

**FIX UPS TO THE**  
**15% RATE-OF-PROGRESS SIP**  
For Dallas/Fort Worth, El Paso, Beaumont Port Arthur  
and Houston/Galveston Ozone Nonattainment Area

**APPENDIX 7-D**

96109-SIP-AI, 96110-SIP-AI, 96111-SIP-AI,  
96112-SIP-AI, 96113-SIP-AI

JULY 24, 1996

CALCULATION OF EMISSION REDUCTIONS  
DUE TO REASONABLE AVAILABLE CONTROL TECHNOLOGY (RACT) CATCHUPS

BACKGROUND

Section 182(A)(2)(a) of the Federal Clean Air Act (FCAA) Amendments of 1990 required the adoption of volatile organic compound (VOC) RACT rules corrections ("fixups") by May 15, 1991. A *deficiency is any rule (or portion of a rule) that is less stringent than the United States Environmental Protection Agency's (EPA) interpretation of RACT in pre-1990 FCAA Amendments guidance.* Areas that were treated as rural nonattainment areas prior to the FCAA Amendments of 1990 (such as Beaumont/Port Arthur) may treat Group III Control Techniques Guidelines (CTGs) as part of the RACT "catchups" for which credit may be taken as part of the required 15% VOC reduction by 1996.

The FCAA Amendments require that the emissions inventory (EI) be adjusted for RACT fixups, and reductions resulting from RACT fixups may not be counted towards the mandated 15% VOC reduction. All emission reductions associated with RACT catchups are creditable towards the mandated 15% VOC reduction. This document explains the TACB's calculation of the emission reductions associated with RACT catchups. (Note: all values of Control Efficiency (CE), Rule Penetration (RP), and Rule Effectiveness (RE) represent data for 1996).

POINT SOURCES

**GROUP I CTGS:**

**A. SURFACE COATING OF CANS.**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. Full reduction credit is taken for any facility in this source category in these eight counties.

The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" for any point source with emissions less than 550 #/day in these four counties since the previous exemption level exempted these sources from the control requirements. No reduction credit is taken for any point source with emissions greater than 550 #/day in these four counties.

The emissions from this category were taken completely from point source category 84. Full catchup emissions were reported in Fort Bend and Montgomery counties. There were no partial catchup emissions reported. No rule effectiveness improvements were taken except for Harris county.

$$CE_{96} = 55.2\% \text{ -- (D)}$$

$$RE_{96} = 99\% \text{ -- (E)}$$

1B. SURFACE COATING OF METAL COILS.

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. Full reduction credit is taken for any facility in this source category in these eight counties.

The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" for any point source with emissions less than 550 #/day in these four counties since the previous exemption level exempted these sources from the control requirements. No reduction credit is taken for any point source with emissions greater than 550 #/day in these four counties.

The emissions from this category were taken completely from point source category 85. Full catchup emissions were reported in Montgomery County. There were no partial catchup emissions reported. No rule effectiveness improvements were taken except for Harris county.

$$CE_{96} = 55.9\% \text{ -- (D)}$$

$$RE_{96} = 75\% \text{ -- (H)}$$

C. SURFACE COATING OF PAPER PRODUCTS.

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. Full reduction credit is taken for any facility in this source category in these eight counties.

The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" for any point source with emissions less than 550 #/day in these four counties since the previous exemption level exempted these sources from the control requirements. No reduction credit is taken for any point source with emissions greater than 550 #/day in these four counties.

The emissions from this category were taken completely from point source category 89. There were no catchup emissions reported. No rule effectiveness improvements were taken.

$$CE_{96} = 55.6\% \text{ -- (G)}$$

$$RE_{96} = 85\% \text{ -- (N)}$$

D. SURFACE COATING OF FABRICS.

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. Full reduction credit is taken for any facility in this source category in these eight counties.

The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" for any point source with emissions less than 550 #/day in these four counties since the previous exemption level exempted these sources from the control requirements. No reduction credit is taken for any point source with emissions greater than 550 #/day in these four counties.

The emissions from this category were taken completely from point source category 80. There were no catchup emissions reported. No rule effectiveness improvements were taken.

$$CE_{96} = 55.6\% \text{ -- (G)}$$

$$RE_{96} = 85\% \text{ -- (N)}$$

E. SURFACE COATING OF AUTOMOBILES & LIGHT-DUTY TRUCKS.

This rule applies specifically to General Motors in Tarrant County. Any other facilities classified in this source category are regulated under the miscellaneous metal parts and products coating category, and reductions will be calculated accordingly.

The miscellaneous metal parts and products rule (§115.421(a)(9)) was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. Full reduction credit is taken for any facility in this source category in these eight counties.

The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" for any point source with emissions less than 550 #/day in these four counties since the previous exemption level exempted these sources from the control requirements. No reduction credit is taken for any point source with emissions greater than 550 #/day in these four counties.

The emissions from this category were taken completely from point source category 77. There were no catchup emissions reported. No rule effectiveness improvements were taken except for Harris county.

$$CE_{96} = 55.6\% \text{ -- (G)}$$

$$RE_{96} = 75\% \text{ -- (H)}$$

F. SURFACE COATING OF METAL FURNITURE.

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. Full reduction credit is taken for any facility in this source category in these eight counties.

The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" for any point source with emissions less than 550 #/day in these four counties since the previous exemption level exempted these sources from the control requirements. No reduction credit is taken for any point source with emissions greater than 550 #/day in these four counties.

The emissions from this category were taken completely from point source category 86. There were no catchup emissions reported. No rule effectiveness improvements were taken.

$$CE_{96} = 55.6\% \text{ -- (G)}$$

$$RE_{96} = 75\% \text{ -- (H)}$$

G. SURFACE COATING OF MAGNET WIRE.

The commission has not adopted a RACT rule for this source category. A search of the EI database for all sources with actual or allowable VOC emissions of  $\geq 25$  tons per year (TPY) in the 16 currently-designated ozone nonattainment counties which comprise the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston Areas revealed no sources listed under the applicable SIC and SCC codes. Therefore, there do not appear to be any magnet wire surface coating facilities for which RACT rules are required in Texas, and consequently there are no emissions reductions associated with RACT catchups for this source category.

H. SURFACE COATING OF LARGE APPLIANCES.

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. Full reduction credit is taken for any facility in this source category in these eight counties.

*The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" for any point source with emissions less than 550 #/day in these four counties since the previous exemption level exempted these sources from the control requirements. No reduction credit is taken for any point source with emissions greater than 550 #/day in these four counties.*

The emissions from this category were taken completely from point source category 75. Full catch were reported in Liberty County. There were no partial catchup emissions reported. No rule effectiveness improvements were taken.

$$CE_{96} = 55.6\% \text{ -- (G)}$$

$$RE_{96} = 75\% \text{ -- (H)}$$

I. BULK GASOLINE PLANTS.

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. There were no emissions in the 1990 base year inventory attributable to bulk gasoline plants reported under SIC code 5171. A search was conducted for all SIC code sources with throughput less than 20,000 gallons/day.

$$CE_{96} = 77\% \text{ -- (K)}$$

$$RE_{96} = 85\% \text{ -- (N)}$$

J. FIXED ROOF STORAGE TANKS.

This rule was added as a "full catchup" to Chambers, Fort Bend, Liberty, and Waller Counties.

The emissions from this category are taken completely from point source categories 27 and 50. It was assumed that there were few emissions from compounds less than 1.5 psia and from tanks smaller than 1000 gallons. Therefore the full emissions as reported in the categories were used. Full catchup emissions were reported in Chambers, Fort Bend, and Waller counties.

In Hardin county, controls were added for storage of crude oil and condensate. Since the emission reduction resulting from this RACT catchup is likely to be negligible, no calculation of reductions were made.

Rule effectiveness improvements were taken for Brazoria, Galveston, Harris and Montgomery counties.

$$CE_{96} = 61.9\% \text{ -- (S)}$$

$$RE_{96} = 85\% \text{ -- (N)}$$

#### K. PETROLEUM REFINERIES.

##### 1. VACUUM PRODUCING SYSTEMS.

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. The emissions from this category are taken completely from point source category 47. Full catchup emissions were reported in Chambers county.

Rule effectiveness improvements were taken for Brazoria, Galveston, Jefferson, and Harris counties.

$$CE_{96} = 100\% \text{ -- (L)}$$

$$RE_{96} = 85\% \text{ -- (N)}$$

##### 2. VOC/WATER SEPARATORS.

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Liberty, and Waller Counties. The emissions were reported under SCC codes 30600503 and 30600504. No full catchup emissions were reported. Rule effectiveness improvements were calculated for Brazoria, Galveston, Jefferson, Orange, and Harris counties.

$$CE_{96} = 95\% \text{ -- (L)}$$

$$RE_{96} = 65\% \text{ -- (E)}$$

For Brazoria, Dallas, El Paso, Galveston, Hardin, Harris, Jefferson, Montgomery, Orange, and Tarrant Counties, the vapor pressure applicability level was reduced from 1.5 psia to 0.5 psia, and the exemptions for <200 gallons/day throughput and for crude oil and condensate were eliminated. Creditable emission reductions resulting from these RACT catchups were not calculated due to difficulties in extracting the necessary information from the database.

##### 3. PROCESS UNIT TURNAROUNDS.

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. There is no Emissions Inventory category for this source.

$$CE_{96} = 98\% \text{ -- (L)}$$

$$RE_{96} = 95\% \text{ -- (E)}$$

#### L. CUTBACK ASPHALT.

This source category is discussed in the Area Source section.

**M. GASOLINE TERMINALS.**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. Full reduction credit is taken for any gasoline terminal in these eight counties.

Also, the applicability level in Harris County was reduced from 500 kgal/day to 20 kgal/day. A search of the EI database revealed that only one of the gasoline terminals in Harris County (Exxon; HG0235K) is permitted. This facility is also an NSPS source and is already controlled. Full reduction credit is taken for all other gasoline terminals in Harris County which had previously been exempt from RACT requirements.

$CE_{96} = 93.3\% \text{ -- (M)}$

$RE_{96} = 90\% \text{ -- (O)}$

In addition, the emission specification was reduced from 0.67 #/kgal (86.6% control efficiency) to 0.33 #/kgal (93.3% control efficiency) in Brazoria, El Paso, Galveston, Harris, Jefferson, and Orange Counties. An emission reduction credit for this difference was taken for any non-NSPS/non-permitted gasoline terminal in Brazoria, El Paso, Galveston, Jefferson, and Orange Counties, and likewise an emission reduction credit was taken for any non-NSPS/non-permitted gasoline terminal in Harris County with a throughput greater than 500 kgal/day (in order to avoid double-counting in Harris County).

The emissions associated with this category were taken from SCC codes: 40400152, 40400153, 40400154, 40400250, 40400254, 40600131, 40600136, 40600144, and 40600147. Bulk terminals report under SIC code 5171. A search was conducted of the emissions inventory for all SIC code sources with a throughput greater than 20,000 gallons/day. This is the definition for a bulk gasoline terminal. The emissions inventory was searched for sources which reported as bulk terminals and had emissions reported under those SCC codes. Full catch up emissions were reported in Chambers and Liberty Counties.

A search was then conducted of the emissions inventory, identifying all of the bulk gasoline terminals in Harris county with a throughput greater than 500,000 gallons/day. In the 1990 EI only HG0235K and HG0565J were identified. The emissions from these were added to the emissions from bulk gasoline terminals in Brazoria and Galveston counties and credit was taken for the reduction in emission specification.

The emissions from the remaining bulk gasoline terminals in Harris County, those with throughput less than 500,000 gallons/day, were than quantified for full catchup reductions.

All emissions from these sources were accounted for so no additional rule effectiveness credits were taken.

**N. STAGE I.**

This source category is discussed in the Area Source section.

O. SOLVENT METAL CLEANING (DEGREASING).

Emissions from degreasing are normally considered as area sources but may also be reported as point source emissions. This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. Full reduction credit is taken for any facility in this source category in these counties.

The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Jefferson, Orange, and Galveston, Counties, thus achieving the same effect as a "full catchup" for any point source with emissions less than 550 #/day in these four counties since the previous exemption level exempted these sources from the control requirements. No reduction credit is taken for any point source with emissions greater than 550 #/day in these counties.

The emissions from this category are taken completely from point source category 31. Full catchup emissions were reported in Chambers, Fort Bend, and Waller counties. Partial catchup emissions were reported in Brazoria, Jefferson, Orange, and Galveston counties.

Rule effectiveness improvements were taken for Harris county only.

$$CE_{96} = 55.7\% \text{ -- (D)}$$

$$RE_{96} = 75\% \text{ -- (E)}$$

**GROUP II CTGS:**

P. SURFACE COATING OF MISCELLANEOUS METAL PARTS.

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. Full reduction credit is taken for any facility in this source category in these eight counties.

The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" for any point source with emissions less than 550 #/day in these four counties since the previous exemption level exempted these sources from the control requirements. No reduction credit is taken for any point source with emissions greater than 550 #/day in these four counties.

The emissions from this category are taken completely from point source categories 88 and 91. Full catchup emissions were reported in Fort Bend and Montgomery counties for source category 88 and in Fort Bend county for source category 91. Partial catchup emissions were reported in Brazoria and Jefferson counties in source category 88. There were no partial catchup emissions reported in source category 91.

Rule effectiveness improvements were taken for Harris county only.

$$CE_{96} = 55.6\% \text{ -- (D)}$$

$$RE_{96} = 75\% \text{ -- (E)}$$

Q. SURFACE COATING OF FLAT WOOD PANELING.

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. Full reduction credit is taken for any facility in this source category in these eight counties.

The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" for any point source with emissions less than 550 #/day in these four counties since the previous exemption level exempted these sources from the control requirements. No reduction credit is taken for any point source with emissions greater than 550 #/day in these four counties.

The emissions from this category are taken completely from point source category 81. There were no full or partial catchup emissions reported.

There were no rule effectiveness improvements taken.

$CE_{96} = 55.6\% \text{ -- (G)}$

$RE_{96} = 85\% \text{ -- (N)}$

R. GRAPHIC ARTS - ROTOGRAVURE AND FLEXOGRAPHIC PRINTING.

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. Full reduction credit is taken for any facility with emissions >25 TPY in Chambers, Fort Bend, Liberty, Montgomery, and Waller Counties. Full reduction credit is taken for any facility category with emissions >50 TPY in Collin, Denton, and Hardin Counties.

The applicability level in Brazoria, Galveston, and Harris Counties was reduced from 100 TPY exemption to 25 TPY. Full reduction credit is taken for any facility with emissions in this range in these three counties.

The applicability level in El Paso, Jefferson, and Orange Counties was reduced from 100 TPY exemption to 50 TPY. Full reduction credit could be taken for any facility with emissions in this range in these three counties; however, a search of the database revealed no point sources with emissions in this range in these three counties.

A search of the EI database revealed two flexographic sources and one rotogravure source. All three are in Harris county and only the rotogravure source (HG1245A) is less than 100 TPY and greater than 25 TPY. Full catchup credit was taken for all emissions from that account. These emissions were reported in category 63.

One source, a flexographic source (HG0294R), was greater than 100 TPY. Rule effectiveness improvement was taken for all emissions from this account. These emissions were reported in categories 7, 29, 62 and 63.

$CE_{96} = 75\%$  for publication rotogravure -- (U)  
 $CE_{96} = 65\%$  for packaging rotogravure -- (U)  
 $CE_{96} = 60\%$  for flexographic -- (U)  
 $RE_{96} = 75\%$  -- (E)

S. PETROLEUM REFINERY EQUIPMENT LEAKS (FUGITIVE EMISSIONS).

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. Full reduction credit is taken for any facility in this source category in these eight counties.

The emissions from this category are taken completely from point source category 40. Full catchup emissions were reported in Chambers, Hardin, Fort Bend, Liberty, Montgomery, and Waller counties.

Rule effectiveness improvements were taken for Brazoria, Galveston, Jefferson, Orange, and Harris counties.

$CE_{96} = 75\%$  -- (Q)  
 $RE_{96} = 95\%$  -- (E)

T. EXTERNAL FLOATING ROOF TANKS.

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Liberty, and Waller Counties. Full reduction credit is taken for any facility in this source category in these six counties.

In Hardin and Montgomery Counties, controls were added for storage of crude oil and condensate. Since the emission reduction resulting from this RACT catchup is likely to be negligible, no calculation of reductions was made.

The emissions from this category are taken completely from point source categories 28 and 51. It was assumed that there were few emissions from compounds less than 1.5 psia and from tanks smaller than 25,000 gallons. Therefore the full emissions as reported in the categories were used. Full catchup emissions were reported in Chambers, and Fort Bend counties. Rule effectiveness improvements were taken for Brazoria, Galveston, Hardin, Jefferson, Orange, and Harris counties.

$CE_{96} = 61.9\%$  -- (S)  
 $RE_{96} = 90\%$  -- (E)

U. DRY CLEANING - PERCHLOROETHYLENE.

This category has been subtracted from the EI since EPA has reclassified perchloroethylene as a non-VOC.

V. LEAKS FROM GASOLINE TANK TRUCKS.

This source category is discussed in the Area Source section.

**W. SYNTHESIZED PHARMACEUTICAL PRODUCTS.**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. Full reduction credit could be taken for any facility in this source category in these eight counties.

$CE_{96} = 90\% \text{ -- (S)}$

$RE_{96} = 85\% \text{ -- (N)}$

The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties. However, a search of the database revealed only negligible emissions in this source category in these four counties. Since the emission reduction resulting from this RACT catchup is negligible, no calculation of reductions was made.

**X. PNEUMATIC RUBBER TIRES.**

The commission has not adopted a RACT rule for this source category because a search of the EI database for all sources with actual or allowable VOC emissions of  $\geq 25$  TPY in the 16 currently-designated ozone nonattainment counties which comprise the Beaumont/Port Arthur, Dallas/Fort Worth, ELP, and Houston/Galveston Areas revealed no point sources listed under the appropriate SIC code. Therefore, there do not appear to be any pneumatic rubber tire manufacturing facilities for which RACT rules are required in Texas, so there are no emissions reductions associated with RACT catchups for this source category.

**GROUP III CTGS:**

**Y. LARGE PETROLEUM DRY CLEANERS.**

The commission has not adopted a RACT rule for this source category because a search of the EI database for all sources with actual or allowable VOC emissions of  $\geq 25$  TPY in the 16 currently-designated ozone nonattainment counties which comprise the Beaumont/Port Arthur, Dallas/Fort Worth, ELP, and Houston/Galveston Areas revealed only one source listed under the appropriate SIC code. The subject facility is *Fishburn's Cleaning and Laundry, TACB Account No. DB-1109-R, Dallas County*. This is a grandfathered transfer-type dry cleaners which uses Stoddard solvent. The VOC emissions are less than 100 TPY, so Fishburn's is not defined as a major source. Therefore, there do not appear to be any large petroleum dry cleaners facilities for which RACT rules are required in Texas, so there are no emissions reductions associated with RACT catchups for this source category.

**Z. HIGH-DENSITY POLYETHYLENE, POLYPROPYLENE, AND POLYSTYRENE RESINS.**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Jefferson, Liberty, Montgomery, Orange, and Waller Counties. Full reduction credit is taken for any facility in this source category in these ten counties.

The emissions from this category are taken from point source category 7. The following SCC codes were used:

Polyethylene: 30101807 - 30101811, 30101860 - 30101866  
Polypropylene: 30101802, 30102414  
Polystyrene: 30101817 - 30101821

Full catchup emissions were reported in Chambers, Jefferson, and Orange counties for the Polyethylene category. There were no catchup emissions reported for the other categories.

Rule effectiveness improvements were reported in Brazoria and Harris counties for the Polyethylene category, in Brazoria and Harris counties for the Polypropylene category, and in Brazoria, Galveston and Harris counties for the Polystyrene categories.

$CE_{96} = 98\% \text{ -- (T)}$

$RE_{96} = 85\% \text{ -- (P)}$

**AA. NATURAL GAS PROCESSING PLANT EQUIPMENT LEAKS (FUGITIVE EMISSIONS).**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Jefferson, Liberty, Montgomery, Orange, and Waller Counties. *Full reduction credit is taken for any facility in this source category in these ten counties.*

The emissions from this category are taken completely from point source category 24. Full catchup emissions were reported in Chambers, Hardin, Jefferson, Orange, Fort Bend, Liberty, Montgomery, and Waller counties.

Rule effectiveness improvements were taken in Brazoria, Galveston and Harris counties.

$CE_{96} = 75\% \text{ -- (Q)}$

$RE_{96} = 95\% \text{ -- (E)}$

**AB. SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY (SOCMI) EQUIPMENT LEAKS (FUGITIVE EMISSIONS).**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Jefferson, Liberty, Montgomery, Orange, and Waller Counties. *Full reduction credit is taken for any facility in this source category in these ten counties.*

The emissions from this category are taken completely from point source category 5. A search of this category revealed emissions from SIC codes 2843, 2869, 2899 and 4619. *Emissions from SIC codes 2843 were subtracted from the total emissions as they are not subject to the control requirements of this rule. Full catchup emissions were reported in Chambers, Jefferson, Orange, Fort Bend, and Liberty Counties.*

A search of this category revealed emissions from SIC codes 2812, 2819, 2821, 2822, 2833, 2865, 2869, 2879, 2895, 2899, 2911, 3088, 3731, 4226, 5169, and 8731. SCC codes for emission points reported under 2911 revealed they are properly categorized as SOCMI fugitives. Emissions from SIC codes 2812, 2819, 2822, 2833, 2895, 2899, 3088, 3731, 4226, 5169, and 8731 were subtracted from the total emissions as they are not subject to the control requirements of this rule. Full catchup emissions were reported in Brazoria, Galveston, and Harris Counties.

$$CE_{96} = 75\% \text{ -- (Q)}$$

$$RE_{96} = 95\% \text{ -- (E)}$$

**AC. AIR OXIDATION SOCMI.**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Jefferson, Liberty, Montgomery, Orange, and Waller Counties. Full reduction credit is taken for any facility in this source category in these ten counties. There were no full catchup emissions reported, except for one account in Jefferson county with negligible emissions.

Rule effectiveness improvements were taken in Brazoria, and Harris counties.

$$CE_{96} = 98\% \text{ -- (T)}$$

$$RE_{96} = 85\% \text{ -- (P)}$$

**AREA SOURCES**

**GROUP I CTGS:**

**A. SURFACE COATING OF CANS.**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" since the previous exemption level exempted all area sources. The area source category is identified as Metal Containers. Emissions were reported in Brazoria and Montgomery Counties. Rule effectiveness improvements were calculated in Harris county.

$$CE_{96} = 55.2\% \text{ -- (D)}$$

$$RP_{96} = 75\% \text{ -- (F)}$$

$$RE_{96} = 99\% \text{ -- (E)}$$

**B. SURFACE COATING OF METAL COILS.**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" since the previous exemption level exempted all area sources. The area source category is identified as Sheet, Strip & Coil. No full catchup emissions were reported. Rule effectiveness improvements were calculated in Harris county.

$$CE_{96} = 55.9\% \text{ -- (D)}$$

$$RP_{96} = 75\% \text{ -- (F)}$$

$$RE_{96} = 75\% \text{ -- (H)}$$

**C. SURFACE COATING OF PAPER PRODUCTS.**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a

"full catchup" since the previous exemption level exempted all area sources. There is no area source category for this rule.

$$CE_{96} = 55.6\% \text{ -- (G)}$$

$$RP_{96} = 75\% \text{ -- (F)}$$

$$RE_{96} = 85\% \text{ -- (N)}$$

**D. SURFACE COATING OF FABRICS.**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" since the previous exemption level exempted all area sources. There is no area source category for this rule.

$$CE_{96} = 55.6\% \text{ -- (G)}$$

$$RP_{96} = 75\% \text{ -- (F)}$$

$$RE_{96} = 85\% \text{ -- (N)}$$

**E. SURFACE COATING OF AUTOMOBILES & LIGHT-DUTY TRUCKS.**

This rule applies specifically to General Motors in Tarrant County. Any other facilities classified in this source category are regulated under the miscellaneous metal parts and products coating category, and reductions will be calculated accordingly.

The miscellaneous metal parts and products rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. Full reduction credit is taken for any facility in this source category in these eight counties.

The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" for any point source with emissions less than 550 #/day in these four counties since the previous exemption level exempted these sources from the control requirements. No reduction credit is taken for any point source with emissions greater than 550 #/day in these four counties. The area source category is identified as Automobiles (New). No emissions were reported for this category.

$$CE_{96} = 55.6\% \text{ -- (G)}$$

$$RP_{96} = 75\% \text{ -- (F)}$$

$$RE_{96} = 75\% \text{ -- (H)}$$

**F. SURFACE COATING OF METAL FURNITURE.**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" since the previous exemption level exempted all area sources. There is no area source category for this rule.

CE<sub>96</sub> = 55.6% -- (G)

RP<sub>96</sub> = 75% -- (F)

RE<sub>96</sub> = 75% -- (H)

**G. SURFACE COATING OF MAGNET WIRE.**

This source category is discussed in the Point Source section.

**H. SURFACE COATING OF LARGE APPLIANCES.**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" since the previous exemption level exempted all area sources. There is no emissions reported for this category.

CE<sub>96</sub> = 55.6% -- (G)

RP<sub>96</sub> = 75% -- (F)

RE<sub>96</sub> = 75% -- (H)

**I. BULK GASOLINE PLANTS.**

This source category is discussed in the Point Source section.

**J. FIXED ROOF STORAGE TANKS.**

This source category is discussed in the Point Source section.

**K. PETROLEUM REFINERIES.**

**1. VACUUM PRODUCING SYSTEMS.**

This source category is discussed in the Point Source section.

**2. VOC/WATER SEPARATORS.**

This source category is discussed in the Point Source section.

**3. PROCESS UNIT TURNAROUNDS.**

This source category is discussed in the Point Source section.

**L. CUTBACK ASPHALT.**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. (Note: The annual limitation on cutback use was reduced from 8% to 7% in Brazoria, El Paso, Galveston, Jefferson, and Orange Counties; however, this reduction credit will not be quantified). The area source category is identified as Cutback Asphalt. Full catchup emissions were reported in Fort Bend, Liberty, Montgomery, and Waller counties. Rule effectiveness improvements were calculated in Brazoria, Galveston, Jefferson, Orange, and Harris Counties.

CE<sub>96</sub> = 65% -- (J)

RP<sub>96</sub> = 80% -- Best estimate

RE<sub>96</sub> = 85% -- (N)

M. **GASOLINE TERMINALS.**

This source category is discussed in the Point Source section.

N. **STAGE I.**

Stage I requirements were added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. The area source category is identified as Service Stations - Tank Truck Unloading. Full catchup emissions were reported in Chambers, Fort Bend, Liberty, Montgomery, and Waller Counties. Rule effectiveness improvements were calculated in Brazoria, Jefferson, Orange, Galveston, and Harris counties.

$CE_{96} = 95\%$  -- (CTG)

$RP_{96} = 95\%$  -- Same as Stage II since both have essentially the same exemption level.

$RE_{96} = 85\%$  -- (N)

O. **SOLVENT METAL CLEANING (DEGREASING).**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" since the previous exemption level exempted all area sources. The area source category is identified as Surface Cleaning. Full catchup emissions were reported in Brazoria, Chambers, Fort Bend, Galveston, Liberty, Montgomery, and Waller counties. Rule effectiveness improvements were calculated for Harris county.

$CE_{96} = 55.7\%$  -- (D)

$RP_{96} = 100\%$  -- No exemption in rule

$RE_{96} = 75\%$  -- (E)

**GROUP II CTGS:**

P. **SURFACE COATING OF MISCELLANEOUS METAL PARTS.**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" since the previous exemption level exempted all area sources. The area source categories are identified as Electrical Insulation, Other Transportation Equipment, and Machinery & Equipment. There were no emissions reported for Electrical Insulation. Brazoria, Orange, Galveston and Montgomery counties reported emissions in Other Transportation Equipment. Brazoria, Galveston, Jefferson, Orange, Liberty, and Waller counties reported emissions in Machinery & Equipment. Harris county also reported emissions in Machinery & Equipment and rule effectiveness improvements were calculated for that.

$CE_{96} = 55.6\%$  -- (D)

$RP_{96} = 75\%$  -- (F)

$RE_{96} = 75\%$  -- (E)

**Q. SURFACE COATING OF FLAT WOOD PANELING.**

This rule was added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. The exemption was reduced from 550 #/day to 15 #/day in Brazoria, Galveston, Jefferson, and Orange Counties, thus achieving the same effect as a "full catchup" since the previous exemption level exempted all area sources. The area source category is identified as Factory Finished Wood. Full catchup emissions were reported in Liberty county. Rule effectiveness improvements were calculated in Harris county.

$$CE_{96} = 55.6\% \text{ -- (G)}$$

$$RP_{96} = 75\% \text{ -- (F)}$$

$$RE_{96} = 85\% \text{ -- (N)}$$

**R. GRAPHIC ARTS - ROTOGRAVURE AND FLEXOGRAPHIC PRINTING.**

This source category is discussed in the Point Source section.

**S. PETROLEUM REFINERY EQUIPMENT LEAKS (FUGITIVE EMISSIONS).**

This source category is discussed in the Point Source section.

**T. EXTERNAL FLOATING ROOF TANKS.**

This source category is discussed in the Point Source section.

**U. DRY CLEANING - PERCHLOROETHYLENE.**

This category has been subtracted from the EI since EPA has reclassified perchloroethylene as a non-VOC.

**V. LEAKS FROM GASOLINE TANK TRUCKS.**

Gasoline tank truck leak test requirements were added as a "full catchup" to Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties. The area source category is identified as Service Stations - Tank Trucks in Transit. Full catchup emissions were reported in Chambers, Fort Bend, Liberty, Montgomery, and Waller counties. Rule effectiveness improvements were calculated in Brazoria, Galveston, Jefferson, Orange, and Harris counties.

$$CE_{96} = 95\% \text{ -- (R)}$$

$$RP_{96} = 100\% \text{ -- No exemption in rule}$$

$$RE_{96} = 85\% \text{ -- (N)}$$

**W. SYNTHESIZED PHARMACEUTICAL PRODUCTS.**

This source category is discussed in the Point Source section.

**X. PNEUMATIC RUBBER TIRES.**

This source category is discussed in the Point Source section.

**GROUP III CTGS:**

- Y. LARGE PETROLEUM DRY CLEANERS.  
This source category is discussed in the Point Source section.
- Z. HIGH-DENSITY POLYETHYLENE, POLYPROPYLENE, AND POLYSTYRENE RESINS.  
This source category is discussed in the Point Source section.
- AA. NATURAL GAS PROCESSING PLANT EQUIPMENT LEAKS (FUGITIVE EMISSIONS).  
This source category is discussed in the Point Source section.
- AB. SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY (SOCMI) EQUIPMENT LEAKS (FUGITIVE EMISSIONS).  
This source category is discussed in the Point Source section.
- AC. AIR OXIDATION SOCMI.  
This source category is discussed in the Point Source section.

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**FOOTNOTES:**

- A. Dallas, Tarrant, ELP, and Harris Counties only.
- B. Dallas and Tarrant Counties only.
- C. Dallas, Tarrant, ELP, and Harris Counties only.
- D. As given in Appendix AF. Control Efficiencies for Stationary Source Controls in Post-1982 SIP Areas, Supplemental Appendices For The Post-1982 State Implementation Plan for Dallas and Tarrant Counties.
- E. As determined in TACB Rule Effectiveness Development, 2/8/93.
- F. Exemption level is 15#/day ( $\approx 2.7$  TPY maximum based upon 365 days/year operation). Sources down to 10 TPY were inventoried as point sources, so the rule is estimated to apply to the top 75% of the area source emissions for this category.
- G. A specific factor for this category was not given in Appendix AF. Control Efficiencies for Stationary Source Controls in Post-1982 SIP Areas, Supplemental Appendices For The Post-1982 State Implementation Plan for Dallas and Tarrant Counties, so the factor for miscellaneous metal parts and products was used for this category since it is the most similar category.
- H. A specific factor for this category was not given in TACB Rule Effectiveness Development, 2/8/93, so the factor for miscellaneous metal parts and products was used for this category since it is the most similar category.

- I. According to Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone, Volume I: General Guidance for Stationary Sources, the emission factor for Commercial/Consumer Solvent Use is 6.3 #/capita/year, of which 0.6 #/capita/year (or 9.5%) is due to windshield washer fluid. Traditional windshield washer fluid is 30% VOC by weight, while the commission rule restricts VOC content to 8%. The control efficiency for the windshield washer fluid portion of the Commercial/Consumer Solvent Use category is therefore  $(30 - 8) / 30 = 73\%$ .
- J. According to Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone, Volume I: General Guidance for Stationary Sources, cutback asphalt is 30% VOC by weight. The commission rule restricts VOC content to a maximum of 12% for asphalt emulsions which are used as substitutes for cutback asphalt. The control efficiency is therefore  $(35 - 12) / 35 = 65\%$ .
- K. Control of Volatile Organic Emissions from Bulk Gasoline Plants, (CTG), page 3-7.
- L. Control of Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds, (CTG), page 4-3.
- M. Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals, (CTG), page 1-2. The uncontrolled emission factor is 600 mg/l, while the emission limitation in §115.211(a)(1)(B) is 40 mg/l, so the control efficiency is  $(600 - 40) / 600 = 93.3\%$ .
- N. EPA default of 80%, plus 5% added to account for the 100% regional staff increase projected by 1996.
- O. As determined in TACB Rule Effectiveness Development, 2/8/93. The average rule effectiveness for flares (95%) and carbon adsorption units (85%) was used.
- P. As determined in TACB Rule Effectiveness Development, 2/8/93. The average rule effectiveness for flares (95%), vapor collection to fuel gas (95%), regenerative incineration (85%), and condensor units (65%) was used.
- Q. As determined by the TACB Permits Program (equivalent to 28M fugitive emissions monitoring program).
- R. As determined by the TACB Permits Program.
- S. As determined based upon Appendices to Ozone Control Strategy, Harris County, Texas, December 3, 1982, Appendix Z - Harris County Emissions Inventory and Texas State Implementation Plan, Ozone Control Strategy, Harris County, December 3, 1982, Table 11 - VOC Emission Reduction for Harris County from Application of Controls in Revised Regulation V.
- T. Per §115.121(a)(3) & §115.122(a)(2).
- U. Per §115.432(a)(1)(C).