



# **Small Entity Compliance Guide for the Tier 2/Gasoline Sulfur Final Rule**

Control of Emission of Air  
Pollution from New Motor  
Vehicles: Tier 2 Motor Vehicle  
Emission Standards and  
Gasoline Sulfur Control  
Requirements 65 FR 6698,  
February 10, 2000

## **Small Entity Compliance Guide for the Tier 2/Gasoline Sulfur Final Rule**

Control of Air Pollution from New Motor Vehicles: Tier 2  
Motor Vehicle Emission Standards and Gasoline Sulfur  
Control Requirements 65 FR 6698, February 10, 2003

Assessment and Standards Division  
Office of Transportation and Air Quality  
U.S. Environmental Protection Agency

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*This technical report does not necessarily represent final EPA decisions or positions.  
It is intended to present technical analysis of issues using data that are currently available.*

*The purpose in the release of such reports is to facilitate the exchange of  
technical information and to inform the public of technical developments which  
may form the basis for a final EPA decision, position, or regulatory action.*

## NOTICE

This guide was prepared pursuant to section 212 of the Small Business Regulatory Enforcement Fairness Act of 1996 (“SBREFA”), Pub. L. 104-121. The statements in this document are intended solely as guidance to aid you in complying with Control of Emission of Air Pollution from New Motor Vehicles: Tier 2 Motor Vehicle Emission Standards and Gasoline Sulfur Control Requirements (65 FR 6698, February 10, 2000). In any civil or administrative action against a small business, small government or small non-profit organization for a violation of the Tier 2 Motor Vehicle Emission Standards and Gasoline Sulfur Control Requirements, the content of this guide may be considered as evidence of the reasonableness or appropriateness of proposed fines, penalties or damages. EPA may decide to revise this guide without public notice to reflect changes in EPA’s approach to implementing this rule or to clarify and update text. To determine whether EPA has revised this guide and/or to obtain copies, contact EPA’s Small Business Ombudsman Office at [www.epa.gov/sbo](http://www.epa.gov/sbo) or 800-368-5888 or the Office of Transportation and Air Quality at [www.epa.gov/otaq](http://www.epa.gov/otaq) or c/o Mr. Tad Wysor, 734-214-4332.

## **Introduction**

This document is intended to assist small businesses in complying with the Environmental Protection Agency (EPA) rule commonly known as the “Tier 2 and Gasoline Sulfur” program. The complete name of the rule is “Control of Emission of Air Pollution from New Motor Vehicles: Tier 2 Motor Vehicle Emission Standards and Gasoline Sulfur Control Requirements” and it can be found in the Federal Register for February 10, 2000 beginning on page 6698 (65 FR 6698). Since the final rule was published, EPA has issued technical amendments to correct and clarify several aspects of the rule. (See <http://www.epa.gov/otaq/tr2home.htm> and click on “Final Rulemaking Documents” for the rule, the technical amendments, and related information.)

This program establishes more protective tailpipe emissions standards for all passenger vehicles, including sport utility vehicles (SUVs), minivans, vans and pick-up trucks. The new standards are required beginning with the 2004 model year. This regulation marks the first time that SUVs and other light-duty trucks—even the largest passenger vehicles—are subject to the same set of national pollution standards as cars.

In the same program, EPA established much more stringent requirements for sulfur in gasoline that will ensure the effectiveness of the highly-efficient emission-control systems that the new vehicles will use. Most refiners will respond to these sulfur standards by adding new equipment to remove sulfur from their gasoline production.

When the new tailpipe and gasoline sulfur standards are implemented, Americans will benefit from the clean-air equivalent of removing 164 million cars from the road. New passenger vehicles will be 77 to 95 percent cleaner than those on the road today and gasoline sulfur content will be 90 percent lower than gasoline today.

## **What Does the Tier 2 and Gasoline Sulfur Program Require?**

### ***For Vehicles...***

For companies that produce new vehicles (or convert vehicles to meet new-vehicle emission standards), EPA administers a large program that assures that these vehicles are certified to meet the appropriate emission standards in effect at the time they are sold and continue to meet the standards on the road for the useful life of the vehicle. In general, the new Tier 2 program will not affect the overall vehicle emission compliance program. What will change is the emission levels themselves, which are significantly more stringent than today’s standards.

While establishing more stringent emission requirements, the Tier 2 program also includes several provisions to provide flexibility and ease compliance. An averaging system will allow vehicle makers to certify vehicles at more than one emission level so long as their overall production meets a low average emission level (including 0.07 gram per mile for nitrogen oxides). Also, during the early years of the program, a phase-in program will allow higher

corporate average emissions while manufacturers move toward the final standards.

Small companies that certify vehicles tend not to mass produce new vehicles but rather convert existing vehicles to meet current standards or to meet current standards on a different fuel. This market segment includes, for example, the companies that convert a vehicle purchased in another country to meet U.S. standards or that convert a vehicle to run on alternative fuels. The table below lists the small business criteria for vehicle manufacturers and converters. The overall compliance program for vehicles has special provisions for small volume manufacturers (regardless of whether or not they are small businesses according to the criteria below).

In addition, the new Tier 2 program includes a requirement that manufacturers begin to phase in the production of Tier 2 compliant vehicles in 2004. However, the Tier 2 program also allows small entities that certify vehicles to postpone any production of Tier 2 compliant vehicles until the end of the phase-in period. This provision will allow these small entities the maximum time to prepare for certification to the new stringent standards.

There are currently about 40-50 companies that have received Certificates of Conformity or are likely to seek certification that we believe meet the small business criteria below. Our compliance staff have been working individually and collectively with these businesses on issues relating to the Tier 2 standards and broader compliance issues. If your business is considering certifying new or newly-converted vehicles and has not already contacted EPA, please do so as soon as possible at the contact number listed below.

### ***For Gasoline Producers...***

The new Gasoline Sulfur program will require refiners to produce gasoline at a much lower sulfur level than today's gasoline. After a short phase-in beginning January 1, 2004, refiners will meet an average sulfur standard of 30 parts per million of sulfur and a per-gallon sulfur cap of 80 parts per million.

For this program, refiners are defined as "small" if they have less than 1500 employees company-wide and a total crude oil capacity of less than 155,000 barrels per calendar day (see the table below). Refiners that meet these criteria will have a temporary gasoline sulfur requirement that is less stringent, depending on its gasoline 1997-98 sulfur level. In order that low sulfur gasoline reach the vehicles that need it, refiners and others in the distribution system have gasoline testing, reporting, and record-keeping requirements, most of which is very similar to those in the existing fuel programs.

EPA has approved "small refiner" status for 10 refiners and has been in contact routinely with these companies individually and as a group during the development of the rule and since the final rule was issued. In addition to using the materials in this Guide, we encourage these and any other refiners, importers, and businesses that distribute and market gasoline to continue to contact EPA with any questions or concerns (see the contact information below).

### **Who should use this Guide?**

The table below gives some examples of entities that may have to comply with the regulations and the criteria for deciding whether they qualify as “small.”

### Industries Containing Small Businesses Potentially Affected by Today’s Rule

<b>Industry</b>	<b>NAICS<sup>a</sup> Codes</b>	<b>SIC<sup>b</sup> Codes</b>	<b>Defined by SBA as a Small Business If:<sup>c</sup></b>
Motor Vehicle Manufacturers	336111 336112 336120	3711	< 1000 employees
Alternative Fuel Vehicle Converters	336311 541690	3592 8931	< 500 employees
	336312	3714	< 750 employees
	422720	5172	< 100 employees
	454312 811198 541514	5984 7549 8742	< \$5 million annual sales
Independent Commercial Importers of Vehicles and Vehicle Components	811112 811198 541514	7533 7549 8742	< \$5 million annual sales
Petroleum Refiners	324110	2911	< 1500 employees <sup>d</sup>
Petroleum Marketers and Distributors	422710	5171 5172	< 100 employees
	422720		

**NOTES**

- a. North American Industry Classification System
- b. Standard Industrial Classification system
- c. According to SBA’s regulations (13 CFR 121), businesses with no more than the listed number of employees or dollars in annual receipts are considered “small entities” for purposes of a regulatory flexibility analysis.
- d. For purposes of the Tier 2 and Gasoline Sulfur rule, the “small refiner” criteria also require that the refiner have a crude capacity of less than 155,000 barrels per calendar day.

### How do I obtain a copy of the rule?

You will find the complete requirements and flexibility provisions that apply to vehicle manufacturers and converters and to refiners, distributors, and marketers of gasoline under the Tier 2 and Gasoline Sulfur rule, as well as the more recent technical amendments to this rule, are available electronically at the following web site:

<http://www.epa.gov/otaq/tr2home.htm> under Final Rulemaking Documents. We encourage companies involved in any of these businesses to use these documents as the ultimate guide to compliance. See the contacts listed below for any questions or concerns.

## **Where do I go for help?**

A wide range of information about the Tier 2 and Gasoline Sulfur rule may be found at the following web sites: <http://www.epa.gov/otaq/tr2home.htm> and <http://www.epa.gov/otaq/cert/dearmfr/dearmfr.htm>. You can reach staff in EPA's Office of Transportation and Air Quality by telephone or email:

- For questions about compliance with the Tier 2 vehicle program: Mr. Russ Banush at 734-214-4925 or [banush.russell@epa.gov](mailto:banush.russell@epa.gov).
- For questions about compliance with the Gasoline Sulfur program: Mr. Tad Wysor at 734-214 4332 or [wysor.tad@epa.gov](mailto:wysor.tad@epa.gov).

## **What does this Guide include?**

Since the time the final rule was issued in early 2000, EPA has held several workshops, published Question-and-Answer documents, and issued formal guidance letters relating to compliance with this rule. In each of these presentations and documents, information of particular interest to small businesses was highlighted and placed in the larger context of the overall requirements that these entities are responsible for meeting. In a number of cases, EPA formally addressed the issues in technical amendments to the rule (see web site reference above). All of these materials are available at the web site listed above under

This Small Entity Compliance Guide compiles information from these workshops, Question and Answer documents, and guidance letters. The material is organized into two main categories reflecting the two main types of business that are subject to the Tier 2 and Gasoline Sulfur rule: 1) small businesses that seek a Certificate of Compliance for newly manufactured or converted light-duty vehicles or light-duty trucks, and 2) small refiners producing gasoline.

## **Appendix A. Materials Relating to Compliance by Small Entities with the Tier 2 Vehicle Emission Standards**

- Tier 2 Exhaust and Evaporative Emission Standards, Industry/EPA Workshop, March 21, 2001
  
- Announcement of Independent Commercial Importer Workshop on March 27, 2002 1-4 pm at EPA and Guidelines for Certification, Fuel Economy and Final Entry of ICI Vehicles (EPA Guidance Letter CCD-02-04, February 6, 2002)  
See <http://www.epa.gov/otaq/cert/dearmfr/dearmfr.htm>
  
- Information from March 27, 2002 Independent Commercial Importer Workshop (EPA Guidance Letter CCD-02-07, April 29, 2002)  
See <http://www.epa.gov/otaq/cert/dearmfr/dearmfr.htm>
  
- Workshop Announcement for Alternate Fuel Converters (EPA Guidance Letter CCD-02-02, January 11, 2002)  
See <http://www.epa.gov/otaq/cert/dearmfr/dearmfr.htm>
  
- Certification Guidance for Alternative Fuel Converters (EPA Guidance Letter CCD-02-12, August 29, 2002)  
See <http://www.epa.gov/otaq/cert/dearmfr/dearmfr.htm>



# Tier 2 Exhaust and Evaporative Emission Standards

Industry/EPA Workshop  
EPA Certification & Compliance Division

March 21, 2001 1-4 PM  
Ann Arbor, Michigan

## Tier 2 Quick Overview

- Final rule published Feb 10, 2000 (65 FR 6698).
- Technical Amendment signed Jan 19, 2001.
  - Text available on EPA web site
- Takes effect 2004-2009.
- Focus: exhaust NO<sub>x</sub>.
  - Provides large, early NO<sub>x</sub> reductions.
- Views vehicles and fuels as a system.
- Cuts gasoline sulfur from 300 to 30 ppm.
- Cuts evaporative standards roughly in half.

## Tier 2 Fundamentals

- Apply same set of standards to all LDV & LDTs.
  - Requires SUVs (<10,000 GVWR) meet light-duty standards
- Spread burden across vehicles and fuels.
- Provide significant & early NO<sub>x</sub> benefits to states.
- Harmonize with Calif where possible.

Sulfur Standards  
Phase In and Average NO<sub>x</sub> Standards

## Full Life Exhaust Emission Bins

### Footnotes to Bins Chart

- Bin 11 applies only to qualifying MDPVs.
- Higher NMOG,CO and HCHO values in bins 8, 9 and 10 apply only to HLDT/MDPVs.
- For bin 10, an optional NMOG of 0.280 applies only to qualifying LDT4s and MDPVs
- For bin 9, an optional NMOG of 0.130 applies only to qualifying LDT2s.
- Higher NMOG standard in bin 8 deleted after 2008.
- “Qualifying” refers to manufacturers who bring in their HLDTs and MDPVs in 2004 MY.
- NMOG means NMHC for diesel vehicles.

## Intermediate Life Exhaust Standards

- Full life PM standards apply at intermediate life.
- Bin 10 standards optional for diesels.
- Intermediate standards optional for 150K certified test groups.
- Temporary Bins 9,10 and 11 expire along with full life bins.

## Interim Program Means End of NLEV and Tier

### 1

- 2004/2005 Leadtime issue for HLDTs and MDPVs
- Diesel MDPVs can meet HDE standards through 2007.

## MDPV: New Vehicle Category

86.1803-01; preamble pg 6749-51

- Medium-Duty Passenger Vehicles (MDPVs)
  - Includes most Sport Utility Vehicles (SUVs)
  - Excludes work trucks.
- MDPV = Heavy-Duty Vehicle w/GVWR <10,000
  - Designed mostly for transportation of persons, exclude
    - **incomplete trucks**

- vehicles seating more than 12 people
- vehicles designed to seat >9 people rearward of driver
- vehicles with cargo bed or box of 72.0' or more
- Includes conversion vans

## MDPV: New Vehicle Category

86.1803-01; preamble pg 6749-51

- Get averaged with HLDTs in interim program
  - Qualifying MDPVdiesels may be engine certified through 2007; ref 86.1811-04(1)(2)(xi)(3).
- Cold CO, Evap, ORVR, CST, OBDII apply.
  - SFTP does not apply.
- In-use testing:
  - Sustained severe use MDPVs may be excluded from in-use testing (Preamble 6751).
  - MDPVs which see less frequent towing & severe use are not exempt from in-use testing.

## MDPV: Engine-Certified Diesels

86.1811-04(1)(2)(xiii); 86.004-11(e); pre 6750

- About 5% of MDPVs are diesel
- Qualifying MDPVs can be engine certified through 2007 under existing HDDE standards
  - If the manufacturer meets the 25% phase-in requirement for HLDT/MDPVs in 2004.
- If they are engine certified:
  - Diesel MDPVs are excluded from HLDT/MDPV fleet average NOx calculations.

## Full Useful Life

### Notes:

- Cold CO standards apply only for 5yrs/50K.**
- Extra Tier 2 NOx credits available for vehicles certified to 15yr/150K if they meet applicable intermediate life standards.**
- Optionally 10yr/100K for early Tier 2 LDV/LLDTs; ref 1805-04(e); 86.1861-**

## Intermediate Useful Life

### Notes:

- A. No 50K standards for lowest bins (1-4).
- B. 50K standards optional for Tier 2 vehicles certified to 15yr/150K useful life.
- C. 50K standards optional for diesels in bin 10.

## Carryover/across Flexibilities

- Avoid spending resources on phase-out vehicles.
  - Test fuel Pre 6792; 86.113, 213, 86.1844-01(e)(6)(i)
    - **Manufacturers may perform certification and in-use exhaust test results on California Phase II fuel.**
    - **EPA must use California Phase II fuel for certification and in-use exhaust testing on interim vehicles carried over or across from NLEV or Calif LEV-I vehicles.**
  - Altitude provisions. 86.1810-01(f)
    - **All interim vehicles can meet Tier 1 stds at altitude.**
    - **Altitude requirements optional for interim MDPVs.**
  - Test weight provisions. Pre 6792
    - **LVW or ALVW testing allowed for interim HLDTs.**

## Phase-ins: How to Comply

86.1811-04(d),(k)(7); 1848-01(c);  
1860-04(b)(2); pre 6742

- Initially, submit phase-in plan to EPA prior to certification of first test group
  - **Include projected sales in Part I Application**
  - **Omit sales to Calif and 177 States**
- Final phase-in plan:
  - **Include in Final Part I/Part II Application**
  - **Based on actual sales or alternatively actual production volume (with prior EPA approval)**
  - **Omit sales to Calif and 177 States**

Phase-ins: How to Comply (pg 2) 86.1811-  
04(d),(k)(7),(l); 86.1860-04(b)(2)

- Interim vehicles can't be used to comply with Tier 2 phase-in, and *vice-versa*.
- Vehicles from a Tier 2 test group may be divided and used to comply with Tier 2 and Interim non-Tier 2 programs; ref 86.1811-04(l)(i).
- Don't have to use the same vehicles to comply with Tier 2 exhaust & evaporative phase-in.

## Phase-ins: 2004 Issue for HLDT/MDPVs

86.1811-04(l), pre 6747, 6751

- Statutory lead time requirements make 2004 optional for HLDTs and MDPVs.
- Regulations encourage voluntary compliance for 2004
  - Only mfrs who bring all their HLDTs into the interim program in 2004 can:
    - Use optional **0.130 NMOG value for LDT2s in bin 9.**
    - Use optional **0.280 NMOG value for LDT4s in bin 10.**
  - Only mfrs who bring all their MDPVs into the interim program in 2004 can:
    - Use **bin 11 through 2008 for its MDPVs.**
    - **Engine certify diesel MDPVs through 2007**
    - Use optional **0.280 NMOG value for MDPVs in bin 10.**

## Phase Ins: Alternative Schedules

86.1811-04(k)(6), preamble pg 6742

- Rule has 25/50/75/100, 50/100 phase-ins.
  - $25+50+75+100 = 250$ ;  $50+100 = 150$
- Alternate phase-ins acceptable that:
  - Start as early as 2001
  - Conclude in same or earlier year; and
  - Percentages add up to at least 250% (or 150%)
  - 2001-2004 percentages must sum to at least 25%
- Special LDV/LLDT provision for 2004
  - Can miss the 25% requirement, if at least 20%
  - Add double the shortfall to the 2005 requirement
  - See 86.1811-04(k)(6)(vii).

**Fleet Average NOx Standard:  
How to Comply  
Calculating NOx Credits & Deficits 86.1861-04,  
preamble pg 6744-47**

**NOx Averaging: Overview**

- How to calculate NOx average (Like NMOG)
- How to calculate credits (Like NLEV)
- Limits on averaging sets (None after phase-in)
- Credit Life (Only limited for interim credits)
- Deficit Carryforward (Three years max)
- Early Banking (Only for Tier 2 credits)
- Extra credits for 150K cert
- Extra credits for lowest bins (through 2005 only)
- Discounting (Only under deficit carryforward)
- Reporting requirements

**NOx Average: How to Calculate**

86.1860-04(f), 86.1837-01(b), Preamble pg 6743

- Separate calculations for each averaging set
- Separate LDV/LLDTs & HLDT/MDPVs until 2009
- $\frac{\Sigma(n * \text{NOx standard for bin})}{\text{total vehicles in category}}$   
where n = number of vehicles in each bin
- Applies to interim and Tier 2 NOx averages.
- Round to same significant figures as the denominator (not less than 0.XXX)

**NOx Avging: Limits on Averaging Sets**

**NOx Averaging: Credit Life**

86.1861-04, preamble pg 6738, 6745, 6747

- Interim credits can be used only for interim average standard
  - Effectively expire at end of interim standard
- Tier 2 credits have unlimited life

- Including early Tier 2 credits.

## NOx Averaging: Deficit Carryforward

86.1860-04(e), preamble pg 6747

- For any NOx averaging standard, three year deficit carryforward is allowed.
  - Pay back rate of 1:1 in years 1 and 2; 1.2:1 in year 3. No deficit may be carried into year 4.
  - If carrying over a deficit, must apply all credits to deficit before banking or trading.
  - Manufacturers may pay back interim deficits with Tier 2 credits after end of interim program.
  - Limitation for Small Volume Manufacturers.

## NOx Averaging: Early Banking

86.1861-04(c), preamble pg 6744-45

- Tier 2 vehicles only.
  - Not for interim vehicles.
- Begins in 2001 model year for all categories
- Mfrs can earn early credits for vehicles  $<0.07$ .
- Can also count these vehicles toward alternate phase-in schedule.
- But can't count toward interim NOx avg.
- However, low Sulfur in-use fuel will not be available until 2004-06.

## NOx Averaging: 150,000 Mile Useful Life

86.1805-04, 86.1860-04(g), Preamble pg 6789

- For Tier 2 vehicles only---on a test group basis.
  - Not for interim vehicles.
- Mfr certifies to full life standards, but for 150K.
  - For exhaust & evaporative emissions (not Cold CO)
- Adjusting NOx standard yields extra credits.
  - Multiply NOx bin value by 0.85 when computing the NOx fleet average.

- No extra credits if opting out of required 50K standards.

## NO<sub>x</sub> Averaging: Extra Credits for Cleanest Vehicles

86.1860(h), preamble 6746

- Only applies to bins 1 and 2.
- Only applies 2001- 2005.
- Extra credits when computing the year end Tier 2 NO<sub>x</sub> average.
- Multipliers: Bin 1 = 2.0; Bin 2 = 1.5.

## NO<sub>x</sub> Averaging: Credit Discounting

86.1860-04(e), 1861-04, pre 6738, 6745, 6747

- No official discounts except in credit deficit carryforward.
  - Credits must be used at rate of 1.2:1 if deficit carried into third year.
- Interim credits essentially discounted by 100% at end of each interim program.
  - They expire.
- Different from CARB and NLEV.

## NO<sub>x</sub> Averaging: Reporting

1861-04(d), (g); 1862-04; preamble 6734

- Interim credits must be “generated, calculated, tracked, averaged, banked, traded, accounted for and reported separately from Tier 2 credits.”
- Annual reporting requirement.
  - Fleet NO<sub>x</sub> average.
  - Number of credits generated or used.
  - Credit balance.
  - All values used in calculations.
  - Details on all credit trades.
  - Report due by May 1 of next model year.

## NMOG Standards

86.1810(p); 86.1811-04(m), preamble pg 6738

- For diesel vehicles, NMOG means NMHC.
- Flex fuel and dual fuel must measure NMOG except when



- operating on gasoline or diesel.
- When measuring NMHC in lieu of NMOG:
    - Must multiply NMHC results by 1.04 before comparing with NMOG standard.
    - Currently allowed for gasoline vehicles only.
    - EPA may approve other adjustment factors.

## NMOG Standards: Page 2

86.1811-01(o); 86.1841-01(e)

- Alternative fuel vehicles must measure NMOG using CARB procedures
- Do not use NMOG Reactivity Factors (RAFTs).
  - Regardless of fuel used in the vehicle.
- No NMOG averaging. (Unlike CARB).
  - No NMOG credits
  - NMOG of early Tier 2 vehicles can be used for NLEV fleet average compliance through 2003.
    - RAFTs apply under NLEV program

## HCHO Emission Standards

86.1829-01(b)(1)(iii)(E)

- For gasoline and diesel vehicles, a compliance statement is allowed in lieu of actual test data.

## Evaporative Emission Standards (grams/test on 3 day diurnal+hot soak)

86.1811-04(e), Preamble pg 6748, 6751

## Evaporative Emission Standards

(grams/test on 2 day diurnal test)

86.1811-04(e), Preamble pg 6748, 6751

## SFTP: Background

## SFTP: Background -Weighting in Calculation

86.164-00; preamble 6789-92

## **SFTP: Tier 2 Overview 86.1811-04(f)**

- Generally, manufacturers must meet 4K standards from NLEV & full life stds derived from Tier 1.
  - 4K standards are not weighted (composite) standards
  - full life standards are weighted (composite) standards
- Applicable to gasoline and diesel LDV/Ts.
  - Not MDPVs
  - Not alternative-fueled vehicles
  - Not flexible-fuel vehicles, except on gasoline & diesel.

## **SFTP: Tier 2 4000 Mile Standards 86.1811-04(f); preamble page 6790**

- Applicable to gasoline and diesel vehicles

## **SFTP: Tier 2 Full Life Standards**

86.1811-04(f); preamble pg 6789-92

- For interim and Tier 2 LDVs and LDTs, the full life NMHC+NO<sub>x</sub>, CO and PM standards are calculated as follows:
- Tier 2 SFTP Standard = Tier 1 SFTP Std - 0.35 x (Tier 1 Std - Tier 2 FTP Std)

## **SFTP: Interim non-Tier 2 Standards 86.1811(f)(3) & (4); pre 6790**

- LDV/LLDTs must meet Tier 2 SFTP (4K/120K) standards, except:
  - Interim LDV/LLDTs using bin 10 may meet Federal (non-NLEV) Tier 1 SFTP stds.
- Interim HLDTs may meet Tier 2 SFTP (4K/120K) standards or Tier 1 (50K/120K) SFTP standards.

## **SFTP Standards - Exceptions for Diesels**

86.1811(f)(5) & (6); preamble pg 6791

- Diesel LDVs and LLDTs may use 50K SFTP standards in lieu of 4K standards through 2006.
  - Derived from Tier 1 standards by adjusting FTP component for new Tier 2 FTP standards.
  - Mfr must declare which option in cert application.
- No PM SFTP standard for interim LDV/Ts.
- 4000 mile PM SFTP standard = Full life (composite) PM std for Tier 2 LDV/Ts.

## Test Weights

preamble 6791; 86.1811-04(b); 86.129-00

ALVW = Curb weight + Half payload

LVW = Curb weight + 300 pounds

## Test Fuels 86.113-04; 86.213-04; pre. 6792

- 2004 Federal Sulfur specification: 15-80 ppm
  - EPA must use 15-45 ppm
- Mfrs may use Phase II fuel for exhaust testing:
  - **50 state vehicles**
  - **vehicles where certification is carried over from NLEV**
  - **vehicles where certification is carried across from Cal LEV I**
- EPA must use California Phase II fuel only for exhaust testing of Interim non-Tier 2 vehicles:
  - **vehicles where certification is carried over from NLEV**
  - **vehicles where certification is carried across from Cal LEV I**
- EPA may use Tier 2 Indolene (15-45 ppm Sulfur) for all other certification & in-use testing.

## Test Fuels: Evaporative Emissions

pre 6792; 86.1811-04(e)(6)

- Currently, manufacturers use the Federal fuel / Federal evaporative test procedure.
  - California & Federal evap standards currently equal
  - California accepts Federal results as worst case.
- Cal LEV II evaporative standards are more stringent than Tier 2 evaporative standards.
- Manufacturers may use passing California LEV-II Evaporative data to meet Tier 1 & 2 standards.

- EPA may require comparative data from both tests

## Alternate Fuels 86.1811-04(c)(2)

- Tier 2 exhaust/evap requirements are “fuel neutral”
  - Generally, same standards apply regardless of fuel.
- For flex-, bi- and dual-fuel vehicles:
  - Must meet the same standards on conventional and alternative fuel.
  - May meet NMOG standard from next higher bin when operating on gasoline or diesel.
  - See 86.1811-04(c)(3) for Bin 8 & 10 NMOG standards when operating on gasoline or diesel fuel.

## Test Fuel - Interim non- Tier 2 Vehicles

86.113-04; 86.213-04; pre. 6792

## Test Fuel - Tier 2 Vehicles

86.113-04; 86.213-04; pre. 6792

- Same as Interim table, except EPA may use Tier 2 Indolene test fuel for in-use testing for Tier 2 test groups certified via NLEV carryover and California LEV-I carry-across.

## Alcohols and Evap Emissions: Problem

- Numerous studies confirm impact of alcohols on permeability of fuel systems & materials.
  - Impacts are time-dependant.
- Ethanol in approx 10% of gasoline, nationwide.
- Evaporative emission impacts of ethanol not currently represented in EPA certification process.

## Alcohols and Evaporative Emissions:

Tier 2 Certification 86.1824-01(a)(2), pre 6792

### **For vehicles certified to Tier 2 evap standards:**

- Manufacturer’s durability procedure must use ethanol in service accumulation for gasoline vehicles.

- Not just for flexible-fueled vehicles
- Expose components to maximum ethanol concentration used in any state (currently 10%).
- Alternatively with prior EPA approval, manufacturers may use good engineering judgement to show compliance with sustained alcohol exposure.

## In-use Standards

86.1811-04(a)(5) & (p); Preamble pg 6795

- Same exhaust & evaporative standards apply to certification and in-use vehicles
  - except temporary in-use standards in 86.1811-04(p)

## Relaxed In-Use Standards 86.1811-04(p);

- Apply through 2008MY (2010 for HLDT/MDPVs)
- For diesels in bin 10, multiply NO<sub>x</sub> and PM certification stds by 1.2 and 1.35, respectively.
- Special in-use standards for Bins 2-5 apply only to first two years a test group is certified to a new bin, as follows:

## In-use Testing

86.1845-04, 86.1846-01, preamble 6795

- Manufacturer & EPA in-use testing essentially unchanged from CAP 2000 rule.
  - Manufacturers must perform in-use testing on MDPVs (which do not see sustained severe service).
- Mfrs may request additional preconditioning to remove the effects of high Sulfur in-use fuel.
  - If it is solely to remove effects of high sulfur
  - Only for vehicles of 2007 model year or earlier
  - Case by case (similar to NLEV)
  - Applies to manufacturer and EPA in-use testing.

## OBD Requirements 86.1806-01; pre 6751

- MDPVs must have OBD-II, except Diesels
  - Diesel MDPVs must have OBD if carried across from a California vehicle with OBD-II.
  - Other MDPV Diesel requirements are contained in 65 FR 59896, October 6, 2000.
- Evaporative leakage requirement: .040 inch.
- HEVs must have MIL monitoring battery components.

## OBD Requirements - page 2 86.1806-01(d); Preamble page 6751

- HEVs capable of off-vehicle charging must have useful life indicator on battery system.
- In-Use Sulfur Considerations, through 2007:
  - EPA may approve OBD systems that function properly on low sulfur fuel, but yield sulfur-induced “passes” on high sulfur fuel.
  - EPA may approve modifications to eliminate the sulfur-induced MIL.

## New Requirement: Leak Free Exhaust

86.1844-01(d)(16), preamble pg 6798

- Applies to all interim and Tier 2 vehicles.
  - But not carryover/across from NLEV or Calif LEV-I
- Manufacturers must provide statement in certification application that:
  - **Engineering analysis conducted of whole system**
  - **System designed for leak free assembly, installation and operation for useful life of vehicle**
  - **Repairs can be made to maintain leak free nature with commonly available**

- tools.
- “Leak Free” means that leakage is controlled so it won’t lead to an emission failure.

## NMOG Adjustment for Ozone Reduction

### Devices 86.1811-04(r), pre 6797

- Devices like PremAir. (e.g. on radiators)
- Mfr can meet a higher NMOG standard to the extent it can show ozone reduction
- Must determine ozone reducing potential of the device, ozone reduction potential of lower NMOG, and the ratio of the two.
  - Show by airshed modeling for four cities.

## NMOG Adjustment for Ozone Reduction

### Devices pg. 2

- Mfr must determine and submit:
  - Air flow rate through device as function of speed.
  - Ozone reduction efficiency for vehicle useful life.
  - How OBD system will determine malfunction.
- Compute NMOG allowance per 86.1811-04(r).
- EPA in-use testing requirements to be determined.

## Hybrids and Electric Vehicles

### 86.1811-04(n); 1860-04(e)(4); preamble 6793

- Mfrs must measure emissions from Hybrid Electric Vehicles (HEVs) and Zero Emission Vehicles (ZEVs) using CARB procedures.
  - EPA can approve other procedures.
- When computing fleet average NO<sub>x</sub>:
  - ZEVs go into bin 1.
  - For HEVs, the numerator in manufacturer’s fleet average equation may be lowered by HEV NO<sub>x</sub> contribution factor.
  - Determine on a case-by-case basis.

## Small Volume Manufacturer Provisions 86.1811-04(k)(5); Preamble 6794

- Small Volume Manufacturers (SVMs) are expected to opt into NLEV in 2002 model year (instead of meeting Tier 1 SFTP standards).
- Generally, SVMs are exempt from phase-in requirements until the final year of the phase-in.
- Hardship provision provides extra lead time.

## LDV/LLDT Small Volume Mfr Provisions 86.1811-04(k)(5)(i); Preamble 6794

- Must normally comply with 100% interim standards in 2004, 2005, 2006 model years.
  - Meeting the 0.30 NO<sub>x</sub> fleet average standard.
  - Which will mean certifying to Bin 9 or lower
- Exempt from 2004, 2005, and 2006 Tier 2 phase-in requirements.
- Must comply 100% with Tier 2 in 2007.
  - For exhaust and evaporative emissions

## HLDT/MDPV Small Volume Mfr Provisions 86.1811-04(k)(5)(ii); Pre 6794-95

- Must normally certify to bins 1-11 in 2004-2006.
  - Exempt from 0.20 NO<sub>x</sub> interim fleet average 2004-06
- Must normally meet .020 NO<sub>x</sub> fleet average in 2007 and 2008 model years.
  - Which will mean certifying to Bin 8 or lower
  - Exempt from 50% Tier 2 phase-in in 2008.
- Must normally comply 100% with Tier 2 in 2009 and later



model years.

- For exhaust and evaporative emissions

## Small Volume Mfr Hardship Provisions 86.1811-04(q), pre 6795

- Small Volume Manufacturers can apply for one year relief from any final phase-in year for exhaust or evaporative emissions.
- Written applications must:
  - Be submitted before noncompliance occurs.
  - Show severe economic hardship will occur
  - Show best efforts to comply
  - Show efforts made to purchase credits

## Small Volume Mfr Hardship Provisions - Page 2 86.1811-04(q), pre 6795

- Mfr can defer for one year:
  - 100% compliance with Bins standards and interim requirements for LDV/LLDTs in 2004.
  - 100% compliance with Tier 2 requirements for LDV/LLDTs in 2007.
  - 100% compliance with Bin standards and interim requirements for HLDT/MDPVs in 2004.
  - 100% compliance with 0.20 NO<sub>x</sub> average standard for HLDT/MDPVs in 2007.
  - 100% compliance with Tier 2 requirements for HLDT/MDPVs in 2009.

## Small Volume Mfr Hardship

### Provisions - Page 3 86.1861-04(a)(5), pre 6795

- Small Volume Manufacturers must meet fleet average NO<sub>x</sub> standards for one model year before running a credit deficit.
  - LDV/LLDT .30 NO<sub>x</sub> fleet average standard in 2004-2006 model years.
  - HLDV/MDPV .20 NO<sub>x</sub> fleet average standard in 2007-2008 model years
  - Tier 2 0.07 NO<sub>x</sub> fleet average in 2007-on for LDV/LLDTs or in 2009-

on for HLDV/MDPVs.

## Provisions for Independent Commercial Importers (ICIs) 85.1515, Preamble pg 6794

- NLEV is optional for ICIs; Tier 2 is mandatory.
- ICIs are exempt from phase-in requirements, similar to small volume manufacturers.
- Small Volume Hardship provisions apply to ICIs.
- ICIs must meet bin  $\leq$  to average NO<sub>x</sub> standard.
- Can use averaging, banking & trading program.
  - But must have credits in advance.
  - Or monitor production and obtain credits during the year; must not have a deficit at the end of the year.

### Tier 2 - EPA Computer Changes

- Some minor changes will be implemented in 2001:
  - ESI: Add Bins, RAFs, MDPV vehicle class, error flags
  - EvSI: Add new evaporative standards
  - VI: Add input codes for Electric Vehicles
  - MTDS: Add Tier 2 fuel type, PM for US06 & SC03
  - General Label: Add some fields for Electric Vehicles
  - SS: Report RAFs; a,b,c coefficients, new standards
- See EPA guidance letter CCD-01-24; Dec14, 2001

### Tier 2 - EPA Certificate Changes

- Tier 2 Certificates will show compliance with:
  - Tier 2 or Interim non-Tier 2 standards; and
  - Clean Fuel Vehicle standards (if applicable)
- Early Tier 2 certificates will show compliance with:
  - Tier 2 and NLEV standards; and
  - Clean Fuel Vehicle standards (if applicable)
- Certificates will be conditional on the manufacturer:
  - performing in-use testing,
  - meeting fleet average NO<sub>x</sub> standards, etc.

## For More Information:

- Visit our Internet sites
  - [www.epa.gov/otaq](http://www.epa.gov/otaq); or
  - [www.epa.gov/autoemissions](http://www.epa.gov/autoemissions)
- See Code of Federal Regulations, 40CFR Part 86
- See Federal Register 65 FR 6698, Feb 10, 2000

## **Appendix B. Materials Relating to Compliance by Small Entities with the Gasoline Sulfur Standards**

- Workshop Presentation, March 14, 2000
- Gasoline Sulfur Rule Questions and Answers, May, 2000
- Gasoline Sulfur Rule Questions and Answers, December, 2000

# Cleaner Cars, Cleaner Fuel, Cleaner Air

## Overview of the Tier 2/Gasoline Sulfur Final Rulemaking

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Mary Manners U.S. EPA  
Office of Transportation and Air Quality



# Topics for Discussion

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- Background
- Air Quality Assessment
- Tier 2 Vehicle Program
- Gasoline Sulfur Program
- Next steps



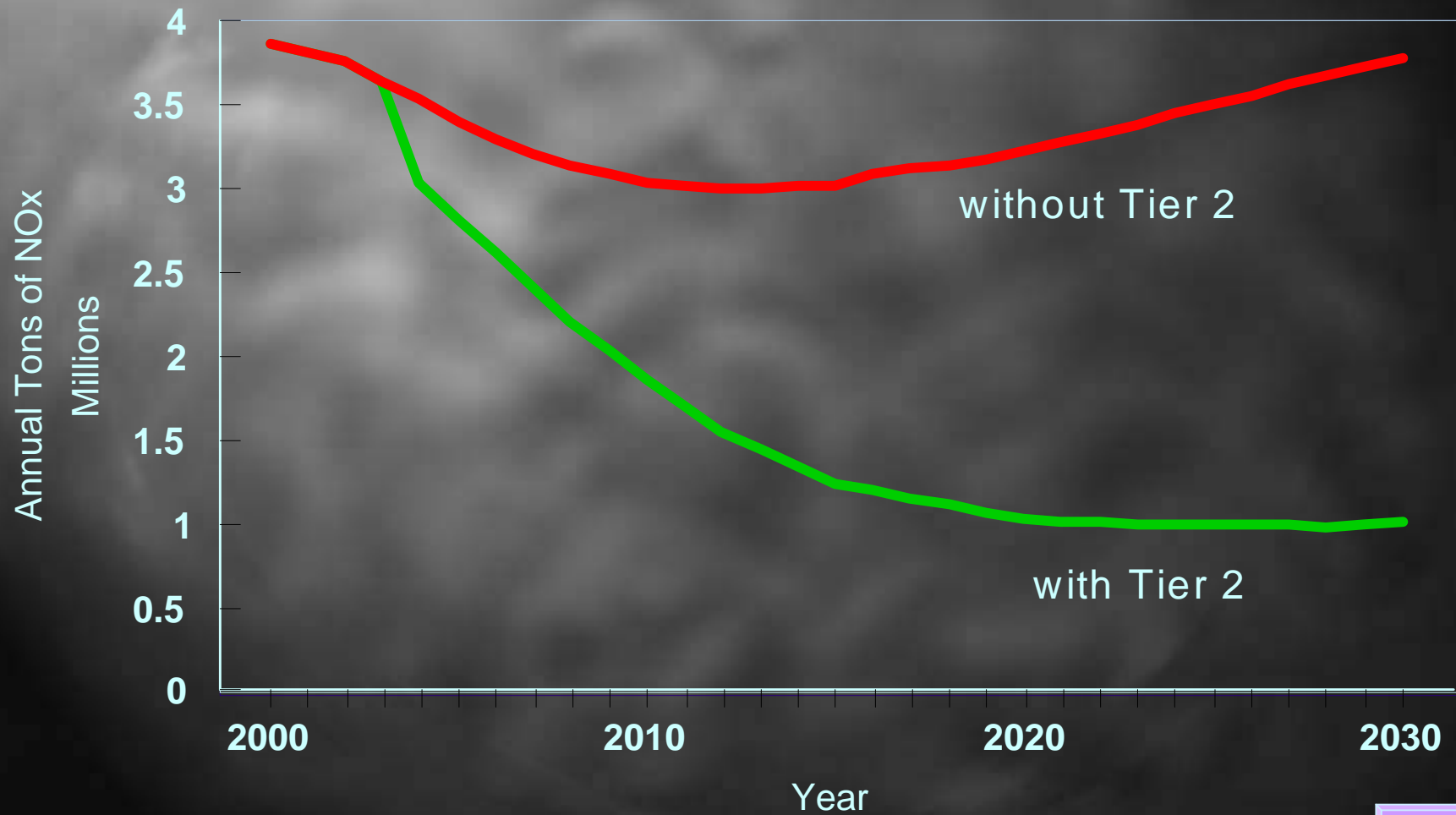
# Background

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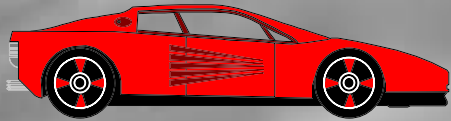
- Tier 2 Study, April 1998
- EPA Staff Paper on Gasoline Sulfur Issues, May 1998
- Tier 2 Report to Congress, July 1998
- Tier 2/Gasoline Sulfur Notice of Proposed Rulemaking, May 1999
- Public hearings & stakeholder meetings
- Final rule promulgated 12/21/99, published in the Federal Register 2/10/00



# 47-State Light-Duty NOx Emissions (tons) with Tier 2/Sulfur

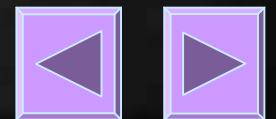


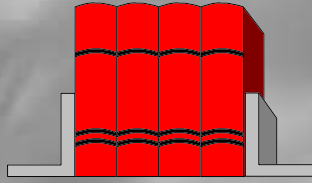




# Tier 2 Vehicle Program

- Applies same set of standards to passenger cars and light trucks.
- Includes a phase-in schedule for vehicle manufacturers.
- Permits choice of emission standards (“bins”) for vehicle manufacturers.
- Designed to provide significant NO<sub>x</sub> benefits to states.
- Includes new “MDPV” category



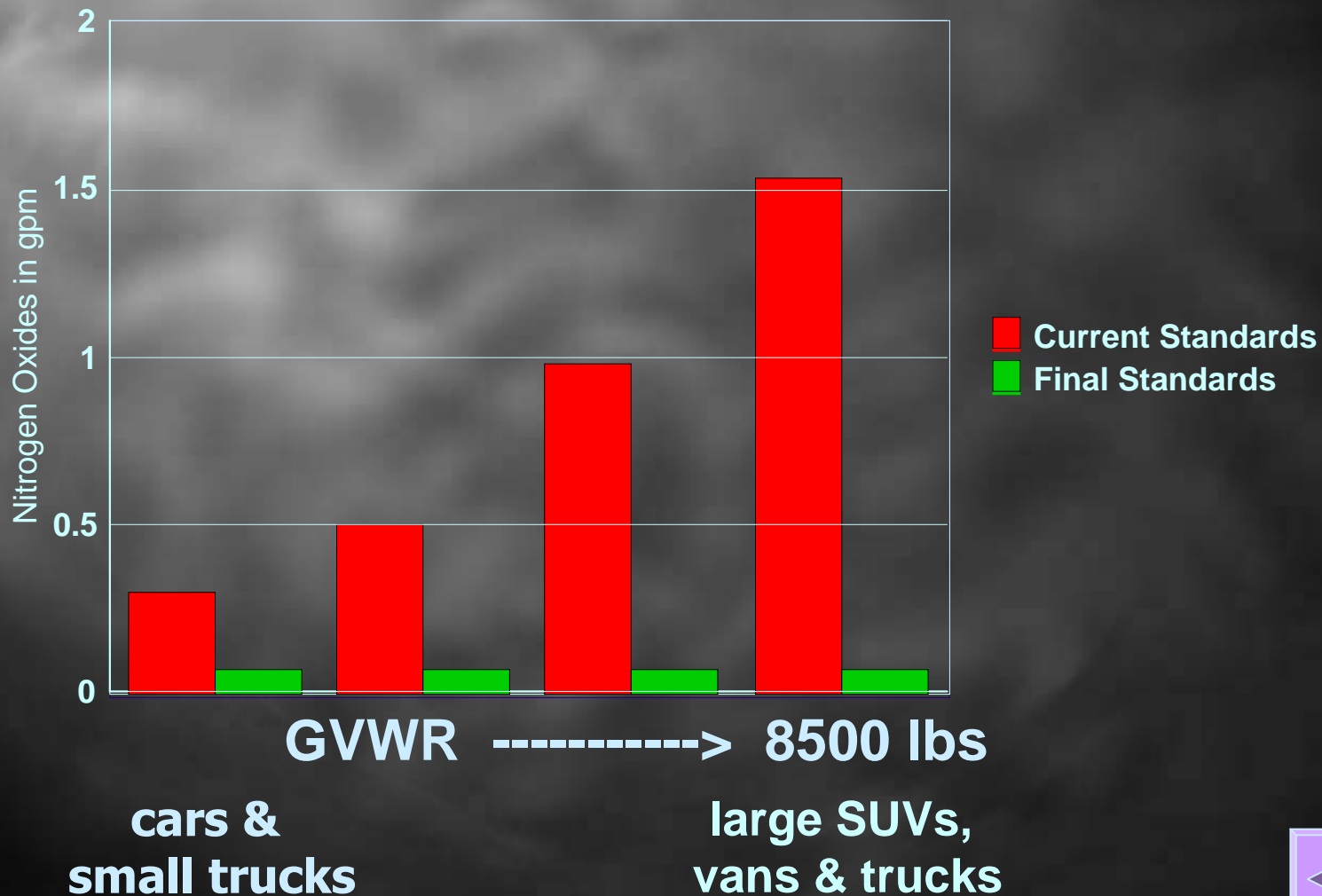


# Definitions

- Light-duty vehicle: a passenger car or passenger car derivative seating 12 passengers or less
- Light light-duty truck:  $\leq$  6000 lbs GVWR, e.g., Ford Ranger, Toyota RAV4, Dodge Dakota
- Heavy light-duty truck: between 6000 and 8500 lbs GVWR, e.g., Ford F-150, GM 1500
- Medium-duty passenger vehicle:  $<$  10,000 lbs GVWR and is designed to transport people, e.g., Ford Excursion



# Equalizing Exhaust Standards: NOx Standard cut 77%-95%



# Other Vehicle Program Issues

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## LDV/LLDT Program

- Avg. NOx std = 0.07 g/mi
- NMOG  $\leq$  NLEV;  
evap cut 50%;  
PM reduced
- Useful life = 120,000 miles
- SFTP upgraded

## MDV/HLDT Program

- Avg. NOx std = 0.07 g/mi
- NMOG  $\ll$  Tier 1;  
evap cut 50%;  
PM reduced
- Useful life = 120,000 miles
- SFTP upgraded



# Light-Duty Full Useful Life Exhaust Emission Standards (g/mi)

Bin#	NO <sub>x</sub>	NMOG	CO	HCHO	PM
11	0.9	0.280	7.3	0.032	0.12
10	0.6	0.156/0.230	4.2/6.4	0.018/0.027	0.08
9	0.3	0.090/0.180	4.2	0.018	0.06
<i>[The above temporary bins expire in 2006 (for LDVs and LLDTs) and 2008 (for HLDTs and MDPVs)]</i>					
8	0.20	0.125/0.156	4.2	0.018	0.02
7	0.15	0.090	4.2	0.018	0.02
6	0.10	0.090	4.2	0.018	0.01
5	0.07	0.090	4.2	0.018	0.01
4	0.04	0.070	2.1	0.011	0.01
3	0.03	0.055	2.1	0.011	0.01
2	0.02	0.010	2.1	0.004	0.01
1	0.00	0.000	0.0	0.000	0.00

# Tier 2 and Interim Non-Tier 2 Phase-in and Exhaust Averaging Sets

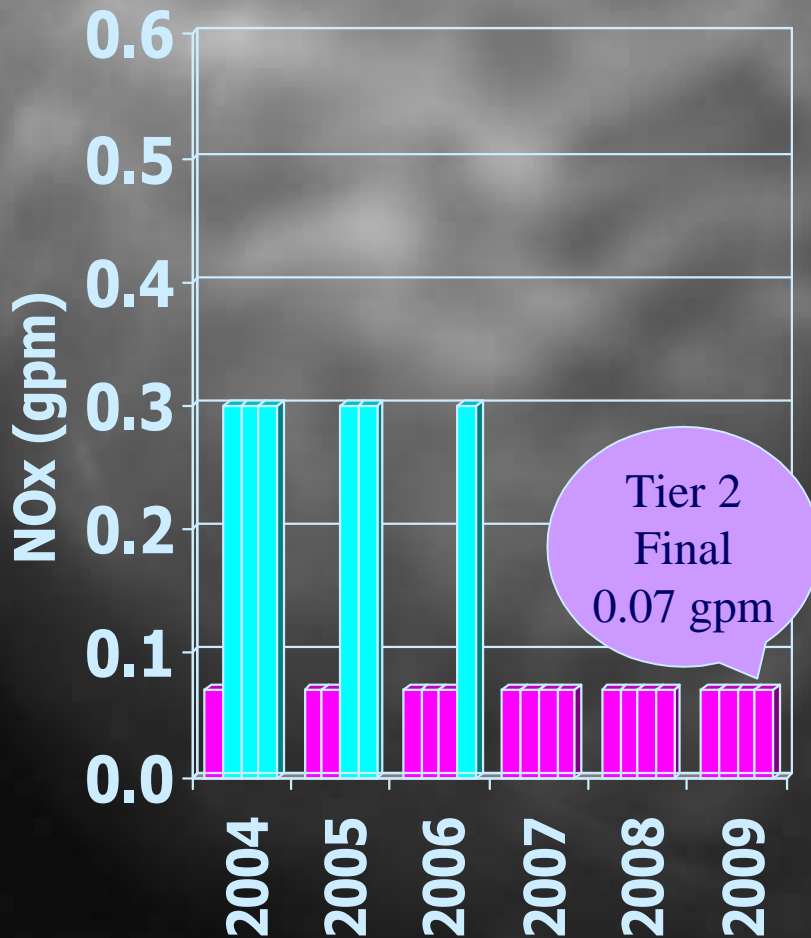
	2001	2002	2003	2004 (%)	2005 (%)	2006 (%)	2007 (%)	2008 (%)	2009 + (%)	NO <sub>x</sub> Std. (g/mi)
<b>LDV/LLDT (interim)</b>	NLEV	NLEV	NLEV	75 max	50 max	25 max	0	0	0	0.30 avg
<b>LDV/LLDT (Tier 2)</b>	<i>early banking</i>			25	50	75	100	100	100	0.07 avg
<b>HLD T (Tier 2)</b>	<i>early banking</i>							50	100	0.07 avg
<b>HLD T (interim)</b>	Tier 1	Tier 1	Tier 1	25	50	75	100	50 max	0	0.20 avg
<b>MDPVs (interim)</b>	HDE	HDE	HDE					0		
<b>MDPVs (Tier 2)</b>	<i>early banking</i>							50	100	0.07 avg



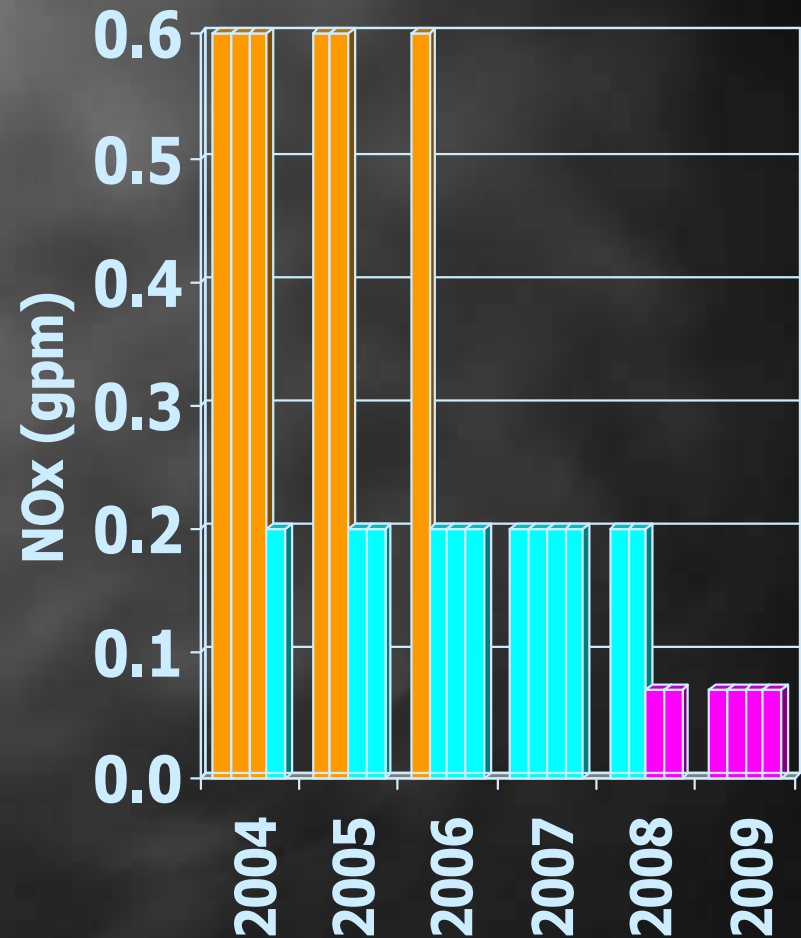
# Phase-In of the Tier 2 NOx Fleet Average Standards

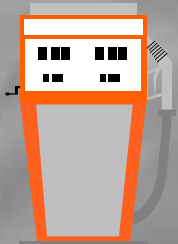
- Tier 2 Final
- Interim
- Interim Cap

**Cars, Trucks ≤ 6000 lb GVWR**



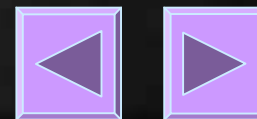
**Light Trucks > 6000 lb GVWR**





# Gasoline Sulfur Program

- Reduces average gasoline sulfur levels nationwide.
- Includes a phase-in schedule for gasoline refineries, refiners, and importers.
- Provides temporary, less stringent standards for small refiners and gasoline sold in the West.
- Includes an averaging, banking, and trading program to encourage early sulfur reductions.
- Contains several implementation provisions.



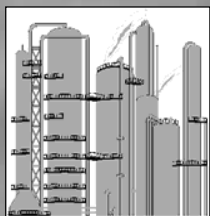


# Changes from the Proposal

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- Eliminated the 30 ppm refinery avg in 2004.
- Eliminated the declining cap in 2005.
- Established a Geographic Phase-in Area.
- Enhanced the averaging, banking, and trading (AB&T) program, including elimination of 150 ppm “trigger” for generating credits.
- Expanded the flexibility for small refiners.
- Introduced a hardship relief provision for qualifying refiners.





# Program Standards

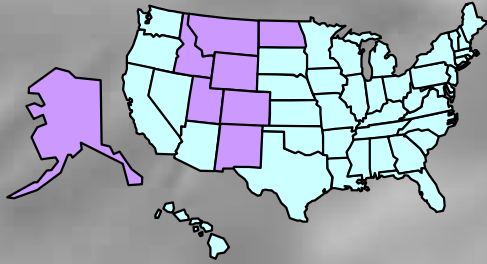
## Gasoline Sulfur Standards for Refiners, Importers, and Individual Refineries

(Excluding Small Refiners and GPA Gasoline)

<b>Compliance as of:</b>	<b>2004</b>	<b>2005</b>	<b>2006+</b>
Refinery Average, ppm	--	30	30
Corporate Pool Average, ppm	120	90	
Per-Gallon Cap, ppm	300	300	80

- Effective January 1, 2004 at the refinery gate.
- Cap exceedances up to 50 ppm are allowed in 2004 but must be made up in 2005.



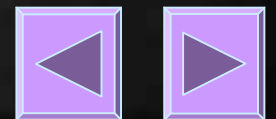


# Geographic Phase-in Area

Gasoline Sulfur Standards for the  
Geographic Phase-In Area\*  
(Excluding Small Refiners)

<b>Compliance as of:</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
Refinery Average, ppm	150	150	150
Corporate Pool Average, ppm	120	90	
Per-Gallon Cap, ppm	300	300	300

\*Alaska, Colorado, Idaho, Montana, New Mexico, North Dakota, Utah, & Wyoming, plus counties/tribal lands in adjacent states.

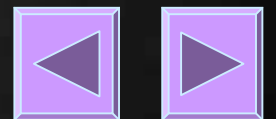


# GPA Standards:

When the Refinery Average Standard is < 150 ppm

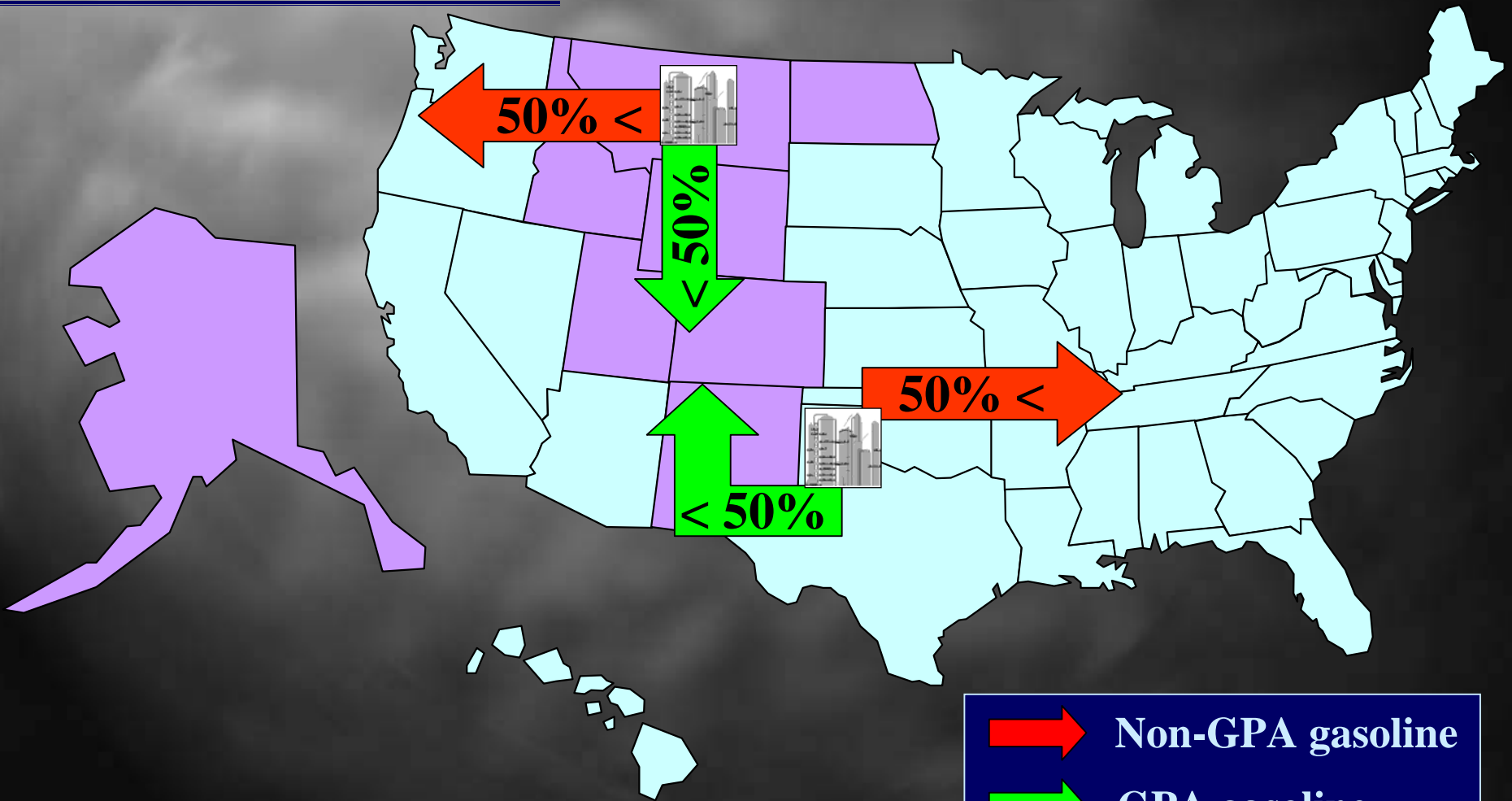
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- The refinery average standard is the more stringent of:
  - 150 ppm
  - the refinery's 1997-98 sulfur baseline + 30 ppm
  - sulfur level from which early (2000-03) credits were generated + 30 ppm



# GPA Standards:

When the Corporate Average Standard Applies



- ➔ Non-GPA gasoline
- ➔ GPA gasoline

# Small Refiner Standards

1997-98 Refinery Baseline Sulfur Level (ppm)	Temporary Sulfur Standards (ppm) 2004 - 2007	
	Average	Cap
0 to 30	30	300
31 to 200	baseline level	300
201 to 400	200	300
401 to 600	50% of baseline	1.5 times the average standard
601 and above	300	450



# Small Refiner Standards

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## ■ Definition

- Fewer than 1500 employees corporate-wide and
- A corporate crude oil capacity  $\leq$  155,000 bpcd.

## ■ Gasoline Volume Limitation

- 105% of baseline volume or
- Volume of gasoline produced from crude oil during the year
- Excess volume is subject to the corporate average standards that apply to all other refiners.



# Other Gasoline Sulfur Issues

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## ■ Hardship Relief Provision

- Temporary waiver due to extreme unforeseen circumstances, e.g., refinery fire, natural disaster.
- Temporary waiver based on extreme hardship circumstances, e.g., refinery configuration, severe economic limitations.

## ■ State Preemption

- Our final gasoline sulfur rule clearly preempts future state actions to prescribe or enforce gasoline sulfur controls.
- States seeking a gasoline sulfur control program that is different than our national program must obtain a waiver from us.





# Next Steps

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- Participation in implementation workshops for the small refiner and GPA programs in mid-April
- Development of a guidance document for gasoline sulfur implementation
- Establishment of a database for the gasoline sulfur AB&T program
- Identification of counties to be included in the Geographic Phase-in Area
- Formation of a process for resolving turnaround/upset issues.
- Assistance in the development of State Implementation Plan (SIP) credits for the Tier 2/Gasoline Sulfur program





## For More Information...

- On the Tier 2 vehicle program contact:  
John Guy
  - 202-564-9276
  - [guy.john@epa.gov](mailto:guy.john@epa.gov)
- On the gasoline sulfur program contact:  
Mary Manners
  - 734-214-4873
  - [manners.mary@epa.gov](mailto:manners.mary@epa.gov)
- Tier 2 home page:  
<http://www.epa.gov/oms/tr2home.htm>





## Gasoline Sulfur Rule Questions and Answers

The following are responses to questions received by the Environmental Protection Agency (EPA) concerning the manner in which the EPA intends to implement and assure compliance with the gasoline sulfur regulations at 40 CFR Part 80. This document was prepared by EPA's Office of Air and Radiation, Office of Transportation and Air Quality, and the Office of Enforcement and Compliance Assurance, Office of Regulatory Enforcement.

Regulated parties may use this document to aid in achieving compliance with the gasoline sulfur regulations. However, this document does not in any way alter the requirements of these regulations. While the answers provided in this document represent the Agency's interpretation and general plans for implementation of the regulations at this time, some of the responses may change as additional information becomes available or as the Agency further considers certain issues.

This guidance document does not establish or change legal rights or obligations. It does not establish binding rules or requirements and is not fully determinative of the issues addressed. Agency decisions in any particular case will be made applying the law and regulations on the basis of specific facts and actual action.

While we have attempted to include answers to all questions received, the necessity for policy decisions and/or resource constraints may have prevented the inclusion of certain questions. Questions not answered in this document will be answered in a subsequent document. The Agency intends to provide additional responses as expeditiously as possible. Questions that merely require a justification of the regulations, or that have previously been answered or discussed in the preamble to the regulations have been omitted.

### STANDARDS AND COMPLIANCE

1. **Question:** Were some words left out of § 80.195(a)(1) in the final rule published in the *Federal Register*?

**Answer:** Yes. Some words were inadvertently left out of § 80.195(a)(1) when the final rule was published in the *Federal Register* on February 10, 2000. The correct introductory language of § 80.195(a)(1) is: "The gasoline sulfur standards for refiners and importers, excluding gasoline produced by small refiners subject to the standards at § 80.240, and gasoline designated as GPA gasoline under § 80.219(a), are as follows:" On February 28, 2000, the

Federal Register Office published a notice to correct this error.

2. **Question:** The preamble at 65 FR 6819 states: "Many of the requirements do not become applicable until the beginning of the sulfur control program on October 1, 2003, when all refiners are required to meet the sulfur standards." Is this date correct? Although the proposal listed October 1, 2003, as the effective date for the sulfur cap at the refinery, doesn't the final rule specify January 1, 2004?

**Answer:** The effective date of the sulfur standards was changed from the date proposed in the Notice of Proposed Rulemaking (NPRM). In the final rule, the corporate pool annual average standards and the refinery and importer per-gallon cap standards are effective beginning January 1, 2004. (The refinery and importer annual average standards are effective beginning January 1, 2005.) The reference in the preamble at 65 FR 6819 regarding the date that refiners are required to meet the sulfur standards should be January 1, 2004, instead of October 1, 2003.

3. **Question:** In the NPRM, the sulfur standards were expressed without decimal places, but the final rule provides that the standards are expressed with two decimal places (§§ 80.195, 205). Why did EPA include this change?

**Answer:** EPA included the decimal places to ensure that the sulfur standards are not exceeded by rounding down actual average sulfur levels. We do not believe reporting the average sulfur level to two decimals creates any additional burden as the averaging calculation will yield this result to any number of decimal places. Although the decimals were not included in § 80.216(a)(1)(i) for the geographic phase-in area (GPA) standard, EPA intends to revise this provision to include the decimals in a future rulemaking.

4. **Question:** Section 80.205(e) (2) of the final rule states: "No refiner or importer may have a compliance deficit in any year after 2010. Any deficit that exists in 2010 must be made up in 2011". We could interpret the end of the credit program as being the 2011 compliance year. There could be many expensive decisions made affecting gasoline supply in the U.S. in the 4<sup>th</sup> quarter of each year in 2012 and beyond for the sake of several ppm sulfur. Why is the refiner flexibility for compliance with the 30 ppm average using credits eliminated beyond 2011?

**Answer:** The provisions in § 80.205(e) which allow a deficit to be carried over to the following year are included in the regulations to provide additional flexibility for parties in the early years of the sulfur program in the event of an unexpected shutdown or inability to obtain credits. *See* 65 FR 6764. Refiners and importers will continue to be able to purchase credits to achieve compliance with the 30 ppm average in 2011 and beyond in the event that unexpected exceedences of the standards occur. However, after the 2010 averaging period, refiners and importers must demonstrate compliance with the standard for each averaging period (i.e., if the refiner's or importer's actual annual average exceeds the standard in the 2011 averaging period,

or any averaging period thereafter, the refiner or importer must obtain sufficient credits to demonstrate compliance for that averaging period). The refiner or importer will have until the last day of February of the following year (when the annual averaging report is due) to obtain the necessary credits.

5. **Question:** Please verify that if a refiner is also a gasoline importer, the refiner's corporate pool must include the imported gasoline for compliance with the corporate pool average standard for 2004 & 2005.

**Answer:** For purposes of calculating compliance with the corporate pool annual average standards at § 80.195(a)(1), a refiner who is also an importer must include in its pool the volume of gasoline production from all refineries and the volume of gasoline imported during the averaging period. *See* § 80.195(c)(1).

6. **Question:** If a company that qualifies as a small refiner is also an importer, would the company only comply with the corporate pool average standards for its volume of imported gasoline?

**Answer:** The company's small refinery would not be subject to the corporate pool average standards. *See* § 80.195(c)(4). As a result, the company would only need to demonstrate compliance with the corporate pool average standards for its imported gasoline.

7. **Question:** The preamble states that, in 2005, each refinery may only use credits to achieve the 30 ppm standard after the refiner has demonstrated compliance with the 90 ppm corporate pool average for all refineries. The refiner must meet the corporate pool average standard on actual sulfur levels or through a trade for allotments. At this point, each of the refiner's refineries must obtain sulfur credits to bring the refinery's sulfur average down to 30 ppm. Please explain how this works, particularly where a refiner has one or more refineries that have an average of 30 ppm or less.

**Answer:** The regulations require a refiner or importer, in 2005, to demonstrate compliance with the 90 ppm corporate pool average standard by calculating its actual corporate average sulfur level using the actual sulfur levels of each batch of gasoline and then applying allotments, as necessary, to meet the 90 ppm standard. Credits may not be used to achieve compliance with the corporate pool average standard. *See* § 80.315(c)(4). The regulations also require a refiner for each refinery, or an importer, to demonstrate compliance with the refinery or importer average standard by calculating the actual refinery or importer sulfur level using the actual sulfur levels of each batch of its gasoline, and applying credits and/or allotments, as necessary, to meet the 30 ppm standard. The regulations identify the corporate average and refinery average standards as two separate standards, and do not require refiners to demonstrate compliance with one or the other standard first.

In 2005 only, refiners and importers may use credits and/or allotments to demonstrate

compliance with the refinery or importer average standard. *See* § 80.195(b)(4). These credits or allotments may be obtained from any source. A refiner with more than one refinery may use credits generated by a refinery with an average sulfur level below 30 ppm towards meeting the refinery average standard at one of its other refineries. Alternatively, the refinery may choose to bank or sell the credits, as permitted by the regulations. In 2005, the same pool of allotments used to demonstrate compliance with the corporate pool standard may be used by a refinery in the pool toward its demonstration of compliance with the refinery average standard, or some of the allotments may be used by one refinery and the remainder used by another refinery or refineries in the pool. For example, a refiner with two refineries who obtains 30 allotments to achieve compliance with the corporate pool standard may apply all 30 allotments to one refinery, or some of the allotments to each of the two refineries (for example: 15 allotments to each refinery; 20 allotments to one refinery and 10 to the other; etc.). We intend clarify the requirements regarding how allotments may be used to demonstrate compliance with the corporate pool average standard and the refinery average standard in 2005 in a future rulemaking.

As indicated in the Question, the preamble states that, in 2005, a refiner first must demonstrate compliance with the corporate pool average standard of 90 ppm, and then demonstrate compliance with the refinery average standard using a maximum of 90 ppm as the average sulfur level for each refinery, and applying credits to bring each refinery's average down to 30 ppm. *See* 65 FR 6760. However, this discussion in the preamble is not consistent with the manner in which compliance is demonstrated under the regulations; i.e., compliance with the corporate pool average standards and with the refinery average standards is demonstrated separately, and refiners are required to use actual sulfur levels in computing the refinery average, as compared to using presumed levels of 90 ppm for each refinery after demonstrating compliance with the corporate pool average standard. Therefore, we are withdrawing this preamble discussion as guidance for interpreting the regulations on this particular issue. The regulations do not impose any particular priority on compliance with the corporate average and the refinery average standards in 2005. Contrary to the statements in the preamble referenced above, refiners need not first demonstrate compliance with the corporate pool average standard; rather, each standard is independent of the other and must be met as such.

8. **Question:** Please clarify how § 80.205(f) is to be applied.

**Answer:** The regulations provide that a refiner or importer must meet the corporate pool average standards under § 80.195 if their gasoline production or volume of imported gasoline is comprised of less than 50 percent of gasoline designated as GPA gasoline *See* § 80.216(f). As discussed in the preamble, we intended refiners and importers subject to the corporate pool average standard who produce some GPA gasoline to use the same compliance process as other refiners and importers subject to the corporate pool average standards in 2004-2005. *See* 65 FR 6763. However, as described in the answer to Question 7 above, the preamble discussion regarding compliance with the refinery average and corporate pool average standards in 2005 is inconsistent with the manner in which compliance with these standards is demonstrated in the regulations. Therefore, we are also withdrawing as guidance the statements in the preamble

specifically describing compliance with the corporate pool average and refinery average standards for such refiners and importers. Thus, as for all other refiners and importers, such refiners and importers must demonstrate compliance with both average standards (as calculated under 80.205), but are not required to demonstrate compliance with the corporate pool average standard first. We intend to revise the regulations at 80.205(f) to be consistent with the manner with which the standards are described in 80.195 and with other relevant provisions of the final rule.

9. **Question:** Do refiners have to include in their calculations of compliance with the corporate pool average standard all refineries owned by subsidiaries and refineries owned by joint venture partners?

**Answer:** The regulations state that the corporate pool average standards apply to the refiner's gasoline production from all of its refineries in a calendar year. *See* § 80.195(c)(1). Joint ventures, where two or more parties collectively own and operate a refinery, are treated as a separate refiner subject to a separate corporate pool average standard. However, the regulations allow one partner in a joint venture to include the joint venture's refineries in its corporate pool for purposes of calculating compliance with the corporate pool average standard. If one partner does this, the joint venture will be considered to be in compliance with the corporate average standard, where the partner that counts the joint venture refineries meets the corporate average standard. *See* § 80.195(c)(5). For any joint venture refineries not included in a partner's compliance calculations, the joint venture must demonstrate compliance with the corporate pool average standard. Thus, partners in a joint venture have the flexibility under the regulations to comply with the corporate pool average as a joint venture, or to count the joint venture refineries in either partner's compliance calculations.

The corporate pool average standard applies to all refineries owned by a refiner, which EPA interprets to include refineries owned by the refiner's wholly-owned subsidiaries. *See* 65 FR at 6755. Where a refiner partially owns a refinery, that refinery is not considered part of the refiner's corporate pool average. Where two or more parties collectively own and operate a refinery, that is considered a joint venture, and as discussed above, one partner of the joint venture may include the refinery in its corporate pool average. *See* § 80.195(c)(5).

10. **Question:** What types of business arrangements does EPA consider to be joint ventures under § 80.195 and other provisions of the sulfur program? How are other types of shared refiner ownership to be treated under the regulations?

**Answer:** EPA considers a joint venture to be a situation in which two or more parties collectively own and operate one or more refineries. *See* 65 FR at 6755. This definition is intended to encompass a broad range of business arrangements where two or more entities share ownership of a refinery. Thus, EPA expects that most cases of shared refinery ownership will be considered joint ventures under the regulations. For situations where a refinery is owned by more than one party, but not all parties participate in the refinery's operation, the refinery is considered a separate entity, and the refiner of that refinery is the business entity consisting of the

multiple owners. However, we believe that, in this case, one of the owners should be allowed to include the refinery in its corporate pool as the regulations allow in joint venture situations. As a result, we intend to make this change in a future rulemaking.

11. **Question:** May a limited liability company be considered a joint venture for purposes of the provisions under § 80.195(c)(5)?

**Answer:** Under § 80.195(c)(5), a joint venture is one in which two or more parties collectively own and operate one or more refineries. Any joint ownership arrangement that meets this criteria, including a limited liability arrangement, will be considered a joint venture for purposes of compliance with the corporate pool standards.

12. **Question:** Please clarify whether oxygenates blended into either conventional gasoline or Reformulated Blendstock for Oxygenate Blending (RBOB) downstream of the refinery need to be included in sulfur compliance calculations.

**Answer:** Section 80.205(c) provides that a refiner or importer may include oxygenates added downstream from the refinery or import facility if the requirements under § 80.69(a) or § 80.101(d)(4)(ii) of the RFG/CG regulations are met. Therefore, a refiner or importer may include, but is not required to include, oxygenates blended downstream in sulfur compliance calculations.

## **GEOGRAPHIC PHASE-IN AREA**

1. **Question:** It is our understanding that, if a portion of the gasoline produced by a refinery located within the GPA is sold outside of the United States, that gasoline is not subject to the sulfur standards and it only has to meet the standards of the country to which it is exported. Is this correct?

**Answer:** Gasoline that is exported for sale outside the United States is not subject to the requirements of the gasoline sulfur rule, including gasoline produced by a refiner located within the GPA. *See* § 80.200(c).

2. **Question:** Footnote b of Table IV.C.-2 of the preamble is inconsistent with the regulations at § 80.216(f). The regulations clearly state that the corporate pool average standards do not apply if a refiner's production volume is mostly GPA gasoline. If the refiner/importer volume is less than 50 percent GPA gasoline, then the corporate pool average standard applies.

**Answer:** The regulations at § 80.216(f) are correct. There was an error in footnote b of Table IV.C.-2 of the preamble released on 12/21/00, which subsequently was corrected in the final rule published in the *Federal Register* on February 10, 2000.



3. **Question:** Please clarify how GPA gasoline should be treated for purposes of complying with the corporate pool annual average standards. The preamble to the final rule says that refiners and importers who market most of their gasoline outside of the GPA (and, therefore, the corporate pool average standard applies) must then include GPA gasoline in the calculation of the corporate pool average. The regulations at § 80.216(f)(2) say that if the refiner's or importer's volume is less than 50 percent GPA gasoline, then the corporate pool average standard applies and all volume must be included (presumably including GPA gasoline).

**Answer:** If a refiner's or importer's gasoline volume is comprised of less than 50 percent GPA gasoline, the corporate pool average standards apply, and all of the refiner's gasoline production and/or all of the importer's gasoline imports, including GPA gasoline, must be included for purposes of calculating compliance with the corporate pool annual average standards. We intend to add language to § 80.216(f)(2) in a future rulemaking to clarify the gasoline production that is subject to the corporate pool annual average standards under this provision. *See* 65 FR 6757.

4. **Question:** In determining whether the corporate pool average standard applies to a refiner who produces GPA gasoline under § 80.216(f), may the refiner include gasoline production from refineries owned by its subsidiaries or by joint ventures in which it is a partner?

**Answer:** In calculating the percentage of a refiner's production that is designated as GPA gasoline, EPA interprets the regulations to require the refiner to count gasoline produced by refineries owned by wholly owned subsidiaries. These are the entities that must be included in the calculations of compliance with the corporate pool average. Refineries that the refiner partially owns, including refineries owned by joint ventures and other business arrangements through which it shares ownership of a refinery, are considered separate entities under the regulations, owned by the business entity comprised of the multiple owners. Therefore, EPA will consider such business entities as separate refiners for purposes of determining whether compliance with the corporate pool standards applies under § 80.216(f). EPA will not consider these entities to be part of the production of one of the owners. However, once it is determined under § 80.216(f) that a GPA refiner is required to comply with the corporate pool standards, the party may include a joint venture refinery in its pool for purposes of demonstrating compliance with the corporate pool standards (assuming the joint venture refinery is also required to comply with the corporate pool standards).

5. **Question:** What specification standard does a GPA refinery use to ship outside a designated GPA area?

**Answer:** Gasoline produced by a refinery located within the GPA, but intended for use outside the GPA, must meet the standards and requirements under the sulfur regulations for non-GPA gasoline. Gasoline intended for use within the GPA must be designated as GPA gasoline by the refiner or importer, and it is prohibited from being distributed for use outside the GPA. Product transfer documents accompanying GPA gasoline must identify the gasoline as being

GPA gasoline and include a statement that the gasoline may not be distributed or sold for use outside the GPA.

6. **Question:** Under the GPA program, a refiner must submit an application for GPA standards by 12/31/2000. If a refiner who has not historically supplied the GPA wishes to supply gasoline to the GPA area some time after 12/31/2000, can the GPA application be submitted at that time?

**Answer:** The GPA provisions provide for less stringent standards during the early years of the sulfur program for gasoline intended for sale in the GPA. As discussed in the preamble, the GPA provisions are intended to provide relief for those refiners who are located in or near the GPA and who supply that area. See 65 FR 6756-57. We believe that those refiners will have sufficient time under the application deadline in the regulations to apply for GPA gasoline standards. As a result, refiners may not apply for GPA standards after that date. Note, however, that a refiner who does not have an approved GPA standard may supply gasoline to the GPA at any time, since non-GPA gasoline is not prohibited from being sold in the GPA.

#### SMALL REFINERS

1. **Question:** Section 80.225(a)(3) says that, to qualify for small refiner status, the average crude capacity of the refiner must be less than or equal to 155,000 bpcd for 1998. However, the preamble says "for 1999." Is there is an inconsistency here?

**Answer:** Yes. There was an inconsistency between in the preamble and § 80.225(a)(3) regarding the crude oil capacity criteria for small refiners. This inconsistency was corrected in the final rule published in the *Federal Register* on February 10, 2000. The correct criteria is an average crude capacity less than or equal to 155,000 bpcd for 1998.

2. **Question:** Section 80.230(a)(1) says "Refiners of refineries built after January 1, 1999." This section should read, "Refiners with refineries built after January 1, 1999."

**Answer:** The regulatory language is clear that refiners who own refineries built after January 1, 1999, are not eligible for the small refiner hardship provisions. However, we agree that the suggested change would clarify the provision, and intend to make this clarification in a future rulemaking.

3. **Question:** Assume that a small refiner has a baseline of 100 ppm, its standard under § 80.240(a) would be 100 ppm. However, the corporate pool average for 2004 is 120 ppm and there is no individual refinery standard. As a result, the small refiner would be better off not to elect small refiner status until the year 2005. Is this possible?

**Answer:** The regulations provide that any refiner who wishes to participate in the small

refiner program must apply by December 31, 2000. Upon approval of the application, EPA will notify the refiner of each small refinery's applicable standard, baseline volume, and per-gallon cap standard. *See* § 80.235. EPA interprets the regulations to require approved small refinery standards to apply from the beginning of the small refiner program in 2004, and to be in effect until the end of the small refinery program in 2008, unless the refiner notifies EPA under § 80.230(b)(2) of an election to comply with the standards in § 80.195. As a result, a refiner who obtains small refiner status may not elect to have the small refinery standards become effective in 2005 rather than 2004. EPA also interprets the election under § 80.230(b)(2) to be a one time election. If a small refiner chooses to opt out of the small refiner program pursuant to § 80.230(b)(2) and comply with the standards in § 80.195, the refiner may not elect to have its small refinery standards apply in a subsequent averaging period.

4. **Question:** For purposes of establishing small refiner status, do refiners have to include in their calculation of number of employees and corporate crude capacity all refineries owned by subsidiaries and all refineries owned by joint venture partners?

**Answer:** The sulfur regulations define "small refiner" as a refiner who produces gasoline at a refinery by processing crude oil through refinery processing units, employed no more than 1,500 people in calendar year 1998, and had an average crude capacity for 1998 less than or equal to 155,000 barrels per calendar day (bpcd). *See* § 80.225(a)(1). The regulations state that, for purposes of determining the number of employees and corporate crude capacity, the refiner must include the employees and crude capacity of any subsidiary companies, any parent company, subsidiaries of the parent company, and any joint venture partners. EPA interprets this regulation to require refiners to include employees and crude capacity at any and all subsidiaries, as well as employees and crude capacity of any joint venture partners. *See* § 80.225(a)(2). EPA interprets a subsidiary of a company to mean any subsidiary in which the company has a 50 percent or greater ownership interest.

5. **Question:** In applying for small refiner status, does a refiner have to include in its average crude capacity in 1998 any capacity used under a leasing agreement at a refinery it does not own?

**Answer:** The regulations require a refiner applying for small refiner status to provide its total corporate crude capacity in its application. The definition of small refiner is limited to those refiners with average crude capacity in 1998 less than or equal to 155,000 barrels per calendar day (bpcd), and no more than 1,500 employees in 1998. In determining crude capacity, the regulations require refiners to include the crude capacity of any subsidiary companies, any parent company and subsidiaries of the parent company, and any joint venture partners. Other than these specific entities, the regulations do not specify which refineries must be included in the crude capacity calculation for small refiner status. *See* §§ 80.225 and 80.235.(a)(2)

The crude capacity limit was adopted to ensure that only truly small companies who need additional time to comply can qualify for small refiner status. Refiners who have relatively large crude capacity will likely be in a better position to finance and install desulfurization equipment

to meet the national standards in 2004, even if they employ less than 1,500 people. In addition, the crude capacity limit is intended to limit the potential environmental impacts of the small refiner standards, by ensuring that the volume of gasoline subject to such standards is not significant. *See* 65 FR 6767.

EPA interprets its regulations to require refiners applying for small refiner status to include only the crude capacity in 1998 at refineries it owned, including refineries owned by subsidiaries, parent companies and subsidiaries of the parent company, and partners in joint ventures. Thus, refiners are not required to include crude capacity used in 1998 pursuant to a lease agreement with another refiner in which it has no ownership stake. This approach is consistent with the purposes of the capacity limit. First, an agreement to lease crude capacity is not likely to significantly impact a refiner's ability to finance and install desulfurization equipment at its refineries. While such an agreement will have some value, we do not expect it will be sufficient to assist a refiner in generating capital to make refinery investments to reduce sulfur in time to meet the national standards in 2004.

In addition, this interpretation will not increase the volume of gasoline potentially subject to the small refiner standards. Small refiner standards apply based on the small refiner's baseline sulfur level and baseline volume. These values are calculated for each of the small refiner's refineries. *See* §§ 80.245 and 80.250. As described above, the crude capacity at a facility leased by a small refiner is not considered part of the refiner's capacity for purposes of small refiner status. Therefore, that facility is not considered one of the small refiner's refineries, and is not assigned a baseline sulfur level or volume under § 80.250. Thus, production at that refinery is subject to the national sulfur standards.

6. **Question:** The sulfur rule says that a small refiner must produce gasoline by processing crude oil through a refinery processing unit. Does our refinery meet that requirement if we produce gasoline by processing crude oil through a processing unit, but we sometimes finish creating our batches through the later addition of other blendstocks at the refinery? We add components such as ethanol or raffinate to create the qualities we want in the finished batch.

**Answer:** Under § 80.225(a), a small refiner is a refiner who processes crude oil through refinery processing units, employed an average of no more than 1,500 people during 1998, and had an average crude capacity less than or equal to 155,000 barrels per calendar day for 1998. In the situation described in this question, the refiner fits that part of the small refiner definition that requires the refiner to be one who processes crude oil through refinery processing units, since the refiner produces gasoline by processing crude oil. The fact that the refiner may also finish a batch through the later addition of other blendstocks does not affect its small refiner status. However, the volume of blendstocks used by the refiner should be excluded from the determination of crude capacity, unless the blendstocks have undergone substantial transformation through the refining process.

## ALLOTMENTS AND CREDITS

1. **Question:** Should California gasoline be excluded from baseline calculations for purposes of generating early credits?

**Answer:** Yes. California gasoline as defined in § 80.375 should be excluded from 1997-1998 baseline calculations for purposes of generating early credits, and also for purposes of submitting a baseline under the small refiner, GPA or temporary hardship relief provisions. The sulfur regulations provide that California gasoline is not subject to any of the provisions of the sulfur program. *See* § 80.200. This includes the baseline application provisions at §§ 80.245 and 80.290, as well as the provisions for determining annual sulfur levels at § 80.205. The sulfur regulations also provide that the 1997-1998 sulfur baselines are based on the refiner's RFG/anti-dumping compliance data, as submitted to EPA in the RFG/anti-dumping reports. California gasoline is generally required to be excluded from these reports. *See also* EPA's "Guidance to Parties Submitting Gasoline Sulfur Baseline Applications" (EPA420-S-00-001, March 2000), which is posted on the Office of Transportation and Air Quality web site at: <http://www.epa.gov/otaq/tr2home.htm>.

2. **Question:** The baseline submission guidance is silent on the impact of refinery acquisitions and sales on a gasoline sulfur baseline. Please provide guidance on how a refinery sale or acquisition during 1997/1998 should be handled with regard to baseline establishment, and how a refinery sale/acquisition should be handled after 1998 and prior to submitting a baseline application (i.e, sale or acquisition during 1998-2000). If a refiner did not produce gasoline in 1997-1998 (for example, a recent start-up), how would that refiner establish a sulfur baseline for credit generation? Is there a process for resubmitting a baseline if a refinery is sold/acquired after a baseline has been approved?

**Answer:** We interpret the regulations to require a refinery's sulfur baseline to be calculated based on all of the gasoline produced by the refinery during 1997-1998, without regard to ownership. In the case of a refinery that changed ownership during 1997-1998, or after 1998, we expect that any data required to establish the sulfur baseline generated prior to the new owner's acquisition of the refinery will be available to the new owner for purposes of submitting a baseline application. If a refinery changes ownership after its baseline is approved, the new owner would need to submit a baseline application for the refinery under § 80.290. The new owner would indicate in the application that the refinery had received an approved baseline under prior ownership.

For a refinery that was not in operation in 1997-1998, we believe that sulfur data for at least 12 consecutive months should be required to establish a sulfur baseline for early credit generation. The baseline application for such a refinery should include data for the gasoline produced during each year the refinery was in operation after the refinery was reactivated. Where appropriate, the baseline for such refineries will be determined based on the annual average sulfur content for the most recent year of operation. We intend to modify the regulations to provide for this situation in a future rulemaking.

3. **Question:** If a refiner believes that certain data submitted in the 1997-1998 RFG/anti-dumping batch reports contains some inaccuracies (which would not have resulted in non-compliance), can or should such data be excluded from the data submitted to EPA for purposes of establishing a 1997-1998 sulfur baseline?

**Answer:** We believe that such a determination would depend on the refiner's specific concerns. We suggest that any refiner who has concerns about data quality consult with EPA before submitting a sulfur baseline application.

4. **Question:** Recently issued guidance specifies that GTAB must be excluded from the volume of gasoline for determining a sulfur baseline. Please explain why GTAB is to be excluded. Does this exclusion apply to both domestic importer-refiners and foreign refiners?

**Answer:** The recent EPA guidance on baseline submissions specifies that GTAB ("gasoline treated as blendstock") batch report data should not be included in baseline determinations for sulfur. See "Guidance to Parties Submitting Gasoline Sulfur Baseline Applications," March 2000. This guidance was intended primarily for domestic importer-refiners who use GTAB. The GTAB approach under the RFG program is designed to allow domestic importer-refiners to correct off-spec imported gasoline by conducting remedial blending before it leaves the importer-refiner's facility. In this situation, the GTAB is used by the party as a *blendstock* and blended with other components to bring the product to specifications. The regulations provide that only finished gasoline is to be included in the baseline determination. Therefore, GTAB batches should be excluded from baseline calculations by importer-refiners, as described above.

In the case of a foreign refiner, baselines are determined based on the volume and sulfur content of all of the finished gasoline produced at the foreign refinery that is imported into the U.S. See §§ 80.94(b) and 80.410(b). Gasoline is not designated as GTAB when it leaves the foreign refinery. It is not until the gasoline is imported into the U.S. that the product is designated as GTAB by the importer-refiner. As a result, a foreign refiner would not have any basis upon which to exclude from its baseline determination any gasoline produced by the foreign refinery that was imported into the U.S. in 1997-1998, including gasoline that was subsequently used by the importer-refiner as GTAB. Therefore, a foreign refiner should include in its baseline calculations all gasoline that was imported into the U.S. in 1997-1998, regardless of whether any of the gasoline was subsequently used by the importer-refiner as GTAB.

5. **Question:** If a foreign refiner registers and submits its sulfur baseline for purposes of generating credits in 2000, when can the foreign refiner begin to designate cargoes for credit generation?

**Answer:** Early credits generated by a foreign refiner who has an approved sulfur baseline will be based on all of the gasoline produced by the foreign refinery that is imported into the U.S. during the annual averaging period. Therefore, for the purpose of determining credits for the

2000 annual averaging period, all shipments of gasoline produced at a foreign refinery and exported to the U.S. from January 1, 2000, through December 31, 2000, may be included in calculating the refinery's annual average sulfur level. For credits generated in 2000, the foreign refiner will be required to submit a sulfur report by February 28, 2001, which includes data relating to the refinery's sulfur baseline, the sulfur content and volume of the gasoline exported to the U.S. by the refinery during the averaging period, and credits generated.

6. **Question:** The allotment program is very complex. The calculation of allotments and/or credits may be a critical factor in a refiner's compliance. What mechanisms will be adopted by EPA to avoid problems of refiner compliance due to misinterpretation and errors in calculations?

**Answer:** Although the allotment program appears complex, we believe that the equations provided in § 80.275 are straightforward and relatively easy to apply. We will, however, provide assistance to any company that is having difficulty applying these provisions.

7. **Question:** Why are credits and allotments expressed in ppm-gallons and not in ppm-barrels, since barrels or thousand barrels are the commercial units used by refiners?

**Answer:** Consistent with the requirements under the RFG program, § 80.195(a)(2) provides that, for purposes of sulfur compliance and reporting, volumes are expressed in gallons. Accordingly, credits and allotments are required to be calculated and reported in units of ppm-gallons. Although barrels may be the commercial units used by refiners, the conversion from barrels to gallons requires a simple calculation which should not impose an undue burden on regulated parties.

8. **Question:** The regulations at § 80.275(a)(2)(i) discount Type A sulfur allotments by 20 percent when the average sulfur content is  $\leq 30$  ppm, whereas the preamble states that allotments retain full value if the annual average sulfur level is  $\leq 30$  ppm. Similarly, § 80.275(a)(2)(ii) includes a 20 percent discount for Type A sulfur allotments. Which is correct, the regulations or the preamble?

**Answer:** There is an inconsistency between the regulations and the preamble regarding whether Type A sulfur allotments should be discounted when the refiner's average sulfur content is  $\leq 30$  ppm. The approach we intended to adopt is the one stated in the preamble, in which allotments retain full value if the annual average sulfur level is  $\leq 30$  ppm. *See* 65 FR 6759. We intend to correct the equations at § 80.275 in a future rulemaking.

9. **Question:** In the preamble, an example is given of a refinery generating allotments based on a 2003 average of 50 ppm and 20 ppm. Please demonstrate the credits and allotments generated for each refinery and under each scenario for 2003 in the table shown below to help clarify how credits and allotments are generated under various conditions.

	Baseline	2003a	2003b	2003c
Refinery A	25	35	25	20
Refinery B	50	50	25	40
Refinery C	100	50	25	80
Refinery D	300	50	25	240

**Answer:** The allotments and credits that would be generated in 2003 in the scenarios described are as follows (assume 1 gallon volume). (Note that we intend to modify §§ 80.274(a)(2)(i) and (ii) to delete the discount factor of 0.8 in these provisions - See Question 9 above.)

Refinery A (Baseline - 25 ppm):

- a) Average 35 ppm (§ 80.275(a)(2)(v)):  $((25 - 35) \times 1) \times 0.8 = 0$  allotments
- b) Average 25 ppm (§ 80.275(a)(2)(iii)):  $(25 - 25) \times 1 = 0$  allotments
- c) Average 20 ppm (§ 80.275(a)(2)(iii)):  $(25 - 20) \times 1 = 5$  Type B allotments

Refinery B (Baseline - 50 ppm):

- a) Average 50 ppm (§ 80.275(a)(2)(v)):  $((50 - 50) \times 1) \times 0.8 = 0$  allotments
- b) Average 25 ppm (§ 80.275(a)(2)(ii)):  $(50 - 30) \times 1 = 20$  Type A allotments  
 $(30 - 25) \times 1 = 5$  Type B allotments
- c) Average 40 ppm (§ 80.275(a)(2)(v)):  $((50 - 40) \times 1) \times 0.8 = 8$  Type A allotments

Refinery C (Baseline - 100 ppm):

- a) Average 50 ppm (§ 80.275(a)(2)(v)):  $((100 - 50) \times 1) \times 0.8 = 40$  Type A allotments
- b) Average 25 ppm (§ 80.275(a)(2)(ii)):  $(100 - 30) \times 1 = 70$  Type A allotments  
 $(30 - 25) \times 1 = 5$  Type B allotments
- c) Average 80 ppm (allotments/credits may not be generated under § 80.275(a)(2) if the refinery average is greater than 60 ppm; however, in this example, credits may be generated under § 80.305):  
 $1 \times (100 - 80) = 20$  credits.

Refinery D (Baseline - 300 ppm):

- a) Average 50 ppm (§ 80.275(a)(2)(iv)):  $(300 - 120) \times 1 = 180$  credits  
 $((120 - 50) \times 1) \times 0.8 = 56$  Type A allotments
- b) Average 25 ppm (§ 80.275(a)(2)(i)):  $(300 - 120) \times 1 = 180$  credits  
 $1 \times 90 = 90$  Type A allotments  
 $(30 - 25) \times 1 = 5$  Type B allotments
- c) Average 240 ppm (allotments/credits may not be generated under § 80.275(a)(2) if the refinery average is greater than 60 ppm; however, in this example, credits may be generated under § 80.305):  
 $1 \times (300 - 240) = 60$  credits



10. **Question:** Between 2000 and 2003, a refinery can generate early sulfur credits, which would be reported to EPA, but the refinery would not report any deficit (i.e., if the refinery produced higher sulfur gasoline than its 1997-1998 baseline during 2000-2003). If the refinery's annual average sulfur level in 2000-2003 exceeds the refinery baseline, there is no violation of EPA regulations as long as all RFG and anti-dumping regulations are met. Are these statements correct?

**Answer:** These statements are correct since there is no sulfur standard prior to 2004. However, parties would be liable for any improper credits that are claimed.

11. **Question:** The preamble says: "Beginning July 1, 2000, certain requirements apply to parties that voluntarily opt for early sulfur reduction under the average banking and trading (ABT) provisions." Specifically, what begins on July 1, 2000? Is this date correct?

**Answer:** The NPRM proposed to require refiners who wish to generate credits during 2000-2003 to submit a sulfur baseline application to EPA by July 1, 2000. However, the date for submission of a sulfur baseline application for early credit generation was changed in the final rule to September 30 of the year in which the refiner plans to begin generating credits. *See* § 80.290(a). Beginning in 2000, refiners who wish to generate early credits are also required retain records of the sulfur content of each batch produced by the refinery for any year in which the refinery generates credits. In addition, refiners who are not already registered under the RFG/CG program must register with EPA by September 30 of the year prior to the first year of credit generation, or by May 10, 2000, for credits generated in 2000.

12. **Question:** In a scenario where two refineries are owned by the same parent company, is there any situation in which one refinery (GPA refinery) could not use allotments and/or credits that were generated by the other refinery (non-GPA refinery)?

**Answer:** Credits generated by the non-GPA refinery (or any other refinery) may be used by the GPA refinery for demonstrating compliance with the refinery's GPA gasoline standard, if used in accordance with the provisions for credit use in § 80.315. Although allotments may not be used to achieve compliance with the refinery or importer annual average standards at § 80.195 (except in 2005), allotments may be used to demonstrate compliance with the GPA gasoline standards. *See* § 80.216(d). Therefore, allotments generated by the non-GPA refinery may also be used by the GPA refinery for demonstrating compliance with the refinery's GPA standard, if used in accordance with the provisions for allotment use in § 80.275(c). However, in the scenario described above, allotments would only be generated if the company is subject to the corporate pool average standards under § 80.216(f)(i.e., less than 50 percent of the company's gasoline production is GPA gasoline.)

13. **Question:** It is our understanding that blender terminals are not able to establish a baseline or generate early credits under the sulfur regulations. Is this correct? If not, how would a sulfur baseline be determined for that party? For example, if a downstream terminal is

registered as a refiner and produces gasoline by blending a naturally produced material such as natural gasoline or condensate with other gasoline blending components, how would that facility be treated under the sulfur regulations?

**Answer:** Under the sulfur regulations, any person who produces gasoline by blending blendstocks is a refiner subject to all of the standards and requirements of the sulfur rule. *See* §§ 80.2(h) and (i). However, the sulfur regulations specify that early credit generation is limited to refiners who produce gasoline from crude oil. *See* § 80.285(a). As a result, a refiner who only produces gasoline by blending blendstocks, such as blending natural gasoline or condensate with other blending components, would not be able to generate early credits, and therefore, would not need to establish a sulfur baseline. However, a blender refiner may participate in the credit program in 2004 and thereafter based on reductions from the 30 ppm sulfur standard. *See* § 80.285(b). A blender refiner may generate early credits at any of its refineries that produce gasoline from crude oil.

14. **Question:** During the period of early credit generation (2000-2003), would a foreign refiner be able to earn credits for gasoline components exported to the U.S. for blending into finished gasoline?

**Answer:** Under the regulations, early credits are generated based on finished gasoline produced during the averaging period. *See* § 80.305. As a result, a refiner would not be able to generate early credits based on gasoline components. As discussed in Question 13 above, the blender refiner who blends the components into finished gasoline also would not be able to generate early credits, since the regulations only allow refiners who produce gasoline from crude oil to generate early credits.

15. **Question:** Can allotments be generated by blender refiners who combine blendstocks with finished gasoline downstream from the refinery?

**Answer:** EPA intended for generation of early allotments, like early ABT credits, to be limited to refiners who produce gasoline from crude oil. We intend to revise the regulations in accordance with this approach in a future rulemaking. Like ABT credits, blender refiners may generate allotments in 2004 and 2005.

16. **Question:** Section 80.315 states that the credit transferor must apply any credits necessary to meet the transferor's applicable average standard before transferring credits to any other refiner or importer, and that no credits may be transferred that would result in the transferor having a negative balance. It is not clear why a refiner can carry over a negative balance under § 80.205(e) because he blended high sulfur gasoline, but not because the refiner sold credits.

**Answer:** Section 80.205(e) is included in the regulations to provide additional flexibility in the early years of the sulfur program for those refiners who have difficulty meeting the sulfur standard due to circumstances such as an unexpected shutdown or an inability to obtain sufficient

credits. Under this provision, such refiners are not required to purchase credits before utilizing the deficit carry-over provisions. However, EPA believes that a refiner who has generated or otherwise obtained credits should use those credits to achieve compliance in the event of a deficit rather than transferring the credits and carrying the deficit over to the next averaging period. As a result, the regulations provide that a refiner may not transfer credits if doing so would create a deficit for that refiner for that averaging period.

17. **Question:** There is significant difference between "refiner" and "refinery". Portions of the regulations use "refiner" where "refinery" is the appropriate term. While it may be clear from the context that "refinery" is meant, text should be changed to avoid any possible misunderstandings.

**Answer:** We agree with the comment and intend to make these clarifications in a future rulemaking. These clarifications would not affect the regulatory requirements in the current final rule.

## SAMPLING AND TESTING

1. **Question:** Can a refiner or importer use gasoline sulfur test methods other than ASTM D 2622-98, especially for sulfur levels of 10 ppm and less?

**Answer:** The rule designates ASTM D 2622 as the benchmark test method by which compliance will be determined, and that is the test that the Agency typically will use in establishing compliance. However, the rule does permit alternative test methods to be used for affirmative defense purposes, but only if the alternative test method has been appropriately correlated to the regulatory method, and the alternative test protocols have been followed. See § 80.330(c). EPA hopes to publish a proposal for a performance based measurements systems rule (PBMS), which would ultimately codify standardized procedures by which a party may qualify alternative test methods.

2. **Question:** If a refiner produces a gasoline batch less than 10 ppm sulfur by ASTM D-2622, how can an average be obtained with this test method without losing the lower sulfur level batch in the average? For example:

Batch 1 100,000 BBLs at 32 ppm S.

Batch 2 20,000 BBLs at 1 ppm S.

Average using 1ppm actual S would be 29.33 ppm

Average using 10 ppm S D-2622 (lower detectable level) would be 30.83 ppm

Can EPA specify a method that actually measures less than 10 ppm to determine measurements below 10 ppm sulfur? Industry needs some additional clarification on use of method D- 2622 for determining values less than 10-20 ppm.

**Answer:** The test method D-2622 was originally selected because the technique of Wavelength Dispersive X-ray Fluorescence has been widely demonstrated to exhibit excellent linearity with little or no bias across the range of sulfur concentrations present in commercial motor fuel mixtures. This absence of bias is central to the concerns regarding variability at very low levels of sulfur in motor fuels.

In general, EPA believes that the method selected, D-2622, has demonstrated sufficient linearity that results may be entered for their actual reading, not truncated to the limit of quantification (LOQ) when the actual reading is lower. For example, if the laboratory in question believes that their LOQ is 10 ppm, and a particular sample actually reads as containing 5 ppm, the answer does not have to be changed to 10 ppm for reporting.

In the example presented in the question, the result for the 1 ppm sample is either truncated to the method's LOQ, or assumed to be read at the upper limit of its statistical boundary (in other words, the reading was as bad as it could acceptably be). While this may yield a non-complying average in this case, in fact the case is not representative of what is realistically expected in commerce. According to the regulation, the reporting period for the averaging of sulfur results is one year. EPA is not aware of refineries that can afford to produce only two batches in a year.

Because the selected method is assumed to be linear and without bias, it is reasonable to assume that over the one year reporting period, the randomness that occurs in sulfur measurement will average to zero. That is, high results will have offsetting low results. This is the definition of zero bias.

In fact, EPA believes that this sample problem can be contrived for any commonly available test method, as all test methods demonstrate some degree of randomness in their use. In addition, this randomness is not confined to the lower end of the concentration scale. Typically, ASTM variability rates are expressed as a function of concentration. This means that in most cases, the variability in results from samples containing higher concentrations are greater in absolute terms than the variability of samples of lower concentrations. For example, if a method has a variability rate that is expressed as variability = conc. \* 10 percent, a sample containing 500 ppm could be read as off by as much as 50 ppm, while a sample containing 20 ppm could be read as off by only up to 2 ppm. Since the actual averaging scheme is a linear one, the 50 ppm error will clearly dominate.

As in the example in the question, this is a contrived situation, unlikely to be seen in commerce. In fact, most ASTM test methods have variability that is expressed as a combination of a proportional part and a linear part. This example does serve to demonstrate that within the averaging scheme in the regulation, smaller individual results have much less impact on the overall averaged result than larger ones.

EPA believes that if test method D-2622 is calibrated carefully, with particular attention paid to the origin by the inclusion of blanks in the calibration standard set, the variability that

results from samples of lower concentration will be averaged out over the reporting period. The outcome of this will be that inappropriately noncompliant averages will not be observed.

3. **Question:** What test requirements exist for determination of the sulfur content of denatured ethanol? What test method must be used to determine the sulfur content of ethanol? In the absence of an approved test method, what guidance can the Agency provide fuel ethanol producers to avoid a violation? Will the Agency consider postponing enforcement of the ethanol sulfur specification until an ASTM test method for sulfur in ethanol is established?

**Answer:** The regulations do not require an ethanol blender, producer or supplier to test ethanol for sulfur content. The regulations do prohibit blending denatured ethanol into gasoline if the sulfur content of the denatured ethanol exceeds 30 ppm. *See* § 80.385(e). We expect the sulfur content of denatured ethanol would seldom approach 30 ppm under current ethanol production industry practices. To address ethanol blender concerns about the possible receipt of high sulfur ethanol, however, these blenders might choose to establish commercial (*e.g.*, contractual) arrangements with their suppliers to only supply ethanol whose sulfur content does not exceed 30 ppm. Further, the ethanol blenders could create quality assurance programs which periodically test received ethanol for compliance of sulfur content.

We believe that ASTM D 2622-98, the designated method for testing for sulfur content of gasoline, will be useable for this testing purpose, as long as the calibration of the instrument is performed with an ethanol blend that is representative of the samples that are expected to be tested. Since we believe this ASTM method is sufficiently precise to determine if the sulfur content of the denatured ethanol exceeds 30 ppm, we do not believe there is a need to postpone enforcement.

4. **Question:** Section 80.46(a) was amended by the rule to require the use of ASTM D-3246 to determine the sulfur content of butane. Many refiners and butane suppliers do not currently use that method. Requiring a new method prior to the 2004 effective date of the gasoline sulfur standards would be costly for these companies. What is the effective date for the use of ASTM D 3246-96 for testing butane for sulfur content?

**Answer:** The final gasoline sulfur rulemaking amended 40 CFR § 80.46(a) to require the use of ASTM D 3246-96 to determine the sulfur content of butane. We did not intend to require the use of this new test method to be effective immediately. We intended that it should take effect January 1, 2004, when a butane sulfur content standard becomes effective for refiners who produce gasoline by blending butane to previously certified gasoline. Until January 1, 2004, any appropriate ASTM method may be used for testing the sulfur content of butane. We intend to take regulatory action to clarify the effective date of the regulatory butane test method.

5. **Question:** Under § 80.330(a), a refiner or importer must sample and test each batch of gasoline for sulfur content prior to shipping the gasoline from the refinery or import facility, effective January 1, 2004, or January 1 of the first year of credit generation, whichever comes

first. Paragraph (a)(3) provides an exception to the requirement to test before the gasoline leaves the facility for parties who test composited samples. Is a refinery that tests every batch of conventional gasoline produced (*i.e.*, does not test composite samples) exempt from the requirement to test prior to the gasoline leaving the refinery, prior to 2004?

**Answer:** Under the provisions of § 80.330(a), all refiners and importers who participate in early credits or allotments generation would be required to test each batch of gasoline they produce or import for sulfur content prior to the gasoline leaving the facility, except that: (1) parties who collect and test composited samples of conventional gasoline would be allowed to continue that practice until January 1, 2004; and (2) parties who have approved in-line blending waivers are exempt from the requirement to test before the gasoline leaves the refinery even after standards go into effect starting January 1, 2004. The rule did not address whether parties who currently test each batch of gasoline by testing a representative sample taken from the certification tank (*i.e.*, who do not test composite samples) would be exempt from testing each batch prior to the gasoline leaving the facility prior to January 1, 2004. We did not intend to make refiners who test every batch of CG to have more severe requirements than refiners who test composite samples. Until January 1, 2004, refiners who test each batch of gasoline may release the gasoline prior to obtaining a test result. We intend to clarify this in a technical amendment to the regulation.

6. **Question:** Is a conventional gasoline refinery, participating in early credits generation, and using in-line blending, required to have an in-line blending waiver in order to participate in the early credit generation program (*i.e.*, prior to 2004)?

**Answer:** Section 80.330 requires that a refinery must determine the sulfur content each batch of conventional gasoline or RFG produced prior to the gasoline leaving the refinery unless the refinery has an approved in-line blending waiver under § 80.65(f)(4). A refinery that currently produces conventional gasoline by in-line blending but has no in-line blending waiver cannot participate in the early credits program unless it obtains an in-line blending waiver. However, the in-line blending waiver for conventional gasoline is only required to address sulfur sampling and analysis. We will make every effort to review in-line blending waivers promptly. Where appropriate, EPA may determine that the in-line blending waiver may apply retroactively to the date that the refinery first met all requirements for an in-line blending waiver.

7. **Question:** If a refinery that is participating in the early credits program is testing composite samples of conventional gasoline prior to 2004, must it nevertheless retain samples from each batch of gasoline produced?

**Answer:** Section 80.335(a) provides that beginning January 1, 2004, or January 1 of the first year allotments or credits are generated under §§ 80.275 and 80.305, whichever is earlier, a refiner must retain representative samples of the gasoline batch samples analyzed under the requirements of this subpart. Composited samples are treated as representative of a single batch of gasoline. *See* § 80.330(a)(3). Compositing of samples for sulfur testing purposes is allowed

until January 1, 2004. Hence, prior to January 1, 2004, those refiners who analyze composited samples of conventional gasoline are required only to retain portions of the composited samples pursuant to §§ 80.330(a)(3) and 80.335(a)(1).

8. **Question:** Section 80.335(a)(2) requires refiners to retain sample portions for the most recent 20 samples collected, or for each sample collected during the most recent 21 day period, whichever is greater. Is a refinery that produces only one or two batches of gasoline per year required to retain samples for up to 10 or 20 years?

**Answer:** The cited section of the regulation specifies the minimum number of batch samples from a refinery, which once created, must be maintained (twenty). The regulation does not specifically address the maximum amount of time that any particular sample must be maintained. This was not considered to be an issue since the Agency assumed that refineries and importers produce or import a substantial amount of batches each year. Such parties would accrue the twenty batch minimum in relatively short order, so that they would effectively be able to dispose of any additional, older samples quickly. This question indicates, however, that at least one refiner or importer handles less than a handful of batches each year, so that its batch samples might have to be retained for an extensive amount of time, such as between ten and twenty years. The Agency did not intend for refiners to be required to maintain sulfur samples for an excessive amount of time. We will address this issue through a future rulemaking.

9. **Question:** Several denaturants are used for fuel ethanol, including conventional gasoline, raffinate, LSR gasoline and natural gasoline. The predominant denaturant used is natural gasoline, which could be described as a “gasoline blendstock.” Does EPA intend to treat an oxygenate blender using ethanol denatured with denaturants other than unleaded gasoline as a “refiner” for the purposes Tier 2 compliance?

**Answer:** The gasoline sulfur rule states that oxygenate blenders who blend oxygenate into gasoline downstream of the refinery are not subject to the rule’s refiner requirements, but are, instead, subject to downstream standards and prohibitions. *See* § 80.212. The Agency interprets the term oxygenate blenders under the gasoline sulfur rule to include those ethanol blenders who blend ethanol into gasoline, even though the ethanol may contain gasoline denaturants, in a manner consistent with ASTM specifications, which are not unleaded gasoline. This inclusive interpretation makes the gasoline sulfur rule’s treatment of ethanol blenders consistent with that found under the RFG/CG and oxygenate blender programs. Under these programs, ethanol blenders, regardless of the denaturant involved, are exempted from those provisions of the programs under 40 CFR Part 80 which are applicable only to refiners and importers of gasoline. The rationale for this inclusion under these programs is that the blending of only denatured ethanol (up to 10 percent by volume) should not cause the gasoline to violate the RFG/CG volatility standards, where the ethanol is added in compliance with regulatory requirements and where the blended oxygenate does not otherwise affect the quantity or quality of gasoline.

The Agency believes that the same rationale applies under the sulfur program, provided

that the ethanol blender does not blend into the gasoline ethanol containing more than 30 ppm sulfur. Compliance with this sulfur content prohibition should ensure compliance of the blended gasoline with the low sulfur requirements of the rule. Due to this prohibition, the Agency believes that market forces will ensure the use of low sulfur denaturants in ethanol to be sold to ethanol blenders.

10. **Question:** A refiner produces a batch of gasoline at its refinery. It collects a sample of the gasoline and conducts certification testing. The sulfur content test result is less than the 80 ppm refinery level standard. The gasoline is then moved to another tank within the refinery, where it is commingled with several other certified batches whose certification test results were also less than 80 ppm. The gasoline is sampled and tested subsequent to being moved. Does the 95 ppm downstream sulfur standard apply to this subsequent test result?

**Answer:** The downstream standard applies to samples of gasoline subsequent to movement of the gasoline from the tank in which certification sampling is conducted, even when these subsequent samples are collected within the refinery or import facility where the gasoline is produced or imported. Thus, a refiner or importer may conduct a quality assurance program of the gasoline located at the refinery or import facility that previously has been certified, and apply the downstream cap standard when evaluating the quality assurance samples.

11. **Question:** A refiner or importer produces or imports a batch of gasoline and collects a sample of that gasoline for certification testing. The refiner's or importer's certification test result for the gasoline is less than 80 ppm. EPA takes a sample of the same batch of gasoline from the certification tank. (Or a refiner or importer submits a retained sample of certified gasoline to EPA.) The EPA test result for the gasoline is greater than the 80 ppm refinery level standard. Would EPA consider the sample to be in violation of the refinery level cap standard? Under the same scenario, but where the EPA test result is also under 80 ppm, but is greater than the refiner's test result, would EPA consider the refiner's test result invalid for purposes of calculating the average annual sulfur level of the refiner's gasoline?

**Answer:** EPA would determine whether the batch is in violation of the cap standard based on whether it exceeds the 80 ppm refinery level standard. If the EPA test result is greater than 95 ppm, the batch would be in violation, since any test result over 95 ppm exceeds ASTM reproducibility for gasoline whose true sulfur value is less than 80 ppm. If the EPA test result is greater than 80 ppm but less than 95 ppm, EPA would reserve the right to determine whether the true sulfur value of the sample is greater than the 80 ppm refinery level cap. EPA could make this determination by conducting multiple analyses on the sample, by submitting the sample to other laboratories for testing, by testing other samples collected from the same batch of gasoline, or by any other means that would give EPA sufficient confidence that the sulfur level of the sample exceeds 80 ppm.

In the second scenario, EPA would consider the refiner's annual average calculations to be incorrect if we determine that the refiner's test results demonstrate a bias in favor of batch certification testing for sulfur content that is less than the true value. EPA might determine such



a bias, for example, based on testing a series of retains or other samples, and comparing EPA's sulfur results with those of the refiner. It is possible for such a bias to exist even though all samples tested are under the cap standard, and even if EPA test results do not necessarily differ from the refiner's by greater than ASTM reproducibility.

## **DOWNSTREAM TESTING FOR S-RGAS**

1. **Question:** When we transfer gasoline from our terminals we generate two PTDs for each transfer: (1) a bill of lading (BOL) from the terminal for custody transfer, and (2) an invoice generated by the accounting staff for title transfer. These two PTDs are generated not only at different locations, but also by different programs. We cannot realistically guarantee that the accounting department's invoice PTD will have the same information on it as to S-RGAS status as will the terminal's BOL. This is because the S-RGAS status information must be generated based on testing which will only be performed at the terminal. We do not have an automated process to transfer this changing status information from the terminal to the accounting department. Therefore, to ensure consistency between the two PTDs, we will have to rely on the prompt, accurate transmittal of this information 100 percent of the time. Such foolproof, 100 percent successful, manual transmittal of varying S-RGAS status information cannot be assumed. How can we prevent PTD violations from occurring due to the varying manner in which we create our two PTDs?

**Answer:** The regulation requires that on each occasion when downstream parties transfer title or custody to S-RGAS or mixtures of this gas, the transferor must provide the transferee product transfer documentation identifying the S-RGAS status and standard applicable to such gasoline. *See* § 80.210(e)(2). Whether the gasoline is classified as S-RGAS on the PTD depends upon the gasoline being comprised in whole or in part of S-RGAS, the receipt of a PTD stating that the product is S-RGAS, and a test result confirming that the sulfur content exceeds the regulatory threshold under § 80.210(d)(3). The intent of these PTD identification requirements is to provide the transferee with accurate S-RGAS information about the gasoline being received. If a downstream party transferring custody of gasoline provides accurate information as to S-RGAS status and sulfur standard, as applicable, on its BOL to its transferee, the Agency believes that this goal of accurate S-RGAS information transmission is effectively satisfied. Therefore, in situations in which both a custody PTD and a separate title PTD are generated by a downstream party for the same gasoline, the Agency will consider the requirement of S-RGAS status and standard transmission satisfied if the custody transfer PTD accurately provides the required information, and the title transfer PTD also provides that same information, or it indicates that the S-RGAS information is contained on the custody PTD.

2. **Question:** Truckers may obtain both premium gasoline and regular gasoline from a terminal in order to supply a retail outlet with midgrade gasoline. In such cases, if a truck obtains a load of gasoline from a terminal that consists of a mixture of gasoline from a terminal tank that is properly designated as S-RGAS, and gasoline from another tank that is not S-RGAS, how must the terminal and trucker classify the gasoline, and must an additional sample be obtained

and tested of the combined product from the 2 storage tanks?

**Answer:** The regulation specifically exempts gasoline in trucks from the testing requirement for S-RGAS, and instead allows truckers to rely on the test result of the terminal supplying the truck carrier. *See* § 80.210(d)(4). Where a tanker truck receives a load of midgrade gasoline that is comprised of S-RGAS and non-S-RGAS dispensed into the same compartment for the purpose of making midgrade gasoline, whether through in-line blending or otherwise, the transferred gasoline could properly be classified on the PTD as S-RGAS, provided that the intent was to create mid-grade gasoline. However, if a relatively small volume of S-RGAS were to be blended with non-S-RGAS, the gasoline in the tanker truck could not be classified as S-RGAS, since such blending is not consistent with the need to make midgrade gasoline from premium and regular gasoline.

3. **Question:** A terminal provides gasoline to a truck at the terminal's truck rack at the same time the terminal is receiving gasoline into the same storage tank that is supplying the truck. The gasoline already in the terminal's storage tank is properly classified as containing S-RGAS before the new delivery of gasoline into the tank. The new delivery of gasoline into the terminal's tank is not classified by the pipeline as S-RGAS. How should the gasoline being supplied to the truck be classified on the terminal's PTDs, and at what point does the classification change?

**Answer:** Under the regulation, the terminal must obtain a representative sample of gasoline from the storage tank and test it for sulfur content after receipt of the new load of gasoline into the terminal tank in order to continue to qualify the gasoline in the tank as S-RGAS (§ 80.210(d)(3)). Assuming the new receipt of gasoline is loaded into the terminal storage tank as per normal practices, the terminal would not be required to retest the tank to determine if it still qualifies as S-RGAS until the new load is fully received into the storage tank. Until that time, in the above scenario, the truck carrier could be given a PTD designating the gasoline as S-RGAS. Subsequent to the full receipt of the gasoline into the storage tank, however, a new sample must be obtained from the tank and be tested to determine if continuing to classify gasoline in the tank as S-RGAS (on PTDs), is still appropriate.

4. **Question:** Assume that the gasoline contained in the storage tank is not classified as S-RGAS when the truck begins to receive product, but gasoline classified by the pipeline as S-RGAS is being loaded into the terminal storage tank from a pipeline as the truck is being loaded. The gasoline going into the terminal storage tank is being bottom-loaded, and the gasoline going to the truck rack is also drawn from near the bottom of the terminal storage tank. May the terminal classify the gasoline being loaded to the truck as S-RGAS even though the gasoline in the terminal storage tank is currently classified as non-S-RGAS and may ultimately be classified as non-S-RGAS after sampling and testing subsequent to full receipt of the new load of gasoline from the pipeline?

**Answer:** Under the regulation the terminal must sample and test its gasoline subsequent to the receipt of the transferred gasoline into the terminal storage tank in order to qualify the

gasoline in the tank as S-RGAS. However, it is a common industry practice for terminals to supply gasoline from a storage tank at the same time the tank is also receiving product from a pipeline. Where a load of gasoline that is classified by the pipeline as S-RGAS is being received into the terminal storage tank, until full receipt of the load, a sample that meets the requirements of the regulation cannot be obtained from the tank. Even when a sample is ultimately taken and tested subsequent to full receipt of the load from the pipeline, the sample may not actually be representative of the gasoline that had previously been loaded into the truck, because in many situations the gasoline is being bottom-loaded into the terminal storage tank and is also being supplied to the truck rack from the bottom. Therefore, the truck may have received gasoline that would not have the same sulfur test result as would a sample that was obtained from the completed mixture. Since parties will not encounter this issue until January, 2004, we are studying the situation, and will address it through appropriate later guidance, either through a Q&A response or through regulatory action prior to that time.

### CALIFORNIA GASOLINE EXEMPTION

1. **Question:** Certain metropolitan areas in the western U.S. (but outside of California) may obtain fuel program waivers and adopt programs that require the use of gasoline meeting California requirements on at least a seasonal basis. Section 80.375(c) specifies that designated California gasoline must ultimately be used in the state of California and not elsewhere, and that designated California gasoline must be kept segregated from gasoline that is not California gasoline at all points in the distribution system. The segregation requirement could impose a burden on supplying California gasoline to a non-California area subject to a state program requiring California gasoline. Do federal rules preempt these states from making a requirement for California gasoline use? If not, would EPA consider removal of the segregation requirement?

**Answer:** EPA's adoption of gasoline sulfur standards preempts state actions to prescribe or enforce fuel sulfur controls. States desiring to have gasoline sulfur control programs approved in their SIPs need to obtain a waiver of EPA's preemption under § 211(c)(4)(C) of the Clean Air Act. *See* 65 FR at 6765. It is possible that a *state fuel* program would require the sale of gasoline meeting CARB standards within the state's jurisdiction as a means of compliance with the state program. The current regulations require California gasoline to ultimately be used in California to be exempt from the sulfur standards. We are reviewing issues related to the application of this limitation in the situation where gasoline meeting CARB standards may be required under a state program that has received a § 211(c)(4)(C) waiver from EPA. We will address these issues in a future guidance or rulemaking.

2. **Question:** Must a refinery that produces both California gasoline and federal RFG designate each batch produced as either federal RFG or California gasoline, and maintain segregation of both products, even though the gasoline meets the requirements of both programs?

**Answer:** Section 80.375(c) requires that each batch of California gasoline be designated as such by the refiner or importer, and that California gasoline be segregated from gasoline that is not California gasoline at all points in the distribution system. The designation and segregation

requirements for California gasoline are necessary to assure the enforceability of the federal gasoline sulfur rule and RFG rule. Because the federal sulfur rule refinery standard is an annual average standard, there would be no way to ensure that a refinery producing both California gasoline and federal gasoline is in compliance with the average standard unless gasoline designated for California use is actually used in California and gasoline designated for 49 state use is actually used in the 49 states.



## Gasoline Sulfur Rule Questions and Answers

The following are responses to questions received by the Environmental Protection Agency (EPA) concerning the manner in which the EPA intends to implement and assure compliance with the gasoline sulfur regulations at 40 CFR Part 80. This document was prepared by EPA's Office of Air and Radiation, Office of Transportation and Air Quality, and the Office of Enforcement and Compliance Assurance, Office of Regulatory Enforcement.

Regulated parties may use this document to aid in achieving compliance with the gasoline sulfur regulations. However, this document does not in any way alter the requirements of these regulations. While the answers provided in this document represent the Agency's interpretation and general plans for implementation of the regulations at this time, some of the responses may change as additional information becomes available or as the Agency further considers certain issues.

This guidance document does not establish or change legal rights or obligations. It does not establish binding rules or requirements and is not fully determinative of the issues addressed. Agency decisions in any particular case will be made applying the law and regulations on the basis of specific facts and actual action.

While we have attempted to include answers to all questions received to date, the necessity for policy decisions and/or resource constraints may have prevented the inclusion of certain questions. Questions not answered in this document will be answered in a subsequent document. The Agency intends to provide any additional responses as expeditiously as possible. Questions that merely require a justification of the regulations, or that have previously been answered or discussed in the preamble to the regulations have been omitted.

### COMPLIANCE

1. **Question:** Is a parent company responsible for complying with the corporate pool average standards in 2004 and 2005 for all of the refineries owned by its subsidiaries in addition to all of its own refineries?

**Answer:** Section 80.195(c) provides that the corporate pool average standards in 2004 and 2005 are the maximum average sulfur levels allowed for a refiner's or importer's gasoline production from all of the refiner's refineries or all gasoline imported by an importer in a

calendar year. The preamble to the final rule states that, for purposes of compliance with the corporate pool average standards, a parent company is considered to be the refiner of any refinery facilities owned by wholly-owned subsidiaries of the parent company. As such, the parent company must comply with the corporate pool average standards for these facilities. In its compliance calculations, the parent company must include the gasoline produced at any refineries it owns, plus the gasoline produced at any refineries owned by its wholly-owned subsidiaries. *See* 65 FR 6698, 6755 (February 10, 2000). We believe, however, that parties should have the option to comply with the corporate pool average standards on a corporate parent level or a subsidiary level. As a result, a parent company may demonstrate compliance with the corporate pool average standards based on all of the gasoline produced at all refineries owned by the parent company and the parent company's wholly-owned subsidiaries, or, the parent company may be deemed in compliance if it demonstrates compliance for the gasoline produced at all of its own refineries and each of the parent company's subsidiaries demonstrates compliance for the gasoline produced at all of its own refineries. The environmental benefits of the sulfur rule would not be compromised by allowing this option, since compliance on the level of each subsidiary would result in the corporate pool average standard being met by a greater number of pools with fewer refineries in each pool over which to average the sulfur content. We intend to modify the regulations to clarify this option in a future rulemaking. In any case, the parent company would remain liable for any violations by the subsidiary. *See* § 80.395(a)(11).

Similarly, where refineries are owned by subsidiaries of a foreign parent company, the foreign parent company may demonstrate compliance with the corporate pool standards for all of the gasoline produced at refineries owned by the foreign parent company's wholly-owned U.S. subsidiaries, or each U.S. subsidiary owned by the foreign parent company may demonstrate compliance with the corporate pool standards for its own refineries. As indicated above, in any case, the foreign parent company would remain liable for any violations by the subsidiary. Where the foreign parent company demonstrates compliance with the corporate pool standards for its U.S. subsidiaries, any gasoline imported into the U.S. that was produced at the foreign parent company's foreign refineries, or at refineries owned by foreign subsidiaries of the foreign parent company, would not be included in the parent company's compliance calculations, since the regulations provide that the sulfur standards, including the corporate pool average standards, are met by the importer for all imported gasoline. *See* § 80.195(a)(4).

2. **Question:** The regulations state that a partner to a joint venture may include the joint venture refinery in its corporate pool. If a foreign corporation is a partner in a U.S. refinery joint venture, and also owns a U.S. subsidiary which has several refineries, can the U.S. subsidiary establish a corporate pool composed of its refineries and the foreign parent's U.S. joint venture refinery?

**Answer:** Section 80.195(c) provides that a partner to a joint venture may include one or more of the joint venture refineries in its corporate pool. As discussed in Question 1 above, a parent company, domestic or foreign, may demonstrate compliance with the corporate pool average standards for the refineries owned by its wholly-owned subsidiaries, or each subsidiary

can individually demonstrate compliance with the corporate pool average standards for its own refineries. As a result, in the scenario described above, if the parent company demonstrates compliance with the corporate pool standards for its subsidiary, the parent company may include its joint venture refinery in its corporate pool. However, if the parent company's subsidiary individually demonstrates compliance with the corporate pool average standards for its refineries, rather than the parent company demonstrating compliance for the subsidiary's refineries, then the subsidiary may only include in its pool a refinery or refineries owned by a joint venture to which the subsidiary itself is a partner. Such subsidiary may not include refineries owned by a joint venture to which the parent, but not the subsidiary, is a partner.

3. **Question:** The sulfur regulations allow refiners and importers to include ethanol added downstream in compliance calculations. The denaturants used in ethanol usually contain some amount of sulfur. Should the sulfur content of the denatured ethanol be included in calculations for purposes of compliance and credit generation?

**Answer:** Section 80.205(c) provides that a refiner or importer may include oxygenates added downstream from the refinery or import facility when calculating the refinery's or importer's annual average sulfur content, provided that the refiner or importer complies with the requirements under § 80.69(a) or § 80.101(d)(4)(ii) of the RFG/anti-dumping regulations, as applicable, for including such oxygenates. These sections of the RFG/anti-dumping regulations do not require refiners to include in compliance calculations the properties of the denaturant added to the ethanol downstream. Therefore, for purposes of demonstrating compliance with the sulfur standards or generating credits or allotments, the sulfur content of the denaturant in ethanol is not required to be included in the calculations under § 80.205. As indicated in the preamble to the final sulfur rule, where ethanol is included in the refinery compliance calculations, refiners assume this ethanol has no sulfur content. *See* 65 FR at 6800. Section 80.385(e) prohibits any party from blending into gasoline denatured ethanol with a sulfur content higher than 30 ppm. In amounts of 30 ppm or below, we believe that the sulfur in the denatured ethanol will not have a measurable impact on the sulfur level of the gasoline to which the ethanol is added.

4. **Question:** In the preamble to the final sulfur rule, EPA stated that an oxygenate blender who uses blendstock as a denaturant, instead of gasoline, is a refiner under the regulations. Does this mean that such an oxygenate blender is subject to all of the requirements for refiners under the sulfur rule?

**Answer:** The preamble to the final rule states that an oxygenate blender who uses blendstock instead of finished gasoline as a denaturant for ethanol is a "refiner" under the regulations. As such, the oxygenate blender is required to demonstrate compliance with the sulfur standards for the denatured ethanol added to the gasoline. 65 FR at 6800.

The preamble discussion cited above reflects a concern that a blendstock used as a denaturant could have a much higher sulfur content than finished gasoline, which is subject to the 30 ppm average sulfur standard. The final rule, however, contains a provision which prohibits an

ethanol blender from blending into gasoline denatured ethanol with a sulfur content higher than 30 ppm. § 80.385(e). This prohibition applies regardless of whether the denaturant used is finished gasoline or a blendstock.

We believe that the prohibition in § 80.385(e) adequately addresses the concern raised in the preamble regarding the use of a blendstock as a denaturant rather than finished gasoline. As a result, we do not believe there is a necessity for such oxygenate blenders to demonstrate compliance with the sulfur standards for the blendstock used as a denaturant, or to fulfill the requirements for refiners under the regulations. Therefore, we are withdrawing the preamble discussion as guidance for interpreting the regulations on this particular issue. However, all oxygenate blenders, regardless of the type of denaturant used, are subject to the requirements and prohibitions applicable to downstream parties, as well as the prohibition specified in § 80.385(e). *See* § 80.212. If a blendstock used as a denaturant causes a violation, the oxygenate blender would be liable for that violation. Oxygenate blenders, therefore, may wish to obtain information regarding the sulfur content of any blendstock used as a denaturant to avoid liability under § 80.385(e).

#### SMALL REFINERS

1. **Question:** The sulfur regulations require small refiners to include in their small refiner application the crude oil capacity of their refineries as reported to the Energy Information Administration (EIA). Foreign refiners, however, do not report to the EIA. What should these refiners include in their applications regarding crude oil capacity?

**Answer:** As indicated in the question, § 80.235(c)(2) provides that a refiner's small refiner status application must contain the total corporate crude oil capacity of each refinery as reported to the EIA. Since foreign refiners do not report their crude oil capacity to the EIA, the small refiner status application for a foreign refiner must contain the total crude capacity of each refinery as documented by a comparable reputable source, such as a professional publication or trade journal. We intend to clarify this in a future rulemaking.

2. **Question:** Section 80.250 provides the equations to be used in determining small refiner sulfur baselines and baseline volumes. This section, however, does not address whether oxygenates added downstream from the refinery are to be included in the calculations. Section 80.295 requires such oxygenates to be included in calculations for a baseline for early credit generation. Should oxygenates added downstream also be included in calculations for a small refinery baseline?

**Answer:** We intended the provisions of § 80.250 for determining a baseline under the small refiner program to be consistent with the provisions of § 80.295, since both baselines are intended to represent current sulfur levels, and they are based on the same calculation. As indicated in the question, under § 80.295, any refiner who included oxygenates blended



downstream in compliance calculations for 1997-1998 under the RFG and anti-dumping regulations must include this oxygenate in the calculations for sulfur content under § 80.295 for purposes of establishing a baseline for early credit generation. Consistent with this requirement, small refiners who included oxygenates blended downstream in compliance calculations for 1997-1998 under the RFG/anti-dumping regulations must include this oxygenate in the baseline calculations under § 80.250. We intend to clarify this requirement in a future rulemaking.

## ALLOTMENTS AND CREDITS

**1. Question:** In 2003, a refiner has the ability to generate Type A allotments if his individual refinery sulfur content is 60 ppm or lower. For a refinery with a baseline under 120 ppm, a 0.8 factor is applied to calculate allotments. For 2003, can the refiner specify a portion of the eligible sulfur reduction as credits instead of allotments? If so, would the calculation for the credit portion be the same as the credit calculation in 2000-2002; i.e., without the 0.8 factor used to calculate allotments?

**Answer:** The regulations provide refiners, in 2003, with the option to generate credits in accordance with the provisions of § 80.305, or generate allotments (and credits where applicable) in accordance with the provisions of § 80.275. *See* § 80.275(a). The regulations do not allow a refiner to generate some credits using the provisions of § 80.305 and some allotments/credits using the provisions of § 80.275 in 2003. Under § 80.305, credits are generated based on the total volume of gasoline produced at the refinery during the annual averaging period. Similarly, under § 80.275, allotments are generated based on the total volume of gasoline produced at the refinery during the annual averaging period. These sections do not provide for credits or allotments to be calculated based on a portion of a refinery's gasoline production.

**2. Question:** Foreign refiners who have an approved anti-dumping refinery baseline under § 80.94, like domestic refiners, are required to fulfill the requirements for applying for a sulfur baseline under § 80.245 or § 80.290, including the submission of 1997-1998 batch information as reported to EPA under the RFG/anti-dumping regulations. However, in some cases, a foreign refiner may have an approved baseline under § 80.94, but this baseline may not have been in effect until after 1998. As a result, such foreign refiner would not have submitted batch reports to EPA in 1997-1998. How should this foreign refiner comply with the requirements of § 80.245 or § 80.290?

**Answer:** To establish a sulfur baseline for purposes of the small refinery standards or generating early sulfur credits, the regulations require refiners to submit to EPA sulfur baseline data for 1997-1998, including information on each batch of gasoline produced and the batch number assigned to the batch for purposes of compliance with the RFG/anti-dumping regulations. *See* §§ 80.245(a) and 80.290(c). The data in the refiner's sulfur baseline submission may then be verified by EPA by comparing it with the data submitted to EPA in the refiner's 1997-1998 annual reports. Foreign refiners who do not have an approved individual baseline for

purposes of compliance with the anti-dumping regulations are required to follow the procedures under §§ 80.91 through 80.93 (provisions for establishing an individual anti-dumping baseline) to establish the volume and sulfur content of gasoline that was produced at the foreign refinery and imported into the United States during 1997-1998, for purposes of calculating a sulfur baseline under § 80.250 or § 80.295. *See* §§ 80.250(b), 80.290(d) and 80.410(b)(1). This is in addition to the other baseline establishment requirements under § 80.245 and § 80.290.

However, as indicated in the question, a foreign refiner who has an approved individual anti-dumping baseline, but one that did not apply for purposes of compliance with the anti-dumping regulations until after 1998, also would not have submitted annual reports to EPA in 1997-1998. In such a case, we believe that the foreign refinery's baseline may be based on the gasoline produced at the foreign refinery and imported into the United States during the period of time that the refinery was subject to its individual anti-dumping baseline. As a result, the foreign refiner should submit in the sulfur baseline application under § 80.245 or § 80.290 information and data for the gasoline produced at the refinery and imported into the United States during each annual averaging period that the refinery was subject to its individual anti-dumping baseline. EPA will evaluate all of the data submitted by the foreign refiner in determining the appropriate sulfur baseline for the refinery. Where we conclude that the data submitted reasonably reflects current sulfur levels, the refinery's baseline will be determined based on the average sulfur content of gasoline produced by the foreign refinery and imported into the United States during the most recent annual averaging period in which the foreign refinery was subject to its individual anti-dumping baseline. We intend to clarify this requirement in a future rulemaking.

4. **Question:** Accumulated Type A allotments generated in 2003 and 2004 would only have 50% of their value as allotments if they are consumed in 2005. Type A allotments can be converted to credits in 2005 and 2006. What value do the Type A allotments that were generated in 2003 and 2004 have as credits in 2005 and 2006? Can they be converted on a 1 to 1 basis, or do they have to be converted to 2005 allotments first (at 50% value) and then be converted to credits?

**Answer:** The preamble to the final rule states that allotments generated in 2003 or 2004 which are carried over to 2005 are discounted by 50%. The discounted allotments may then be used to achieve compliance with the corporate pool average standard in 2005 or converted into credits for compliance with the refinery average standard in 2005 (or beyond). As a result, where allotments generated in 2003 or 2004 are carried over to 2005 and then converted into credits, such credits would retain only 50% of the value of the original allotments generated in 2003 or 2004. However, if the allotments are converted into credits before being carried over to 2005, such credits would not be discounted when they are carried over, and, therefore, would retain 100% of the value of the original allotments. An allotment that is converted into a credit before being carried over to 2005 may be reconverted into an allotment for use in achieving compliance with the corporate pool average in 2005, but the allotment will be discounted 50%. *See* 65 FR at 6765. We intend to clarify these requirements in § 80.275 in a future rulemaking.

**5. Question:** Under the GPA provisions, a refiner's annual average GPA standard is the lesser of 150 ppm, the refinery's 1997-1998 sulfur baseline plus 30 ppm, or the lowest average sulfur content for any year in which the refinery generated early credits or allotments plus 30 ppm. Section 80.310 provides an equation for determining credit generation in 2004 and thereafter based on the refinery's sulfur standard. However, this section does not include the term "plus 30 ppm" in the GPA standard. Is this an error in § 80.310?

**Answer:** The term "plus 30 ppm" in the GPA standard was inadvertently omitted in § 80.310. Under § 80.310, for GPA gasoline, the  $S_{std}$  value in the equation should be the applicable refinery or importer standard for GPA gasoline established under § 80.216(a). Under § 80.216(a), the refinery or importer annual average sulfur standard for gasoline produced or imported for use in the GPA is the lesser of 150 ppm or the refinery's or importer's 1997-1998 average sulfur level, calculated in accordance with § 80.295, plus 30 ppm (§ 80.216(a)(1)) ; or, in the case of any refinery whose actual annual sulfur average decreases to a level lower than the refinery's annual average sulfur standard for GPA gasoline established under § 80.216(a)(1) during the period 2000 through 2003, the lowest average sulfur content for any year in which the refinery generated allotments or credits, plus 30 ppm, not to exceed 150 ppm (§ 80.216(a)(2)). We intend to correct this in a future rulemaking.

**6. Question:** The regulations at § 80.205 require the annual refinery or importer average or corporate pool average calculations to be conducted to two decimal places. However, the regulations at §§ 80.250 and 80.295 for calculating a sulfur baseline for purposes of determining small refinery standards and generating early credits do not have a similar requirement. Should the sulfur baseline submissions be rounded to the nearest ppm or conducted to two decimal places as required for calculating the annual average sulfur level under § 80.205?

**Answer:** We intended the provisions for calculating a sulfur baseline under §§ 80.250 and 80.295 to be consistent with the provisions for calculating the refinery or importer annual average sulfur level under § 80.205, including the requirement to conduct the calculations to two decimal places. As a result, we intend to modify §§ 80.250 and 80.295 in a future rulemaking to require baseline calculations to be conducted to two decimal places. Note, however, that credits under the sulfur program are in "ppm-gallons." § 80.305(c). We interpret § 80.305(c) to require credits to be rounded to the nearest ppm-gallon. Therefore, in calculating sulfur credits using the equation in § 80.305(a), the refiner should use the refinery's sulfur baseline value established under § 80.250 or § 80.295, conducted to two decimal places, and the refinery's actual annual average sulfur level calculated under § 80.205, conducted to two decimal places. Once the sulfur credits are calculated, the refiner should round the credits to the nearest ppm-gallon.

## SAMPLING AND TESTING

**1. Question:** In a recent Questions and Answers document, EPA indicated that, under the sulfur regulations at § 80.330, a refiner who produces conventional gasoline using in-line

blending equipment cannot participate in the early credit program unless the refiner obtains an in-line blending waiver under § 80.65(f)(4) to address sulfur sampling and analysis. See “Gasoline Sulfur Rule Questions and Answers,” EPA420-F-00-018 (May 2000) (Sampling and Testing Question 6). We believe this requirement is unjustified, since there are no downstream sulfur standards prior to January 1, 2004, and early credits are based on an annual sulfur average. Will EPA consider modifying the regulations to allow in-line blenders to generate early credits without obtaining an in-line blending waiver?

**Answer:** The current regulations at § 80.330(a)(1) require a refiner to collect a representative sample from each batch of gasoline produced and test each sample to determine its sulfur content prior to the gasoline leaving the refinery. The requirements in § 80.330(a)(1) apply beginning on January 1, 2004, or January 1 of the first year of credit or allotment generation, whichever is earlier. Section 80.330(a)(4) provides an exception to the requirement in § 80.330(a)(1) that gasoline be tested prior to leaving the refinery for parties who use computer-controlled in-line blending equipment and are unable to obtain test results prior to the gasoline leaving the refinery. Such refiners may meet the testing requirement under the terms of an in-line blending waiver granted under § 80.65(f)(4). Therefore, as discussed in the May 2000 Questions and Answers document, under the current sulfur regulations, refiners who produce gasoline using in-line blending equipment and who are unable to obtain test results prior to the gasoline leaving the refinery must have an in-line blending waiver under § 80.65(f)(4) in order to generate early credits in 2000-2003. This also applies to early allotment generation in 2003. Under the RFG regulations, refiners who produce RFG by in-line blending are required to obtain a waiver under § 80.65(f)(4). However, refiners who produce conventional gasoline by in-line blending are not required to obtain a waiver under § 80.65(f)(4). The current sulfur regulations would require these conventional gasoline refiners to apply for and receive a waiver under § 80.65(f)(4) in order to generate early credits or allotments.

Upon consideration of the comments we have received, we believe that the requirement under § 80.330(a)(4) to obtain an in-blending waiver, in regard to both RFG and conventional gasoline, is unnecessary for purposes of generating early credits or allotments. The waiver requirement was intended to ensure that batches produced using in-line blending equipment have known sulfur levels at the time of shipment. Since early credit or allotment generation is based on the refinery’s annual average sulfur level, credits and allotments are not calculated until the end of the annual averaging period, after the test results for all batches produced during the averaging period are obtained. Therefore, it is unnecessary for refiners to obtain test data prior to the gasoline leaving the refinery. Moreover, as indicated in the question, there are no per-gallon sulfur standards prior to January 1, 2004, which would necessitate knowing the sulfur content of the gasoline prior to its leaving the refinery. As a result, we intend to modify § 80.330 in a future rulemaking to provide that refiners, including those who produce gasoline using computer-controlled in-line blending equipment, are not required to obtain test results prior to the gasoline leaving the refinery in order to generate early credits in 2000-2003 or early allotments in 2003. In-line blenders, therefore, would not be required to obtain an in-line blending waiver under § 80.65(f)(4) for purposes of generating early credits or early allotments. However, this does not

relieve refiners from meeting the requirements under § 80.330 to obtain a representative sample of each batch of gasoline produced. In the case of in-line blenders who do not obtain a sample of each batch from a storage tank, the sampling method must conform to the methodology set forth in ASTM D 4177-95, as required in § 80.330(b)(2). In the case of in-line blenders who do obtain their batch samples from a storage tank, the sampling for such samples must conform to the appropriate methodology specified in § 80.330(b)(1). We also intend to clarify the requirements for in-line blenders beginning in January 2004 in a future rulemaking.

**2. Question:** Do the provisions of § 80.330(a)(3) apply to refiners who produce conventional gasoline using in-line blending equipment?

**Answer:** Yes. Section 80.330(a)(3) provides that, prior to January 1, 2004, for purposes of meeting the sampling and testing requirements of the sulfur rule, any refiner may, prior to analysis, combine samples of gasoline from more than one batch of gasoline or blendstock and treat such composite sample as one batch of gasoline or blendstock pursuant to the requirements of § 80.101(i)(2). The provisions of § 80.330(a)(3) apply to all refiners of conventional gasoline, including those who produce gasoline using in-line blending equipment.

**3. Question:** Are refiners of conventional gasoline who composite samples under § 80.330(a)(3) required to use the sampling methods in § 80.330(b)?

**Answer:** Yes. Section 80.330(b), which requires the use of the sampling methods provided in §§ 80.330(b)(1) and (b)(2), applies to all samples taken for purposes of complying with the provisions of § 80.330(a), including § 80.330(a)(3).

**4. Question:** Section 80.335 describes the sample retention requirements for refiners or importers. However, this section does not indicate how reformulated gasoline blendstock for oxygenate blending (RBOB) samples should be considered. Should a refiner retain neat RBOB samples or handblend samples (RBOB blended with ethanol)?

**Answer:** Section 80.69(a)(2) of the RFG regulations requires refiners to conduct testing on RBOB by adding the specified type and amount of oxygenate to a representative sample of the RBOB and determining the properties and characteristics of the resulting gasoline (i.e., a “handblend”). Section 80.335(a) requires refiners to collect a representative portion of each sample analyzed and retain sample portions as specified in § 80.335(a)(2).

We interpret § 80.335(a) to require refiners to retain samples of the RBOB batches and samples of the ethanol used to conduct the handblend testing, rather than samples of the actual handblend. Refiners, therefore, are not required to create additional volumes of the handblend samples for purposes of fulfilling the sample retention requirements of § 80.335. We believe that having the RBOB and accompanying ethanol samples available to EPA will allow EPA to determine whether the refiner’s handblend testing was properly conducted. We intend to clarify this sampling and retention requirement for RBOB in a future rulemaking.