA issued letters documenting that the transportation conformity requirements under Section 176(c) of the CAAA have ended because the areas have reached the end of the 20-year maintenance plan after which transportation conformity requirements do not apply.<sup>2</sup>

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<sup>2</sup> EPA's letters for the three areas are available on the DAQ website at: <https://deq.nc.gov/about/divisions/air-quality/air-quality-planning/state-implementation-plans/carbon-monoxide-limited-maintenance-plans>.

## **2.2 History of North Carolina Oxygenated Fuel Standard Rules**

The oxygenated gasoline standard rules codified at 15A NCAC 02D Section .1300 were adopted by North Carolina and included in the limited maintenance plan as a contingency measure that would be triggered if an area exceeded the 8-hour CO standard. If triggered and implemented, the rules would have set requirements for all gasoline sold wholesale for use or for all gasoline sold retail, offered for use, dispensed, or otherwise provided for use in any spark-ignition engine other than aircraft in the Charlotte, Winston-Salem and Raleigh/Durham areas for the four-month period beginning November 1 and running through the last day of February of the following year. The rules include:

15A NCAC 02D .1301, Purpose

15A NCAC 02D .1302, Applicability

15A NCAC 02D .1303, Definitions

15A NCAC 02D .1304, Oxygen Content Standard

15A NCAC 02D .1305, Measurement and Enforcement

15A NCAC 02D Section .1300 is proposed for repeal because the rules were part of a contingency plan in the event of an exceedance of the CO NAAQS and have become unnecessary since the state has been in attainment with the CO NAAQS for over 20 years. The ambient CO levels remain very low statewide, and the CO limited maintenance plan for the Charlotte, Raleigh/Durham & Winston-Salem CO Maintenance Areas has expired. In addition, repeal of these rules is not anticipated to interfere with attainment or maintenance of the CO NAAQS or any other NAAQS.

## **3.0 PROPOSED REPEAL OF OXYGENATED GASOLINE STANDARD RULES**

The oxygenated gasoline standard rules are contained in sections 15A NCAC 02D .1300. The DAQ has identified the rules in these sections as outdated requirements that are not providing environmental benefit and recommended repeal of these rules to the EMC. The rules, which apply statewide, are focused on addressing CO emissions; however, North Carolina does not have any CO nonattainment areas.

## **4.0 NON-INTERFERENCE WITH THE CARBON MONOXIDE NAAQS**

Charlotte and Raleigh/Durham were redesignated attainment/maintenance for CO in September 1995 and Winston-Salem in October 1994. Since this time, the three areas have continued to meet the CO NAAQS.

Table 1 shows air quality data for the 8-hour CO standard in the three areas for 2010 through 2016. The CO monitoring data for 2015 for all three areas are well below the 8-hour CO standard. The Charlotte area has a regional 8-hour CO design value of 1.3 ppm or 14% of the



NAAQS, the Raleigh/Durham area has a regional 8-hour CO design value of 1.2 ppm or 13% of the NAAQS, and the Winston-Salem area has a regional 8-hour CO design value of 1.5 ppm or 17% of the NAAQS. For 2016 these areas are also well below the 8-hour CO standard. The Charlotte area has a regional 8-hour CO design value of 1.2 ppm or 13% of the NAAQS, the Raleigh/Durham area has a regional 8-hour CO design value of 1.5 ppm or 17% of the NAAQS (the higher readings were impacted by wildfire smoke in the region during month of November), and per EPA approval the Winston-Salem CO monitor shut down at the end of 2015.

**Table 1. Recent 8-Hour CO Air Quality Data for Monitoring Sites in North Carolina**

| Monitor Site ID No. and County    | Year | Annual 2 <sup>nd</sup> Highest 8-Hour Concentration (ppm) <sup>1</sup> | Design Value (ppm) <sup>2</sup> | Percent of Standard (9 ppm) |
|-----------------------------------|------|--|---------------------------------|-----------------------------|
| <b><i>Charlotte Area</i></b>      |      |  |                                 |                             |
| 371190041<br>Mecklenburg          | 2010 | 1.7  | ---                             | ---                         |
|                                   | 2011 | 1.5  | 1.7                             | 19                          |
|                                   | 2012 | 1.5  | 1.5                             | 17                          |
|                                   | 2013 | 1.6  | 1.6                             | 18                          |
|                                   | 2014 | 1.3 <sup>3</sup>   | 1.6                             | 18                          |
|                                   | 2015 | 1.2  | 1.3                             | 14                          |
|                                   | 2016 | 1.0  | 1.2                             | 13                          |
| <b><i>Raleigh/Durham Area</i></b> |      |  |                                 |                             |
| 371830014<br>Wake                 | 2010 | 1.3  | ---                             | ---                         |
|                                   | 2011 | 1.4  | 1.4                             | 16                          |
|                                   | 2012 | 1.3  | 1.4                             | 16                          |
|                                   | 2013 | 1.2  | 1.3                             | 14                          |
|                                   | 2014 | 1.2  | 1.2                             | 13                          |
|                                   | 2015 | 1.2  | 1.2                             | 13                          |
|                                   | 2016 | 1.5 <sup>4</sup>   | 1.5                             | 17                          |
| <b><i>Winston-Salem Area</i></b>  |      |  |                                 |                             |
| 370670023<br>Forsyth              | 2010 | 1.9  | ---                             | ---                         |
|                                   | 2011 | 2.1  | 2.1                             | 23                          |
|                                   | 2012 | 1.2  | 2.1                             | 23                          |
|                                   | 2013 | 1.7  | 1.7                             | 19                          |
|                                   | 2014 | 1.5  | 1.7                             | 19                          |
|                                   | 2015 | 1.3  | 1.5                             | 17                          |
|                                   | 2016 | Winston-Salem CO monitor shut down at the end of 2015.                 |                                 |                             |

<sup>1</sup> The annual 2<sup>nd</sup> highest 8-hour CO concentration was obtained by running a Frequency Distribution Report for the three CO monitors from EPA's Air Quality System (AQS) on June 22, 2015.

<sup>2</sup> The design value is based on the maximum value of the 2<sup>nd</sup> highest 8-hour CO concentration observed for a consecutive 2-year period. For example, for 2016 for the Charlotte area, the design value is 1.2 ppm because it is the maximum value of the annual 2<sup>nd</sup> highest 8-hour CO concentrations for 2015 (i.e., 1.2 ppm) and 2016 (i.e., 1.0 ppm).

<sup>3</sup> In 2014, the CO monitor in Charlotte was replaced with a new CO monitor at the end of the first quarter. This value is the annual 2<sup>nd</sup> highest value using the combined data from both monitors.

<sup>4</sup> This value, which is somewhat higher than for previous years, was recorded during November 2016 and is believed to be affected by transport of smoke from wildfires in Western North Carolina and Eastern Tennessee.

For the 1-hour CO standard of 35 ppm, all three areas have recent design values that range from 4.0% to 6.6% of the standard. For the Charlotte area, ambient monitoring data for 2015 and 2016 show design values of 1.5 and 1.4 ppm, respectively. For the Raleigh/Durham area, ambient monitoring data for 2015 and 2016 show design values of 1.7 and 2.3 ppm, respectively. For the Winston-Salem area, the design value was 1.9 ppm for the year 2015 (after which CO monitoring was shut down).

## **5.0 NON-INTERFERENCE WITH OZONE, PM, SO<sub>2</sub>, NO<sub>2</sub>, AND LEAD NAAQS**

All of North Carolina is designated attainment of the 1997 and 2008 8-hour ozone NAAQS. The new 2015 8-hour ozone NAAQS is 70 parts per billion (ppb). Based on certified ozone ambient monitoring data from 2014 through 2016, all of North Carolina is meeting the 2015 8-hour ozone standard.

The 2012 24-hour PM<sub>2.5</sub> NAAQS is set at 35 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) and annual PM<sub>2.5</sub> NAAQS is set at  $12\mu\text{g}/\text{m}^3$ . In 2014, EPA's Administrator determined that "no area in North Carolina violated the 2012 primary annual PM<sub>2.5</sub> standard or contributes to a nearby violation of the standard." North Carolina is in attainment with the 2012 PM<sub>2.5</sub> NAAQS throughout the state.

For large SO<sub>2</sub> sources subject to the SO<sub>2</sub> Data Requirements Rule, North Carolina is on track to demonstrate compliance through modeling or monitoring. All remaining areas are recommended to be designated attainment. The EPA is expected to take a formal action on these areas and certain modeled/monitored areas before December 2017.

The 2010 1-hour NO<sub>2</sub> NAAQS is set at 100 ppb, based on the 3-year average of the 98th percentile of the yearly distribution of 1-hour daily maximum concentrations. The annual standard of 53 ppb is based on the annual mean concentration. All NO<sub>2</sub> monitors in the state are measuring below the annual NO<sub>2</sub> standard, and all near-road monitors are measuring below the 1-hour NO<sub>2</sub> standard.

The 2008 lead NAAQS is set at 0.15 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), measured as a 3-month rolling average. On November 8, 2011, EPA designated the entire state of North Carolina as unclassifiable/attainment with the standard. In October 2016, EPA completed its review of the 2008 standard and decided to retain the 2008 standard without any changes. North Carolina's ambient lead levels since the 2008 standard was adopted have remained, and are expected to continue to remain, well below the standard. As explained in North Carolina's 2016-2017 Annual Monitoring Network Plan, the state no longer is required to monitor for lead under EPA monitoring criteria.

## 6.0 CONCLUSION

The oxygenated gasoline standard rules are proposed for repeal for the following reasons:

- A review of the 8-hour CO design value data over the past six years shows that each area is well below the standard. The most current design values for the Charlotte, Raleigh/Durham, and Winston-Salem areas are 13%, 17%, and 17% of the 9 ppm standard, respectively. In addition, for the 1-hour CO standard, all three areas have recent design values that range from 4.0% to 6.6% of the 35 ppm standard.
- The limited maintenance plan for the 8-hour CO standard for the Charlotte, Raleigh/Durham, and Winston-Salem areas ended in 2015 and all three areas are now classified as attainment with the standard.
- The oxygenated gasoline standard rules were included in the previous limited maintenance plan for the three areas as a contingency measure to control CO emissions, if needed. However, the three areas have maintained compliance with the CO NAAQS for over 20 years and the rules were never triggered or implemented because of the success of the foundation control measures included in the previous maintenance plan. Currently, the oxygenated gasoline standard rules are not providing an environmental benefit and have served only as an administrative function that is no longer needed.
- Because the oxygenated gasoline standard rules were never implemented, repealing the rules will not increase CO, NO<sub>x</sub> or total hydrocarbon vehicle exhaust emissions.<sup>3</sup> Therefore, this action will not interfere with attainment or maintenance of any of the CO, ozone, or NO<sub>2</sub> NAAQS.
- Based on the fact that all monitors statewide are measuring below the NAAQS for all of the criteria air pollutants, the DAQ has determined that repeal of oxygenated gasoline standard rules will not cause a violation of the ozone, PM, SO<sub>2</sub>, NO<sub>2</sub>, or lead NAAQS.

For these reasons, the DAQ concludes that repeal of the oxygenated gasoline standard rules will not interfere with continued attainment or maintenance of any applicable NAAQS. With this submission, the North Carolina DAQ believes the requirements of Sections 193 and 110(l) of the CAAA relative to repeal of the oxygenated gasoline standard rules have been met and requests that EPA approve repeal of 15A NCAC 02D Section .1300 rules from the North Carolina SIP.

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<sup>3</sup> Interagency Assessment of Oxygenated Fuels, Executive Office of the President, National Science and Technology Council, Washington, DC, June 1997, <https://clu-in.org/download/contaminantfocus/mtbe/ostpfin.pdf>.