

Technical Justification for Screening Background Concentrations for SO₂

December 20, 2010

In order to be authorized, the owner/operator of a facility must demonstrate that emissions from the proposed project will not cause or contribute to a NAAQS violation. This demonstration is performed by considering the impact from the proposed sources and other background sources as applicable. This demonstration can be accomplished by explicitly modeling all emission sources. If accounting for project and background emission sources by dispersion modeling is not possible or practicable, a representative monitored concentration value can be added to the predicted modeled concentration to account for background sources.

Obtaining the modeling parameters for emission sources other than the project and determining which concentration values are representative can often be labor intensive. In many cases, a conservative estimate of the impact of background sources provides sufficient information and a margin of safety to make the demonstration of compliance with the NAAQS. If the conservative estimate is overly conservative to make the demonstration, then a more refined and detailed analysis can be conducted.

In order to streamline the permit review process and maintain an adequate margin of safety, the Air Permits Division has developed screening background concentrations that would account for the impact of background sources with an adequate margin of safety. The screening background values are to be used in lieu of explicitly modeling sources other than the project sources and adding a representative background to the predicted model concentration. The screening background concentrations cannot be used if current representative monitoring values in an area are higher than the screening background values. It is the applicant's responsibility to be aware of the most current monitoring data available whether the data are from regulatory monitors, non-regulatory monitors, or site specific monitors.

The screening background concentration values are based on ambient air monitoring for the years 2007-2009, emissions inventory data (2005 NEI , 2008 TCEQ EIQ, and 2007-2009 Acid Raid Database), and permit allowable emission rates. Comparison of emissions and sources types are made between areas where there are monitors to areas where there are none. Specifically for SO₂, nearly all emissions are due to industrial stationary point sources.

For counties without an ambient SO₂ monitor, without a major source of SO₂, and without a nearby major source of SO₂ in an adjacent county, a default value of 50 µg/m³ was assigned as a screening background concentration. This value is based on emissions data and monitoring data from urban counties, such as Harris, Bexar, Dallas, and El Paso and rural counties like Kaufman, Ellis, and Navarro. Harris and Bexar counties have among the highest SO₂ emissions in the state with over 30,000 tpy in actual emissions. Dallas County had actual emissions less than 30,000 tpy but more than 10,000 tpy. El Paso County has less than 5,000 tpy. Harris and Bexar SO₂ emissions are dominated by major stationary sources. Dallas and El Paso Counties have predominant source type of minor (area) stationary sources for SO₂. The monitored concentrations (< 30 µg/m³) in Dallas and El Paso Counties are significantly lower than in Harris and Bexar Counties (> 60 µg/m³).

Harris and Bexar counties have multiple SO₂ monitors. With more than one monitor, the influence of major sources at different distances can potentially be discerned. In Harris County, there are numerous major sources of SO₂ making it difficult to discern to what extent each source is contributing to the monitored value. Bexar County has one dominant SO₂ source with an allowable emission limit of approximately 13,500 lb/hr.

Monitoring data from Bexar County show that the higher reported SO₂ concentrations are when the winds are from the general direction of that one major source. The design value at the monitor approximately 15 kilometers (km) (about 9 miles) from the major source is about 50 µg/m³. During the monitoring period when the concentrations were highest, actual emissions from the major source were comparable to the allowable emission limit.

Data from SO₂ monitors in Dallas, Kaufman, and McLennan Counties support the use of the default value of 50 µg/m³. Though Dallas County had nearly twice the annual SO₂ emissions for 2005 as Ellis County, the monitored concentrations of SO₂ are much lower. For Dallas County in 2005, 87% of SO₂ emissions were due to area (minor) sources. For Ellis County during the same period, 88% of SO₂ emissions were due to major sources. The design value for Dallas County is less than 30 µg/m³ while the design value for Ellis County is greater than 150 µg/m³. Monitors in Kaufman and McLennan Counties have design values less than 50 µg/m³. There are no major sources of SO₂ in Kaufman County and at two major sources of SO₂ in McLennan County.

Data from SO₂ monitors in Navarro and Bexar Counties support use of the 80 µg/m³ when major sources of SO₂ are nearby (less than 20 km) with allowable emissions of approximately 800 lb/hr (< 1,000 lb/hr). The Navarro County SO₂ monitor reports less than 80 µg/m³ with the presence of one major source of SO₂ with an allowable emission rate of approximately 1,000 lb/hr 15 km (9 miles) away and another of over 30,000 lb/hr 40 km (25 miles) away. One Bexar County SO₂ monitor reports slightly over 80 µg/m³ with a major source 5 km (3 miles) away with an allowable emission rate of approximately 13,500 lb/hr. Another Bexar county SO₂ monitor 15 km (9 miles) away from the same major source reports less than 80 µg/m³. With no major sources with an allowable rate greater than 1,000 lb/hr nearby, a screening background value of 80 µg/m³ is reasonable.

Data from SO₂ monitors in Galveston and Bexar Counties support use of the 150 µg/m³ when major sources of SO₂ are nearby with allowable emissions of greater than 1,000 lb/hr and less than 5,000 lb/hr. The Galveston County monitor reports less than 150 µg/m³ with two major sources of SO₂ approximately 1 km (0.6 miles) away with combined allowable emission rates of approximately 5,000 lb/hr. One Bexar County SO₂ monitor reports less than 150 µg/m³ with a major source 5 km (3 miles) away with an allowable emission rate of approximately 13,500 lb/hr. With no major sources with an allowable rate greater than 5,000 lb/hr nearby, a screening background value of 150 µg/m³ is reasonable.

For counties that have or are adjacent to counties that have a major source of SO₂ with an allowable emission rate of greater than 5,000 lb/hr, in the absence of monitoring data, the screening background values cannot be used. For projects in these areas, a more refined modeling analysis explicitly accounting for all SO₂ emissions will be necessary.

Based on a general analysis of the data, screening background concentration values have been assigned to each county using the following criteria. The screening background concentrations cannot be used if current representative monitoring values are higher than the screening background values. It is the applicant's responsibility to be aware of the most current monitoring data available whether the data are from regulatory monitors, non-regulatory monitors, or site specific monitors.

- No major sites (with potential to emit (PTE) ≥ 100 tons/year (tpy)) of SO₂ in the county, 50 $\mu\text{g}/\text{m}^3$ (default value) unless other information, such as monitoring data or a major site in an adjacent county, would justify a higher value;
- Major sites of SO₂ with short-term allowable rates less than 1,000 pounds/hour (lb/hr), 80 $\mu\text{g}/\text{m}^3$ unless other information, such as monitoring data or a major site in an adjacent county, would justify a higher or lower value;
- Major sites of SO₂ with short-term allowable rates greater than 1,000 lb/hr but less than 5,000 lb/hr, 150 $\mu\text{g}/\text{m}^3$ unless other information, such as monitoring data or a major site in an adjacent county, would justify a higher or lower value; and
- Major sites of SO₂ with short-term allowable rates greater than 5,000 lb/hr, screening background values cannot be used unless other information, such as monitoring data, would justify a value of 150 $\mu\text{g}/\text{m}^3$ or less.

A detailed analysis for counties with greater than default values for screening background concentrations is contained below. The counties are grouped by TCEQ regions. The analysis includes actual emissions estimates for 2005 for all counties in the region, emission estimates for 2008 of major sources of SO₂, and allowable maximum hourly emission rates of major sources of SO₂. These data are current as of the date of publication this document and may change in the future. It is the applicant's responsibility to be aware of the most current data available.

Though it is possible, a minor source of SO₂ could have a maximum hourly emission rate of greater than 1,000 lb/hr or 5,000 lb/hr. However, to have an hourly allowable rate this high and have a PTE less than 100 tpy would require limited hours of operation (less than 100 hours). Given the restrictions which would have to be on a minor source, it is unlikely such a minor exists. If the applicant is aware of such a situation, the screening background value for that area may not be valid.

Region 1

County	Pollutant	2005 NEI tpy
Hutchinson	SO2	27,055
Potter	SO2	23,998
Gray	SO2	5,540
Moore	SO2	4,494
Hansford	SO2	1,157
Randall	SO2	421
Parmer	SO2	337
Deaf Smith	SO2	201
Dallam	SO2	134
Hemphill	SO2	134
Carson	SO2	123
Castro	SO2	99
Hartley	SO2	97
Roberts	SO2	90
Hall	SO2	74
Sherman	SO2	72
Swisher	SO2	69
Lipscomb	SO2	69
Donley	SO2	67
Oldham	SO2	62
Armstrong	SO2	61
Wheeler	SO2	55
Collingsworth	SO2	54
Childress	SO2	50
Ochiltree	SO2	47
Briscoe	SO2	20

Hutchinson County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
BORGER CARBON BLACK PLANT	RN100209659	4,285	8780	4,500
SID RICHARDSON CARBON BORGER PLANT	RN100222413	7,992	1867A	4,000
BORGER REFINERY	RN102495884	591	80799	12,200
ROCK CREEK GAS PLANT	RN100216613	1,913	3131A	9,200

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Potter County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
HARRINGTON STATION POWER PLANT	RN100224849	19,134	1388	4,300
			5129	4,200

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Gray County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
CELANESE CHEMICALS PAMPA PLANT	RN101996395	4,446	5083A	3,100
CABOT CORPORATION DEVELOPMENT AND MANUFACTURING CENTER	RN100210582	50	42233	1,000
CABOT PAMPA PLANT	RN100221761	1,032	40088	1,500

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Moore County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
CONTINENTAL CARBON CO. SUNRAY PLANT	RN102321577	1,481	9449	2,100
DIAMOND SHAMROCK MCKEE PLANT	RN100210517	569	9708	1,600

Maximum allowable hourly emission rates for all sites in the county are greater than 1,000 lb/hr but less than 5,000 lb/hr, therefore use a screening background of 150 µg/m³.

Carson County – Adjacent to Hutchinson, Potter, and Gray counties. Sites with more than 1000 lb/hr within 10 km of county line. Since projects in Hutchinson, Potter, and Gray counties cannot use screening background values, projects in Carson County cannot use screening background values.

Parmer County – Adjacent to Lamb County and 12 km from a source in Lamb County with allowable emissions greater than 5,000 lb/hr. Since projects Lamb County cannot use screening background values, projects in Parmer County cannot use screening background values.

Region 2

County	Pollutant	2005 NEI tpy
Lamb	SO2	20,512
Hockley	SO2	1,295
Lubbock	SO2	1,228
Hale	SO2	492
Yoakum	SO2	235
Lynn	SO2	97
Terry	SO2	78
Bailey	SO2	70
Floyd	SO2	69
Crosby	SO2	65
Garza	SO2	46
Cochran	SO2	42
Dickens	SO2	17
Motley	SO2	17
King	SO2	6

Lamb County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
TOLK STATION POWER PLANT	RN100224534	20,176	6029	6,100

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Hockley County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
SLAUGHTER GASOLINE PLANT	RN100212786	889	18406	800

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Bailey County – Adjacent to Lamb County and 3 km from a source in Lamb County with allowable emissions greater than 5,000 lb/hr. Since projects in Lamb County cannot use screening background values, projects in Bailey County cannot use screening background values.

Region 3

County	Pollutant	2005 NEI tpy
Wilbarger	SO2	4,529
Wichita	SO2	1,565
Taylor	SO2	680
Brown	SO2	459
Nolan	SO2	340
Runnels	SO2	272
Eastland	SO2	212
Scurry	SO2	188
Young	SO2	179
Montague	SO2	125
Callahan	SO2	92
Stephens	SO2	90
Jones	SO2	88
Clay	SO2	85
Hardeman	SO2	77
Haskell	SO2	71
Comanche	SO2	70
Mitchell	SO2	63
Fisher	SO2	62
Coleman	SO2	53
Foard	SO2	34
Knox	SO2	34
Archer	SO2	34
Kent	SO2	31
Jack	SO2	29
Shackelford	SO2	27
Baylor	SO2	26
Stonewall	SO2	15
Cottle	SO2	15
Throckmorton	SO2	13

Wilbarger County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
OKLAUNION POWER STATION	RN101062255	4567	9015	3,400

Maximum allowable hourly emission rates for all sites in the county are greater than 1,000 lb/hr but less than 5,000 lb/hr, therefore use a screening background of 150 µg/m³.

Wichita County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
PPG INDUSTRIES WORKS NO 4	RN102522950	573	898	200

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Nolan County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
BUZZI UNICHEM USA	RN100220847	64	5918B	175

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Region 4

County	Pollutant	2005 NEI tpy
Dallas	SO2	20,862
Tarrant	SO2	11,761
Ellis	SO2	11,545
Collin	SO2	4,519
Navarro	SO2	4,319
Denton	SO2	2,557
Grayson	SO2	1,262
Johnson	SO2	968
Kaufman	SO2	731
Parker	SO2	726
Cooke	SO2	715
Wise	SO2	471
Hunt	SO2	446
Palo Pinto	SO2	422
Rockwall	SO2	286
Erath	SO2	236
Fannin	SO2	203
Hood	SO2	121
Somervell	SO2	35

Dallas County – Many minor sources are well distributed throughout the county. Monitored values are approximately 30 µg/m³. Monitor is located in downtown Dallas. Adjacent to Ellis County and within 2 km from sources in Ellis County with allowable emissions greater than 5,000 lb/hr. Since projects in Ellis County cannot use screening background values, projects in Dallas County cannot use screening background values.

Tarrant County – Many source that are well distributed throughout the county. Adjacent to Ellis County and within 10 km from sources in Ellis County with allowable emissions greater than 5,000 lb/hr. Since projects in Ellis County has cannot use screening background values, projects in Tarrant County cannot use screening background values.

Ellis County–

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
TXI OPERATIONS	RN100217199	1,721	1360A	3,100
ASH GROVE TEXAS LP	RN100225978	4,776	16731	1,700
			1	3,400
HOLCIM TEXAS LIMITED PARTNERSHIP	RN100219286	2,706	8996	5,200

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Collin County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
EXIDE FRISCO BATTERY RECYCLING PLANT	RN100218643	641	1147A	500

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Navarro County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
TXI - STREETMAN PLANT	RN100211283	3,552	5337	800

Monitored design value for 2007-2009 is 62 µg/m³ approximately 12 km from site with 800 lb/hr. Adjacent to Freestone and Limestone counties and within 20 km from source in Freestone County with allowable emissions greater than 5,000 lb/hr. Since projects in Freestone and Limestone counties cannot use screening background values, projects in Navarro County cannot use screening background values.

Denton County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
ACME BRICK DENTON PLANT	RN100210046	306	56094	120

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Kaufman County – No major sources of SO₂ in the county. Monitored design value for 2007-2009 is 37 µg/m³. Kaufman County is assigned 50 µg/m³.

Region 5

County	Pollutant	2005 NEI tpy
Titus	SO2	108,727
Rusk	SO2	77,197
Harrison	SO2	13,357
Hopkins	SO2	3,173
Smith	SO2	2,503
Cass	SO2	1,881
Gregg	SO2	1,505
Henderson	SO2	1,075
Bowie	SO2	926
Lamar	SO2	636
Cherokee	SO2	567
Anderson	SO2	384
Morris	SO2	360
Panola	SO2	287
Upshur	SO2	273
Van Zandt	SO2	205
Red River	SO2	204
Marion	SO2	185
Camp	SO2	171
Wood	SO2	145
Franklin	SO2	53
Rains	SO2	32
Delta	SO2	24

Titus County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
MONTICELLO STEAM ELECTRIC STATION	RN102285921	68,579	2401	9,800
			45432	19,000
AEP - WELSH POWER PLANT	RN100213370	25,849	4381	17,700

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Rusk County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
MARTIN LAKE STEAM ELECTRIC STATION	RN102583093	78,715	933	31,000
BORAL BRICKS HENDERSON PLANT	RN100640978	163	21012	110

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Harrison County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
AEP PIRKEY POWER PLANT	RN100214287	3,078	6269	8,200
MARSHALL PLANT	RN102609724	809	56552	100

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Smith County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
DELEK TYLER REFINERY	RN100222512	184	80756	1,100
			4902	190
			4028	41

Maximum allowable hourly emission rates for all sites in the county are greater than 1,000 lb/hr but less than 5,000 lb/hr, therefore use a screening background of 150 µg/m³.

Cass County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
BRYANS MILL GAS PLANT	RN102166964	779	582	730
TEXARKANA MILL	RN100543115	78	2975	2,800

Maximum allowable hourly emission rates for all sites in the county are greater than 1,000 lb/hr but less than 5,000 lb/hr, therefore use a screening background of 150 µg/m³.

Gregg County – Monitored design value for 2007-2009 is 175 µg/m³. Adjacent to Rusk and Harrison counties and within 20 km from source in Rusk County with allowable emissions greater than 5,000 lb/hr. Since projects in Rusk and Harrison counties cannot use screening background values, projects in Gregg County cannot use screening background values.

Henderson County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
EUSTACE GAS PLANT	RN102176377	650	6051	350

Adjacent to Freestone County and within 20 km from source in Freestone County with allowable emissions greater than 5,000 lb/hr. Since projects in Freestone cannot use screening background values, projects in Henderson County cannot use screening background values.

Bowie County – Adjacent to Cass County site with emissions greater than 1,000 lb/hr. Since Cass County has a screening background of 150 µg/m³, Bowie County is assigned a value of 150 µg/m³.

Anderson County – Adjacent to Freestone County and within 10 km from source in Freestone County with allowable emissions greater than 5,000 lb/hr. Since projects in Freestone cannot use screening background values, projects in Anderson County cannot use screening background values.

Morris County – Adjacent to Titus County and within 5 km from source in Titus County with allowable emissions greater than 5,000 lb/hr. Since projects in Titus cannot use screening background values, projects in Morris County cannot use screening background values.

Panola County – Adjacent to Rusk County and within 1 km from a source in Rusk County with allowable emissions greater than 5,000 lb/hr. Since projects in Rusk cannot use screening background values, projects in Panola County cannot use screening background values.

Camp County – Adjacent to Titus County and within 1 km from a source in Titus County with allowable emissions greater than 5,000 lb/hr. Since projects in Titus cannot use screening background values, projects in Camp County cannot use screening background values.

Franklin County – Adjacent to Titus County and within 5 km from a source in Titus County with allowable emissions greater than 5,000 lb/hr. Since projects in Titus cannot use screening background values, projects in Franklin County cannot use screening background values.

Region 6

County	Pollutant	2005 NEI tpy
El Paso	SO2	4,550
Hudspeth	SO2	92
Culberson	SO2	64
Jeff Davis	SO2	61
Brewster	SO2	54
Presidio	SO2	44

El Paso County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
WESTERN REFINING EL PASO ALL SITES	RN100213016	12	18897	160

Many minor sources are well distributed throughout the county. Multiple monitors with the highest monitored design value is 36 µg/m³. Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Region 7

County	Pollutant	2005 NEI tpy
Howard	SO2	13,080
Reeves	SO2	4,533
Pecos	SO2	3,150
Ector	SO2	2,107
Andrews	SO2	1,137
Midland	SO2	881
Winkler	SO2	442
Gaines	SO2	398
Loving	SO2	351
Ward	SO2	310
Dawson	SO2	203
Martin	SO2	193
Crane	SO2	139
Upton	SO2	65
Terrell	SO2	51
Glasscock	SO2	23
Borden	SO2	13

Howard County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
SID RICHARDSON CARBON BIG SPRING FACILITY	RN100226026	8,123	6580	2,700
ALON USA BIG SPRING REFINERY	RN100250869	570	49154	670
			50209	50

Maximum allowable hourly emission rates for all sites in the county are greater than 1,000 lb/hr but less than 5,000 lb/hr, therefore use a screening background of 150 $\mu\text{g}/\text{m}^3$.

Ector County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
GOLDSMITH GAS PLANT	RN100222330	1,407	676A	480
ODESSA CEMENT PLANT	RN100213305	225	5296	87
			8410	75

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 $\mu\text{g}/\text{m}^3$.

Midland County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
SPRABERRY GAS PLANT	RN100224823	277	17719	370
PEGASUS GAS PLANT	RN102229572	118	22065	27

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 $\mu\text{g}/\text{m}^3$.

Region 8

County	Pollutant	2005 NEI tpy
Tom Green	SO2	618
Crockett	SO2	433
Coke	SO2	345
McCulloch	SO2	82
Kimble	SO2	81
Sutton	SO2	60
Mason	SO2	50
Schleicher	SO2	49
Irion	SO2	26
Concho	SO2	26
Menard	SO2	24
Reagan	SO2	18
Sterling	SO2	11

Crockett County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
ENCONTRADO TREATER	RN100219278	158	18370	57

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Coke County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
JAMESON GAS PLANT	RN101246478	8	9941	130

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Region 9

County	Pollutant	2005 NEI tpy
Freestone	SO2	92,059
Milam	SO2	82,686
Limestone	SO2	17,937
Grimes	SO2	12,064
Robertson	SO2	5,823
McLennan	SO2	3,070
Bell	SO2	1,633
Brazos	SO2	841

County	Pollutant	2005 NEI tpy
Bosque	SO2	738
Leon	SO2	534
Washington	SO2	409
Hill	SO2	315
Coryell	SO2	161
Falls	SO2	126
Lampasas	SO2	116
Burleson	SO2	114
San Saba	SO2	73
Madison	SO2	56
Hamilton	SO2	52
Mills	SO2	36

Freestone County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
BIG BROWN STEAM ELECTRIC STATION	RN101198059	61,845		30,000

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Milam County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
SANDOW STEAM ELECTRIC STATION	RN102147881	20,784	4980	6800
ALCOA ROCKDALE OPERATIONS	RN100221472	2,145	4476	120
			56300	870

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Limestone County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
LIMESTONE ELECTRIC GENERATING STATION	RN100542927	21,027	8576	18,000
			79188	2,400

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Grimes County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
GIBBONS CREEK STEAM ELECTRIC STATION	RN100214550	12,567	5699	6,100

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Robertson County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
TWIN OAKS	RN100226570	4,455	17294	1,200
			17295	1,200

Maximum allowable hourly emission rates for all sites in the county are greater than 1,000 lb/hr but less than 5,000 lb/hr, therefore use a screening background of 150 µg/m³.

McLennan County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
OWENS-BROCKWAY GLASS CONTAINER	RN100216969	456	2718	150
LEHIGH CEMENT WACO PLANT	RN100218254	561	9399	650

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Brazos County – Adjacent to Grimes County and within 10 km from a source in Grimes County with allowable emissions greater than 5,000 lb/hr. Since projects in Grimes cannot use screening background values, projects in Brazos County cannot use screening background values.

Bosque County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
CLIFTON LIME PLANT	RN100219856	468	4335A	175

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Leon County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
NUCOR STEEL-TEXAS	RN100211093	186	53581	422

Adjacent to Limestone and Freestone counties and within 1 km from a source in Limestone County with allowable emissions greater than 5,000 lb/hr. Since projects in Limestone County cannot use screening background values, projects in Leon County cannot use screening background values

Falls County – Adjacent to Robertson County and within 10 km of site with emissions greater than 1,000 lb/hr. Since Robertson County has a screening background of 150 $\mu\text{g}/\text{m}^3$, Falls County is assigned a value of 150 $\mu\text{g}/\text{m}^3$.

Region 10

County	Pollutant	2005 NEI tpy
Jefferson	SO2	25,799
Orange	SO2	6,805
Angelina	SO2	962
Jasper	SO2	699
Nacogdoches	SO2	676
Polk	SO2	452
Shelby	SO2	389
Tyler	SO2	357
Hardin	SO2	321
Newton	SO2	243
Houston	SO2	184
Trinity	SO2	111
San Jacinto	SO2	109
San Augustine	SO2	94
Sabine	SO2	88

Jefferson County – At least one monitor has a design value for 2007-2009 above the NAAQS value of 196 $\mu\text{g}/\text{m}^3$. In areas of the county were monitored values are not representative, the screening background values cannot be used.

Orange County – Adjacent to Jefferson County which as a design value for 2007-2009 above the NAAQS value of 196 $\mu\text{g}/\text{m}^3$, therefore the screening background values cannot be used.

Region 11

County	Pollutant	2005 NEI tpy
Fayette	SO2	29,566
Travis	SO2	7,971
Hays	SO2	1,990
Williamson	SO2	1,577
Caldwell	SO2	825
Bastrop	SO2	324
Burnet	SO2	213
Lee	SO2	103
Llano	SO2	82
Blanco	SO2	63

Fayette County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
LCRA SAM SEYMOUR FAYETTE POWER PROJECT	RN100226844	30,015	51770	19,000

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Travis County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
AUSTIN WHITE LIME COMPANY MCNEIL PLANT & QUARRY	RN100214337	367	6629	150

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Hays County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
TEXAS LEHIGH CEMENT	RN102597846	1,387	3611D	416

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Williamson County – Adjacent to Travis County and with a site on the county line with emissions less than 1,000 lb/hr. Since Travis County has a screening background of 80 µg/m³, Williamson County is assigned a value of 80 µg/m³.

Caldwell County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
LULING GAS PLANT	RN100212018	413	3338A	230

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Bastrop County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
ACME BRICK ELGIN PLANT	RN100225846	108	3505	76
			4090	55
HANSON BRICK ELGIN FACILITY	RN100212034	88	48992	142

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Lee County – Adjacent to Milam County and within 5 km of site with emissions greater than 5,000 lb/hr. Since projects in Milam County cannot use screening background values, projects in Lee County cannot use screening background values.

Region 12

County	Pollutant	2005 NEI tpy
Fort Bend	SO2	57,856
Harris	SO2	53,082
Galveston	SO2	13,866
Brazoria	SO2	11,703
Matagorda	SO2	2,834
Montgomery	SO2	1,497
Chambers	SO2	598
Wharton	SO2	404
Austin	SO2	403
Liberty	SO2	332
Walker	SO2	276
Waller	SO2	275
Colorado	SO2	223

Fort Bend County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
WA PARISH ELECTRIC GENERATING STATION	RN100888312	54,732	2348A	7,900
			2349A	7,900
			5530	6,900
			7704	2,100

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Harris County – Multiple monitors in Harris County. Highest monitor has design value for 2007-2009 of 173 $\mu\text{g}/\text{m}^3$. Nearest major source of SO_2 to monitors is approximately 4 km away. Two other monitors within approximately 5 km have design values for 2007-2009 of approximately 150 $\mu\text{g}/\text{m}^3$. Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Galveston County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
BP PRODUCTS NORTH AMERICA	RN102535077	1,781	47256	3,800
VALERO REFINING TEXAS CITY REFINERY	RN100238385	626	39142	990

Monitored design value for 2007-2009 of 125 $\mu\text{g}/\text{m}^3$. Monitor is less than 1 km from site with emissions greater than 3,000 lb/hr. Maximum allowable hourly emission rates for all sites in the county are greater than 1,000 lb/hr but less than 5,000 lb/hr, therefore use a screening background of 150 $\mu\text{g}/\text{m}^3$.

Brazoria County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
CONOCOPHILLIPS SWEENEY REFINERY	RN101619179	1,280	49140	280
			5920A	1,100

Maximum allowable hourly emission rates for all sites in the county are greater than 1,000 lb/hr but less than 5,000 lb/hr, therefore use a screening background of 150 $\mu\text{g}/\text{m}^3$.

Matagorda County – Adjacent to Brazoria County and within 1 km of a site with emissions greater than 1,000 lb/hr. Since Brazoria County has a screening background of 150 $\mu\text{g}/\text{m}^3$, Matagorda County is assigned a value of 150 $\mu\text{g}/\text{m}^3$.

Colorado County – Adjacent to Fayette County and within 10 km of a site with emissions greater than 5,000 lb/hr. Since projects in Fayette County cannot use screening background values, projects in Colorado County cannot use screening background values.

Region 13

County	Pollutant	2005 NEI tpy
Bexar	SO2	34,014
Atascosa	SO2	13,092
Guadalupe	SO2	1,208
Comal	SO2	1,003
Edwards	SO2	374
Frio	SO2	260
Kerr	SO2	228
Uvalde	SO2	205
Medina	SO2	201
Kendall	SO2	148
Gillespie	SO2	115
Wilson	SO2	80
Bandera	SO2	56
Karnes	SO2	50
Real	SO2	26

Bexar County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
CALAVERAS LAKE PLANT	RN100217975	25,855	1491	5,100
			1492	5,100
			18426	6,700
			70492	2,900
CAPITOL CEMENT PLANT	RN100211507	738	7369	1,100

Monitored design value for 2007-2009 of 96 µg/m³ approximately 5 km from site with more than 19,000 lb/hr. Monitored design value for 2007-2009 of 51 µg/m³ approximately 15 km from site with more than 19,000 lb/hr. In addition, many minor sources are well distributed throughout the county. Bexar County is assigned a value of 150 µg/m³.

Atascosa County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
SAN MIGUEL ELECTRIC PLANT	RN100226539	11,139	4180A	6,000

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Comal County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
NEW BRAUNFELS LIME PLANT	RN100552454	240	7808	170

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Wilson County – Adjacent to Bexar County and within 5 km of a site with emissions greater than 5,000 lb/hr. Since Bexar County has a screening background of 150 µg/m³, Wilson County is assigned a value of 150 µg/m³.

Region 14

County	Pollutant	2005 NEI tpy
Goliad	SO ₂	14,431
Nueces	SO ₂	7,209
Calhoun	SO ₂	2,246
Aransas	SO ₂	1,791
Bee	SO ₂	964
Victoria	SO ₂	600
San Patricio	SO ₂	472
Lavaca	SO ₂	471
Kleberg	SO ₂	464
Live Oak	SO ₂	452
Jackson	SO ₂	296
Gonzales	SO ₂	240
Jim Wells	SO ₂	132
Refugio	SO ₂	85

Goliad County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
COLETO CREEK POWER STATION	RN100226919	17,417	3687	7,600
COLETO CREEK UNIT TWO	RN105487995	NA	83778	670

Maximum allowable hourly emission rates for all sites in the county are greater than 5,000 lb/hr, therefore the screening background values cannot be used.

Nueces County – At least one monitor has a design value for 2007-2009 above the NAAQS value of 196 µg/m³. In areas of the county where monitored values are not representative, the screening background values cannot be used.

Calhoun County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
ES JOSLIN POWER STATION	RN100226638	NA	45586	2,400
SEADRIFT COKE	RN102147055	450	70898	230

Maximum allowable hourly emission rates for all sites in the county are greater than 1,000 lb/hr but less than 5,000 lb/hr, therefore use a screening background of 150 µg/m³.

Aransas County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
ARANSAS PASS CARBON BLACK PLANT	RN101462463	2,185	47319	1,100
			8585	430

Maximum allowable hourly emission rates for all sites in the county are greater than 1,000 lb/hr but less than 5,000 lb/hr, therefore use a screening background of 150 µg/m³.

Bee County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
PAWNEE TREATING PLANT	RN100226505	854	5144A	1,200

Maximum allowable hourly emission rates for all sites in the county are greater than 1,000 lb/hr but less than 5,000 lb/hr, therefore use a screening background of 150 µg/m³.

Victoria County – Adjacent to Goliad County and within 10 km of a site with emissions greater than 5,000 lb/hr. Since projects in Goliad County cannot use screening background values, projects in Victoria County cannot use screening background values.

Lavaca County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
NORTH WORD EDWARDS GAS PROCESSING PLANT	RN101970325	47	9458	50

Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Live Oak County –

Site Name	Site RN	2008 EI tpy	Permit No.	Allowable Rate (lb/hr)
DIAMOND SHAMROCK REFINING VALERO	RN100542802	62	50607	900

Permit allowable emissions are from MSS. Production allowable emission rate is 220 lb/hr. Maximum allowable hourly emission rates for all sites in the county are less than 1,000 lb/hr, therefore use a screening background of 80 µg/m³.

Region 15

County	Pollutant	2005 NEI tpy
Cameron	SO ₂	3,338
Hidalgo	SO ₂	1,818
Willacy	SO ₂	426
Kenedy	SO ₂	180
Starr	SO ₂	81
Brooks	SO ₂	28
Jim Hogg	SO ₂	28

Region 16

County	Pollutant	2005 NEI tpy
McMullen	SO2	1,863
Webb	SO2	402
Maverick	SO2	181
Val Verde	SO2	121
Zapata	SO2	93
Zavala	SO2	67
La Salle	SO2	58
Duval	SO2	36
Dimmit	SO2	34
Kinney	SO2	31

McMullen County –Adjacent to Atascosa County and within 10 km of a site with emissions greater than 5,000 lb/hr. Since projects in Atascosa County cannot use screening background values, projects in McMullen County cannot use screening background values.