

AS-50

### Air Quality Assessment Program Air Monitoring Report 1992



TEXAS NATURAL RESOURCE CONSERVATION COMMISSION



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# Air Quality Assessment Program Air Monitoring Report 1992

AS-50 March 1995



John Hall, Chairman Pam Reed, Commissioner Peggy Garner, Commissioner

Dan Pearson, Executive Director

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#### Texas Natural Resource Conservation Commission Monitoring Operations Division Data Management & Analysis Section

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Attn:	Monica Havelka Data Management & Analysis Section Monitoring Operations Division, Bldg. B MC 165	

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# Introduction

This report provides a summary of routine air quality measurements collected by the Texas Natural Resource Conservation Commission (TNRCC) and these other government organizations: City of Dallas, City of Fort Worth, City of Houston, El Paso City-County Health District, Galveston County Health District, National Park Service, and the New Mexico Air Quality Bureau. It also includes measurements from these private monitoring networks: Houston Regional Monitoring Corporation (HRM), Southeast Texas Regional Planning Commission (SETRPC), and the Texas City/La Marque Community Air Monitoring Network (TCLMCM).

The U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for six air pollutants: ozone  $(O_3)$ , carbon monoxide (CO), sulfur dioxide  $(SO_2)$ , nitrogen dioxide  $(NO_2)$ , respirable particulate matter  $(PM_{10})$ , and lead. The gaseous pollutants — ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide — are monitored on a continuous basis with one-hour averages recorded for every hour of the day every day. Particulate matter and lead are sampled on a noncontinuous basis with one 24-hour average

recorded once every sixth day at most sites, although a few sites monitor every day or every other day.

In addition, the TNRCC and the EPA collect rain samples across the state to monitor for acid rain.

Table 1 shows the pollutant concentrations required to exceed the national standards as expressed in the units used in this report. Figure 1 shows the total number of TNRCC, other government and private monitoring sites in the State of Texas for each of the pollutants.

### Table 1. Air Pollution ConcentrationsRequired to Exceed the NAAQS

Pollutant	Averaging	Primary	Secondary
	Period	NAAQS	NAAQS
03	1-hr ☆	125 ppb	125 ppb
CO	1-hr ☆☆	35.5 ppm	35.5 ppm
	8-hr ☆☆	9.5 ppm	9.5 ppm
SO <sub>2</sub>	3-hr ☆☆	—	550 ppb
	24-hr ☆☆	145 ppb	_
	Annual ☆☆☆	35 ppb	_
NO <sub>2</sub>	Annual ☆☆☆	54 ppb	54 ppb
PM10	24-hr ☆	155 μg/m <sup>3</sup>	155 μg/m <sup>3</sup>
	Annual ☆☆☆	51 μg/m <sup>3</sup>	51 μg/m <sup>3</sup>
Lead	Qtr ☆☆☆	1.55 μg/m <sup>3</sup>	1.55 μg/m <sup>3</sup>

☆ Not to be exceeded on more than three days over three years ☆☆ Not to be exceeded more than once per calendar year ☆☆☆ Not to be exceeded

Primary NAAQS — The levels of air quality that the EPA judges necessary, with an adequate margin of safety, to protect the public health. Secondary NAAQS — The levels of air quality that the EPA judges necessary to protect the public welfare from any known or anticipated adverse effects.

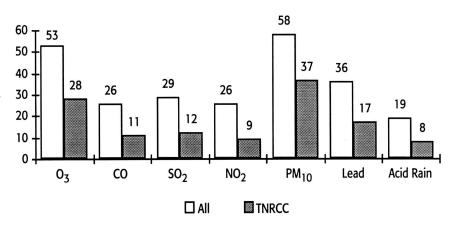
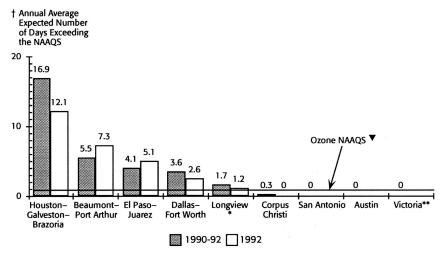


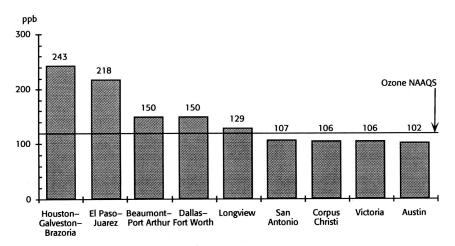
Figure 1. Number of Texas Air Monitoring Sites in 1992

# Air Pollutant Summary

During 1992, the state, other government and private monitoring networks measured levels of ozone, carbon monoxide, and particulate matter above the concentration levels defined by the national standards. Measured levels of nitrogen dioxide, sulfur dioxide, and lead were below the standards. Figures 2 through 11 display comparisons of peak air pollutant measurements for metropolitan and regional areas where the pollutants are monitored. Each graph shows the highest measurement recorded at any one site in each of the areas. The graphs for carbon monoxide and sulfur dioxide also include the second



- † Expected number of days with highest one-hour concentration over 0.12 ppm as defined by EPA for NAAQS comparisons
- Annual average not to exceed 1.0 day per year over a three-year period
- \* Each \* indicates one year not meeting EPA completeness criteria; not valid for NAAQS comparison



#### Figure 2. Highest Number of Ozone Exceedances in 1992

Figure 3. Highest Ozone One–Hour Averages in 1992

highest measurements, which are used for standard determinations.

Ozone measurements above 124 parts per billion (ppb) were recorded in the Beaumont-Port Arthur, Dallas-Fort Worth, El Paso, Houston-Galveston-Brazoria, and Longview-Marshall metropolitan areas. Measurements of ozone did not exceed 124 ppb during 1992 at any of the monitoring sites in the Austin, Corpus Christi, San Antonio, and Victoria areas. The highest ozone onehour average measurement during 1992 was 243 ppb in the Houston area.

Houston-Galveston-Brazoria, Beaumont-Port Arthur, Dallas-Fort Worth, El Paso, and Longview-Marshall are ozone nonattainment areas based on the number of expected exceedance days of the ozone standard. (Calculating the expected number of exceedance days is EPA's method for compensating for missing ozone measurements. The calculation is used to determine whether or not an area is in attainment of the standard. An exceedance day is any day when the maximum one-hour ozone concentration is greater than 124 ppb.)

Monitors recorded eighthour concentrations of carbon monoxide above 9 parts per million (ppm) only in El Paso, where a high measurement of 10.5 ppm was observed. In nearby Juarez, Mexico, the highest eighthour running average was 11.4 ppm. Two of the six U.S. sites in El Paso recorded violations of the eight-hour carbon monoxide standard.

One of the eight Texas sites in the El Paso-Juarez area recorded a daily respirable particulate matter measurement above 150 micrograms per cubic meter  $(\mu g/m^3)$ . Respirable particulate matter is made up of small, airborne particles that can be inhaled and lodge in the lungs. The high daily average was 166  $\mu g/m^3$ . In Juarez the highest 24-hour measurement was 314  $\mu g/m^3$ , and at adjacent New Mexico sites the peak was 110  $\mu g/m^3$ .

Table 2 provides a summary listing of pollutant measurements taken at each site with a comparison to the standard for all of the air pollutants. Additional summary information is provided about each pollutant in the following sections of this chapter.

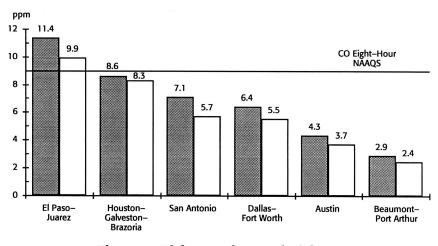


Figure 4. Highest and Second Highest CO Eight–Hour Averages in 1992

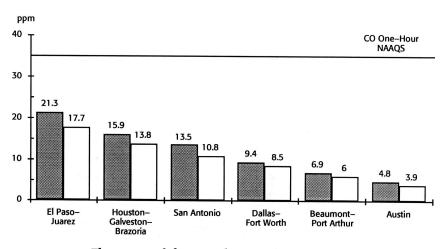
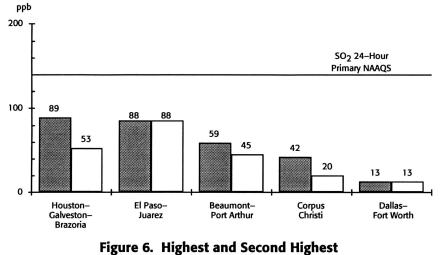


Figure 5. Highest and Second Highest CO One-Hour Averages in 1992



SO<sub>2</sub> 24–Hour Averages in 1992

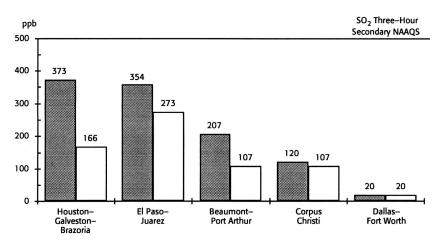


Figure 7. Highest and Second Highest SO<sub>2</sub> Three–Hour Averages in 1992

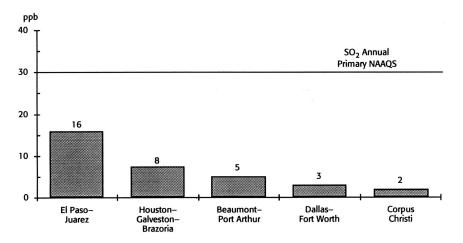
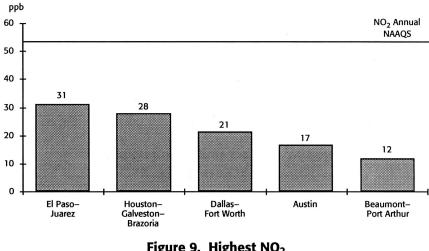
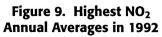


Figure 8. Highest SO<sub>2</sub> Annual Averages in 1992





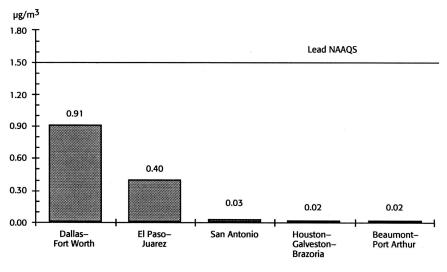
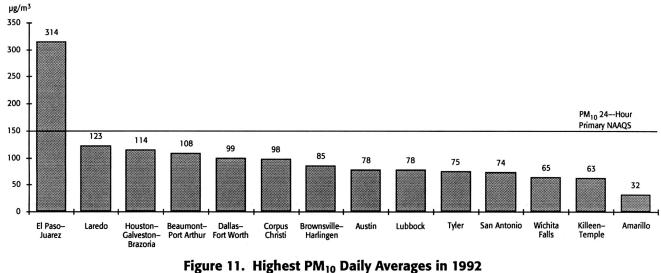
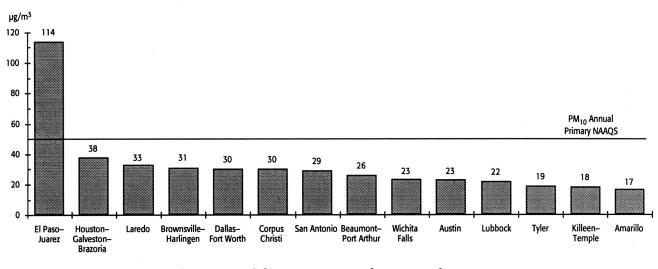


Figure 10. Highest Lead Quarterly Averages in 1992



(Including Exceptional Event Days)\*

\* Days when unusual, uncontrollable events occurred (primarily dust storms)





\* Days when unusual, uncontrollable events occurred (primarily dust storms)

Table 2.	1992	Pollutant	Summary	by	Monitoring	Site
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		ble 2			llutan		mary	by M	onitor		τ		
	C	)3	C	)+		SO <sub>2</sub> ⇔		NO <sub>2</sub>		PM10		Lea	ad
	High	Exp	2nd	2nd	2nd	2nd			High	Exp	Exp	High	Exc
Location	Hr	Exc	Hr	8-Hr	24-Hr	3-Hr	Ann	Ann	Day	Exc	Ann	Qtr	Qtr
	(ppb)	(days)	(ppm)	(ppm)	(ppb)	(ppb)	(ppb)	(ppb)	(µg/m <sup>3</sup> )	(days)	(μg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	
NAAQS	125	1.1	35.5	9.5	145	550	35	54	155	1.1	51	1.55	0
Amarillo MSA (T	NRCC R	legion	1)						I				
Amarillo									32	<b>\$0.0</b>	¢17		
Austin-San Marcos	MSA (T	NRCC Re			1			1 +17	I			1	
Downtown 32			6.0	3.7				¢17	78	0.0	23	<i>x</i>	
East North 25	101	0.0							/0	0.0	25		
Northwest 3	102	0.0											
Ridgetop									78	0.0	22		
<b>Beaumont-Port Art</b>	hur MSA	(TNRCC	Region	10)									
Beaumont 2	138	2.1	3.9	2.4	45	107	5	8	108	0.0	26	0.02	0
Kountze 85	111	0.0											
Marina							-					0.02	0
Port Arthur 28	132	3.2			43	103	4						
SETRPC 40	150	3.0						5					
SETRPC 42 SETRPC 43	151 148	5.0 7.1						10					
West Orange 9	137	1.1						12					
Big Bend National			ion 6)										
Brewster County	65	0.0			I			T	I				
Brazoria PMSA (TN			1		1			1	1				
Clute 11	134	3.7			I								
Brownsville-Harling	zen-San	Benito I	MSA (TN	RCC Reg	zion 15)								
Brownsville	1				1				85	0.0	31		
San Benito					ē.				73	0.0	24		
Corpus Christi M	SA (TN	RCC Re	gion 1	4)									
Leopard									97	<b>\$0.0</b>	<b>\$</b> 28		
Navigation									98	<b>\$0.0</b>	<b>\$</b> 30		
Tuloso 21	92 106	0.0 0.0			14 20	57 107	1						
West 4			<u>ا</u>		20	107	Z		I				
Dallas PMSA (TN Bonnieview	I 100	egion 4 0.0	{		I			12	1			I	
Boys Club	1 100	ų.u						'2	75	0.0	27	0.19	0
Cedar Hill									37	¢0.0	¢19	0.15	U
Chalk Hill									82	0.0	23	0.02	0
Coit									84	0.0	26		
Colony	120	0.0											
Convention									51	<b>\$0.0</b>	<b>\$</b> 26	0.04	0
Denton Airport	150	*											
Dallas N 5	123	0.0						14				0.09	0
Douglas Earhart												0.04 0.05	0
Ervay	1		8.5	5.5								0.05	0
Farmers Branch	1			5.5								0.03	0
Frisco Acker	1											0.13	ŏ
Frisco Gould 2₩	1								1			0.25	Ō
Frisco Gould 4₩								1				0.58	0
Frisco 31	144	\$											-
Frisco 5th St. Garland	1		1									0.91	0
Hinton	140	1.0	7.5	5.4	10	20	2	21	1			0.08	0
Lancaster		1.0	1.5	J.4		20	2	1	78	0.0	22		
M.L. King										0.0	~~	0.05	0
Midlothian 4	,		1		1			<b>N</b> 1	47	0.0	17		5
Midlothian 5			1						30	<b>\$0.0</b>	¢19		
Midlothian 6					1				99	<b>\$0.0</b>	28		
Midlothian 7 Midlothian 8									50	<b>¢0.0</b>	17		
Midlothian 9									52 21	¢0.0 ¢0.0	16 ¢19		
Midlothian 11	1		1						34	≎0.0 ¢0.0	¢19 ¢16		
Midlothian 84									52	0.0 0.0	19		
Morrell	1		1		1				91	0.0	30	0.06	0
Nolen					1					0.0		0.04	ŏ
Palmer Paper	1				1			1				0.05	ŏ
Rector	1				1							0.06	0
					1			1	1			0.05	0
Sargent													
												0.03	0

Air pollution concentration required to exceed the NAAQS Number of actual exceedances; expected exceedances may be slightly higher t

Measurements for 1992 do not meet EPA completeness criteria ¢

Block averages, rounded to hundredths Relocated during 1992 ۰.

₩

Running averages, truncated to tenths +

					Sumi			nitori					
	0			)+		SO24		NO <sub>2</sub>		PM <sub>10</sub>		Lea	Id
	High	Ехр	2nd	2nd	2nd	2nd			High	Exp	Exp	High	Exc
Location	Hr	Exc	, Hr	8-Hr	24-Hr	3-Hr	Ann	Ann	Day	Exc	Ann	Qtr	Qtr
	(ppb)	(days)	(ppm)	(ppm)	(ppb)	(ppb)	(ppb)	(ppb)	(µg/m <sup>3</sup> )	(days)	(μg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	
NAAQS	125	1.1	35.5	9.5	145	550	35	54	155	1.1	51	1.55	0
El Paso-Juarez				C Regi	on 6)								
Advance MX	218	*	14.8	7.7					314	10.0	114		
Anthony NM	1								110	0.0	39		
Chamizal	124	0.0	17.7	9.9					113	<b>\$0.0</b>	<b>\$</b> 26		•
Downtown 6	112	0.0	16.0	9.3	48	240	10	31	÷.,			0.22	0
East 30	123 157	0.0 \$	12.3	7.0									
EPNG Building Ivanhoe	157	*	8.2	4.5					49	0.0	22		
Kern			0.2	4.5	56	227	11		73	0.0	~~~	0.17	0
La Union NM	117	0.0			16	81	3					0.17	Ŭ
Lindbergh	1	0.0				•••			41	0.0	22		
NE Clinic									47	0.0	21	0.10	0
Pestalozzi MX									189	<b>\$2.0</b>	<b>\$58</b>		
Race Track NM												0.40	0
Riverside									116	0.0	32		
Socorro									88	0.0	41		
Sunland NM	126	*			88	267	16		109	0.0	32	0.38	0
Techno MX	124	\$	16.0	8.8					135	0.0	40	0.00	~
Tillman	1.40	<b>F 1</b>	14.4	7.7		277	12	21	166	2.1	40	0.26	0
UTEP 12	142	5.1	10.9	6.4	54	273	12	21	146	0.0	44		
Vilas Zanco MX									212	2.0	58		
Zenco MX		TNDC							212	2.0	50		
Fort Worth-Arling	ston PMSA	(INKC			1				1			0.07	~
Downtown 16			5.6	4.0					51	0.0	20	0.03	0
FAA									47	¢0.0	¢20		
Geddes Keller 17	147	1.0							47	₩0.0	<b>₩</b> 20		
NW 13	147	2.1	6.5	3.8	13	20	3	14					
Worth Heights	145	2.1	0.5	5.0		20	5	14	70	0.0	25	0.03	0
Galveston-Texas	City DMSA	TNPC	C Degi	on 12)									-
Fire Station	City Finda	linue	e negn		1				50	¢0.0	<b>¢</b> 23	1	
Galveston Airport	198	\$							50	+0.0	+25		
Nessler Pool	150	-							103	<b>\$0.0</b>	<b>\$</b> 24		
TCLMCM 34th St.	180	\$			20	53	<b>¢</b> 2	8					
TCLMCM Ave. A	1.00	•			18	47	\$2	_					
TCLMCM Seawall		ľ			10	50	\$4	\$\$					
Texas City 10	126				19	50	<del>4</del> 4						
Guadalupe Moi		1.1			39	103	<b>4</b>		111	<b>\$0.0</b>	<b>\$</b> 25	0.02	0
Culberson County			Park	(TNRCC	39	103			111	¢0.0	<b>\$</b> 25	0.02	0
	untains N		l Park	(TNRCC	39	103			111	¢0.0	<b>\$</b> 25	0.02	0
Houston PMSA	untains N 80	lationa ¢		(TNRCC	39	103						0.02	0
Houston PMSA Aldine 8	untains N 80	lationa ¢		(TN R C C	39 Regio	103 n 6)	4	¢15	111 62	¢0.0 ¢0.0	\$25 \$30	0.02	0
Houston PMSA Aldine 8 Baytown 24	untains N 80 (TNRCC	lationa ¢ Region	12)		39	103			62	¢0.0	<b>\$</b> 30		
Houston PMSA Aldine 8 Baytown 24 Bingle	UNTAINS N 80 (TNRCC 200	lationa ¢ Region 9.4	<b>12)</b> 10.1	8.1	39 Regio 23	103 n 6) 50	8	¢15	62 100	¢0.0 0.0	<b>\$</b> 30 26	0.01	0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton	untains N 80 (TN R CC 200 220	lationa ¢ Region 9.4 8.2	<b>12)</b> 10.1 6.8	8.1 4.7	39 Regio 23 31	103 n 6) 50 110	4 8 6	\$15 23	62 100 103	¢0.0 0.0 0.0	¢30 26 38		
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford	UNTAINS N 80 (TN R CC 200 220 220 208	lationa	<b>12)</b> 10.1	8.1	39 Regio 23 31 32	103 n 6) 50 110 60	4 8 6 7	¢15	62 100	¢0.0 0.0	<b>\$</b> 30 26	0.01	0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet	Untains N 80 (TN R CC 200 220 220 208 178	ationa <b>Region</b> 9.4 8.2 4.6 6.7	<b>12)</b> 10.1 6.8	8.1 4.7	39 Regio 23 31 32 13	103 n 6) 50 110 60 27	4 8 6 7 3	\$15 23	62 100 103	¢0.0 0.0 0.0	¢30 26 38	0.01	0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18	Unitains N 80 (TNRCC 200 220 208 178 198	ationa <b>Region</b> 9.4 8.2 4.6 6.7 2.3	12) 10.1 6.8 8.3	8.1 4.7 5.1	39 Regio 23 31 32 13 10	103 n 6) 50 110 60 27 33	4 8 6 7 3 1	\$15 23 28	62 100 103 103	<b>≎0.0</b> 0.0 0.0 0.0	<b>\$</b> 30 26 38 30	0.01 0.02	0 0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18 East 1	Untains N 80 (TN R CC 200 220 220 208 178	ationa <b>Region</b> 9.4 8.2 4.6 6.7	<b>12)</b> 10.1 6.8	8.1 4.7	39 Regio 23 31 32 13	103 n 6) 50 110 60 27	4 8 6 7 3	\$15 23	62 100 103	¢0.0 0.0 0.0	¢30 26 38	0.01 0.02	0 0 0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18 East 1 Fulton	Unitains N 80 (TNRCC 200 220 208 178 198 225	ationa ★ Region 9.4 8.2 4.6 6.7 2.3 6.8	12) 10.1 6.8 8.3	8.1 4.7 5.1	39 Regio 23 31 32 13 10	103 n 6) 50 110 60 27 33	4 8 6 7 3 1	\$15 23 28	62 100 103 103	<b>≎0.0</b> 0.0 0.0 0.0	<b>\$</b> 30 26 38 30	0.01 0.02	0 0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18 East 1 Fulton Harris NW 26	Unitains N 80 (TNRCC 200 208 178 198 225 176	ationa	12) 10.1 6.8 8.3 12.1	8.1 4.7 5.1 6.6	39 Regio 23 31 32 13 10 19	103 n 6) 50 110 60 27 33 80	4 8 6 7 3 1 4	<ul> <li>         ★15         23         28         17</li></ul>	62 100 103 103 99	<b>☆</b> 0.0 0.0 0.0 0.0	<ul> <li>\$30</li> <li>26</li> <li>38</li> <li>30</li> <li>\$34</li> </ul>	0.01 0.02	0 0 0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18 East 1 Fulton Harris NW 26 HRM 1	Untains N 80 (TNRCC 200 220 208 178 198 225 176 229	ationa ★ Region 9.4 8.2 4.6 6.7 2.3 6.8 10.2 10.3	12) 10.1 6.8 8.3 12.1 7.9	8.1 4.7 5.1 6.6 5.2	39 Regio 23 31 32 13 10 19 24	103 <b>n 6)</b> 50 110 60 27 33 80 89	4 8 6 7 3 1 4 5	<ul> <li>         ★15         23         28         17         27         </li> </ul>	62 100 103 103 99 97	<ul> <li>★0.0</li> <li>0.0</li> <li>0.0</li> <li>0.0</li> <li>\$0.0</li> <li>\$0.0</li> <li>NA</li> </ul>	<b>\$</b> 30 26 38 30	0.01 0.02	0 0 0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18 East 1 Fulton Harris NW 26 HRM 1 HRM 3	Untains N 80 (TNRCC 200 220 208 178 198 225 176 229 209	ationa ★ Region 9.4 8.2 4.6 6.7 2.3 6.8 10.2 10.3 10.4	12) 10.1 6.8 8.3 12.1 7.9 7.0	8.1 4.7 5.1 6.6 5.2 5.2	39 Regio 23 31 32 13 10 19 24 53	103 <b>n 6)</b> 50 110 60 27 33 80 89 166	4 8 6 7 3 1 4 5 6	<ul> <li>         ★15         23         28         17         </li> </ul>	62 100 103 103 99	<b>☆</b> 0.0 0.0 0.0 0.0	<ul> <li>\$\$30</li> <li>26</li> <li>38</li> <li>30</li> <li>\$\$34</li> <li>30</li> </ul>	0.01 0.02	0 0 0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18 East 1 Fulton Harris NW 26 HRM 1 HRM 3 HRM 4	Untains N 80 (TNRCC 200 220 208 178 198 225 176 229 209 208	ationa ★ Region 9.4 8.2 4.6 6.7 2.3 6.8 10.2 10.3 10.4 10.1	12) 10.1 6.8 8.3 12.1 7.9 7.0 3.0	8.1 4.7 5.1 6.6 5.2	39 Regio 23 31 32 13 10 19 24	103 <b>n 6)</b> 50 110 60 27 33 80 89	4 8 6 7 3 1 4 5	<ul> <li>         ★15         23         28         17         27         22         </li> </ul>	62 100 103 103 99 97	<ul> <li>★0.0</li> <li>0.0</li> <li>0.0</li> <li>0.0</li> <li>\$0.0</li> <li>\$0.0</li> <li>NA</li> </ul>	<ul> <li>\$\$30</li> <li>26</li> <li>38</li> <li>30</li> <li>\$\$34</li> <li>30</li> </ul>	0.01 0.02	0 0 0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18 East 1 Fulton Harris NW 26 HRM 1 HRM 3 HRM 4 HRM 7	Untains N 80 (TNRCC 200 220 208 178 198 225 176 229 209	ationa ★ Region 9.4 8.2 4.6 6.7 2.3 6.8 10.2 10.3 10.4	12) 10.1 6.8 8.3 12.1 7.9 7.0	8.1 4.7 5.1 6.6 5.2 5.2 2.3	39 Regio 23 31 32 13 10 19 24 53 10	103 n 6) 50 110 60 27 33 80 89 166 48	4 8 6 7 3 1 4 5 6 1	<ul> <li>         ★15         23         28         17         27         22         17         </li> </ul>	62 100 103 103 99 99 97 102	<ul> <li>\$0.0</li> <li>0.0</li> <li>0.0</li> <li>0.0</li> <li>\$0.0</li> <li>\$</li></ul>	<ul> <li><b>☆</b>30</li> <li>26</li> <li>38</li> <li>30</li> <li><b>☆</b>34</li> <li>30</li> <li>34</li> </ul>	0.01 0.02	0 0 0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18 East 1 Fulton Harris NW 26 HRM 1 HRM 3 HRM 4 HRM 7 HRM 8	Unitains N 80 (TNRCC 200 220 208 178 198 225 176 229 209 209 208 243	<b>ationa</b> <b>Region</b> 9.4 8.2 4.6 6.7 2.3 6.8 10.2 10.3 10.4 10.1 12.2	12) 10.1 6.8 8.3 12.1 7.9 7.0 3.0 5.3	8.1 4.7 5.1 6.6 5.2 5.2 2.3 3.0	39 Regio 23 31 32 13 10 19 24 53 10 21	103 n 6) 50 110 60 27 33 80 89 166 48 62	4 8 6 7 3 1 4 5 6 1 2	<ul> <li><b>↓</b>15</li> <li>23</li> <li>28</li> <li>17</li> <li>27</li> <li>27</li> <li>27</li> <li>17</li> <li>19</li> </ul>	62 100 103 103 99 99 97 102	<ul> <li>\$0.0</li> <li>0.0</li> <li>0.0</li> <li>0.0</li> <li>\$0.0</li> <li>\$</li></ul>	<ul> <li><b>☆</b>30</li> <li>26</li> <li>38</li> <li>30</li> <li><b>☆</b>34</li> <li>30</li> <li>34</li> </ul>	0.01 0.02	0 0 0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18 East 1 Fulton Harris NW 26 HRM 1 HRM 3 HRM 4 HRM 7	Unitains N 80 (TNRCC 200 208 178 198 225 176 229 209 209 208 243 202	ationa <b>Region</b> 9.4 8.2 4.6 6.7 2.3 6.8 10.2 10.3 10.4 10.1 12.2 7.2	12) 10.1 6.8 8.3 12.1 7.9 7.0 3.0 5.3 3.7	8.1 4.7 5.1 6.6 5.2 2.3 3.0 2.5	39 Regio 23 31 32 13 10 19 24 53 10 21 10	103 n 6) 50 110 60 27 33 80 89 166 48 62 26	4 8 6 7 3 1 4 5 6 1 2 1	*15 23 28 17 27 27 22 17 19 13	62 100 103 103 99 97 102 48	<ul> <li><b>☆</b>0.0</li> <li>0.0</li> <li>0.0</li> <li><b>☆</b>0.0</li> <li><b>☆</b>0.0</li> <li>NA</li> <li>NA</li> <li>NA</li> </ul>	<ul> <li>\$\$30</li> <li>26</li> <li>38</li> <li>30</li> <li>\$34</li> <li>30</li> <li>34</li> <li>22</li> </ul>	0.01 0.02 0.02 0.01	0 0 0 0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18 East 1 Fulton Harris NW 26 HRM 1 HRM 3 HRM 4 HRM 7 HRM 8 HRM 10	Unitains N 80 (TNRCC 200 208 178 198 225 176 229 209 209 208 243 202 159	ationa ★ Region 9.4 8.2 4.6 6.7 2.3 6.8 10.2 10.3 10.4 10.1 12.2 7.2 3.1 6.1	12) 10.1 6.8 8.3 12.1 7.9 7.0 3.0 5.3 3.7 1.2 1.8	8.1 4.7 5.1 6.6 5.2 5.2 2.3 3.0 2.5 0.8 0.9	39 Regio 23 31 32 13 10 19 24 53 10 21 10 4	103 n 6) 50 110 60 27 33 80 89 166 48 62 26 16	4 8 6 7 3 1 4 5 6 1 2 1 2 1 <1	<ul> <li>\$\$15</li> <li>23</li> <li>28</li> <li>17</li> <li>27</li> <li>22</li> <li>17</li> <li>19</li> <li>13</li> <li>8</li> <li>12</li> </ul>	62 100 103 103 99 99 97 102	<ul> <li>\$0.0</li> <li>0.0</li> <li>0.0</li> <li>0.0</li> <li>\$0.0</li> <li>\$</li></ul>	<ul> <li><b>☆</b>30</li> <li>26</li> <li>38</li> <li>30</li> <li><b>☆</b>34</li> <li>30</li> <li>34</li> </ul>	0.01 0.02	0 0 0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18 East 1 Fulton Harris NW 26 HRM 1 HRM 3 HRM 4 HRM 7 HRM 8 HRM 10 HRM 11	untains N 80 (TNRCC 200 208 178 198 225 176 229 209 209 208 243 202 159 173 183	ationa ★ Region 9.4 8.2 4.6 6.7 2.3 6.8 10.2 10.3 10.4 10.1 12.2 7.2 3.1 6.1 6.7	12) 10.1 6.8 8.3 12.1 7.9 7.0 3.0 5.3 3.7 1.2	8.1 4.7 5.1 6.6 5.2 5.2 2.3 3.0 2.5 0.8	39 Regio 23 31 32 13 10 19 24 53 10 21 10 4 5	103 <b>n 6)</b> 50 110 60 27 33 80 89 166 48 62 26 16 23	4 8 6 7 3 1 4 5 6 1 2 1 1 <1	*15 23 28 17 27 27 27 19 13 8	62 100 103 103 99 97 102 48	<ul> <li><b>☆</b>0.0</li> <li>0.0</li> <li>0.0</li> <li><b>☆</b>0.0</li> <li><b>☆</b>0.0</li> <li>NA</li> <li>NA</li> <li>NA</li> </ul>	<ul> <li>\$\$30</li> <li>26</li> <li>38</li> <li>30</li> <li>\$34</li> <li>30</li> <li>34</li> <li>22</li> </ul>	0.01 0.02 0.02 0.01	0 0 0 0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18 East 1 Fulton Harris NW 26 HRM 1 HRM 3 HRM 4 HRM 7 HRM 8 HRM 10 HRM 11 Kress	Unitains N 80 (TNRCC 200 220 208 178 198 225 176 229 209 208 243 202 159 173 183 218	ationa ★ Region 9.4 8.2 4.6 6.7 2.3 6.8 10.2 10.3 10.4 10.1 12.2 7.2 3.1 6.1 6.7 8.7	12) 10.1 6.8 8.3 12.1 7.9 7.0 3.0 5.3 3.7 1.2 1.8	8.1 4.7 5.1 6.6 5.2 5.2 2.3 3.0 2.5 0.8 0.9	39 Regio 23 31 32 13 10 19 24 53 10 21 10 4 5 5 40	103 n 6) 50 110 60 27 33 80 89 166 48 62 26 16 23 117	4 8 6 7 3 1 4 5 6 1 2 1 4 1 2 1 1 <1 1 5 6	<ul> <li>\$\$15</li> <li>23</li> <li>28</li> <li>17</li> <li>27</li> <li>22</li> <li>17</li> <li>19</li> <li>13</li> <li>8</li> <li>12</li> </ul>	62 100 103 103 99 97 102 48 108	<ul> <li>\$0.0</li> <li>0.0</li> <li>0.0</li> <li>\$0.0</li> </ul>	<ul> <li>\$\$30</li> <li>26</li> <li>38</li> <li>30</li> <li>\$\$34</li> <li>30</li> <li>34</li> <li>22</li> <li>34</li> </ul>	0.01 0.02 0.02 0.01	0 0 0 0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18 East 1 Fulton Harris NW 26 HRM 1 HRM 3 HRM 4 HRM 7 HRM 8 HRM 10 HRM 11 Kress Lang Manchester 22 Monroe	Unitains N 80 (TNRCC 200 208 178 198 225 176 229 209 208 243 202 159 173 183 218 220	ationa ★ Region 9.4 8.2 4.6 6.7 2.3 6.8 10.2 10.3 10.4 10.1 12.2 7.2 3.1 6.1 6.7 8.7 6.2	12) 10.1 6.8 8.3 12.1 7.9 7.0 3.0 5.3 3.7 1.2 1.8	8.1 4.7 5.1 6.6 5.2 5.2 2.3 3.0 2.5 0.8 0.9	39 Regio 23 31 32 13 10 19 24 53 10 21 10 4 5 5 40 18	103 n 6) 50 110 60 27 33 80 89 166 48 62 26 16 23 117 43	4 8 6 7 3 1 4 5 6 1 2 1 <1 <1 <1 <1 6 4	<ul> <li>\$\$15</li> <li>23</li> <li>28</li> <li>17</li> <li>27</li> <li>22</li> <li>17</li> <li>19</li> <li>13</li> <li>8</li> <li>12</li> </ul>	62 100 103 103 99 97 102 48	<ul> <li><b>☆</b>0.0</li> <li>0.0</li> <li>0.0</li> <li><b>☆</b>0.0</li> <li><b>☆</b>0.0</li> <li>NA</li> <li>NA</li> <li>NA</li> </ul>	<ul> <li>\$\$30</li> <li>26</li> <li>38</li> <li>30</li> <li>\$34</li> <li>30</li> <li>34</li> <li>22</li> </ul>	0.01 0.02 0.02 0.01	0 0 0 0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18 East 1 Fulton Harris NW 26 HRM 1 HRM 3 HRM 4 HRM 7 HRM 8 HRM 10 HRM 10 HRM 11 Kress Lang Manchester 22 Monroe N Wayside	Unitains N 80 (TNRCC 200 220 208 178 198 225 176 229 209 208 243 202 159 173 183 218	ationa ★ Region 9.4 8.2 4.6 6.7 2.3 6.8 10.2 10.3 10.4 10.1 12.2 7.2 3.1 6.1 6.7 8.7	12) 10.1 6.8 8.3 12.1 7.9 7.0 3.0 5.3 3.7 1.2 1.8	8.1 4.7 5.1 6.6 5.2 5.2 2.3 3.0 2.5 0.8 0.9	39 Regio 23 31 32 13 10 19 24 53 10 21 10 4 5 5 40	103 n 6) 50 110 60 27 33 80 89 166 48 62 26 16 23 117	4 8 6 7 3 1 4 5 6 1 2 1 4 1 2 1 1 <1 1 5 6	<ul> <li>\$\$15</li> <li>23</li> <li>28</li> <li>17</li> <li>27</li> <li>22</li> <li>17</li> <li>19</li> <li>13</li> <li>8</li> <li>12</li> </ul>	62 100 103 103 99 97 102 48 108 103	<ul> <li>\$0.0</li> <li>0.0</li> <li>0.0</li> <li>\$0.0</li> <li>\$0.0</li> <li>\$0.0</li> <li>NA</li> <li>NA</li> <li>NA</li> <li>0.0</li> <li>\$0.0</li> </ul>	<ul> <li>\$\$30</li> <li>26</li> <li>38</li> <li>30</li> <li>\$34</li> <li>30</li> <li>34</li> <li>22</li> <li>34</li> <li>\$28</li> </ul>	0.01 0.02 0.02 0.01	0 0 0 0
Houston PMSA Aldine 8 Baytown 24 Bingle Clinton Crawford Croquet Deer Park 18 East 1 Fulton Harris NW 26 HRM 1 HRM 3 HRM 4 HRM 7 HRM 8 HRM 7 HRM 8 HRM 10 HRM 11 Kress Lang Manchester 22 Monroe	Unitains N 80 (TNRCC 200 208 178 198 225 176 229 209 208 243 202 159 173 183 218 220	ationa ★ Region 9.4 8.2 4.6 6.7 2.3 6.8 10.2 10.3 10.4 10.1 12.2 7.2 3.1 6.1 6.7 8.7 6.2	12) 10.1 6.8 8.3 12.1 7.9 7.0 3.0 5.3 3.7 1.2 1.8	8.1 4.7 5.1 6.6 5.2 5.2 2.3 3.0 2.5 0.8 0.9	39 Regio 23 31 32 13 10 19 24 53 10 21 10 4 5 5 40 18	103 n 6) 50 110 60 27 33 80 89 166 48 62 26 16 23 117 43	4 8 6 7 3 1 4 5 6 1 2 1 <1 <1 <1 <1 6 4	<ul> <li>\$\$15</li> <li>23</li> <li>28</li> <li>17</li> <li>27</li> <li>22</li> <li>17</li> <li>19</li> <li>13</li> <li>8</li> <li>12</li> </ul>	62 100 103 103 99 97 102 48 108	<ul> <li>\$0.0</li> <li>0.0</li> <li>0.0</li> <li>\$0.0</li> </ul>	<ul> <li>\$\$30</li> <li>26</li> <li>38</li> <li>30</li> <li>\$\$34</li> <li>30</li> <li>34</li> <li>22</li> <li>34</li> </ul>	0.01 0.02 0.02 0.01	0 0 0 0

Table 2. 1992 Pollutant Summary by Monitoring Site (continued)

Air pollution concentration required to exceed the NAAQS 

Number of actual exceedances; expected exceedances may be slightly higher t

✿ Measurements for 1992 do not meet EPA completeness criteria

Block averages, rounded to hundredths Relocated during 1992 ۰.

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Running averages, truncated to tenths +

14	DIE Z.	199	Z FUI	acant	Juin	mary i	by mit				nunu	cuj	
	C	3	CC	)+		SO2+		NO <sub>2</sub>		PM <sub>10</sub>		Lea	Id
Location	High Hr (ppm)	Exp Exc (days)	2nd Hr (ppm)	2nd 8-Hr (ppm)	2nd 24-Hr <sub>(ppb)</sub>	2nd 3-Hr <sub>(ppb)</sub>	Ann (ppb)	Ann (ppb)	High Day (µg/m <sup>3</sup> )	Exp Exc (days)	Exp Ann (µg/m <sup>3</sup> )	High Qtr (µg/m <sup>3</sup> )	Exc Qtr
NAAQS	125	1.1	35.5	9.5	145	550	35	54	155	1.1	51	1.55	0
Killeen-Temple Temple	MSA (T	NRCCR	egion	9)					63	0.0	18		-
Laredo MSA (TNRCO Laredo	Region	15)							123	<b>¢0.0</b>	<b>\$</b> 33		
Longview-Marshall Longview 19	MSA (TI 129	NRCC Re 1.1	gion 5)										
Lubbock MSA (TI Lubbock	NRCC R	egion 2	.)						78	0.0	22		
San Antonio MS/	A (TNRO	CC Regi	on 13)										
Airport		-										0.02	0
Downtown 27 East Kelly ITC			10.8	5.7					58 72	0.0 0.0	25 29	0.03	0
New Braunfels 3 New Braunfels 4									20 22	¢0.0 ¢0.0	¢13 ¢11		
North 7 Northwest 23	107 98	0.0 0.0	9.1	4.1					74	0.0 0.0	21		
Tyler MSA (TNRC	C Regi	on 5)											
Tyler									75	0.0	19		
Wichita Falls MS Wichita Falls	A (TNR	CC Reg	ion 3)						65	¢0.0	<b>\$</b> 23		
Victoria MSA (TN		egion 1	4)										
Victoria 87	106	0.0											

Table 2. 1992 Pollutant Summary by Monitoring Site (continued)

Air pollution concentration required to exceed the NAAQS

+ Number of actual exceedances; expected exceedances may be slightly higher

✿ Measurements for 1992 do not meet EPA completeness criteria

Block averages, rounded to hundredths

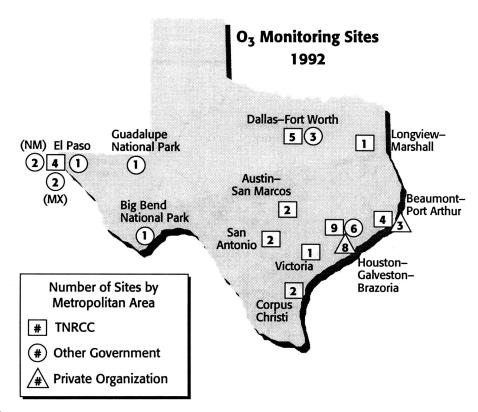
✤ Relocated during 1992

۰.

Running averages, truncated to tenths

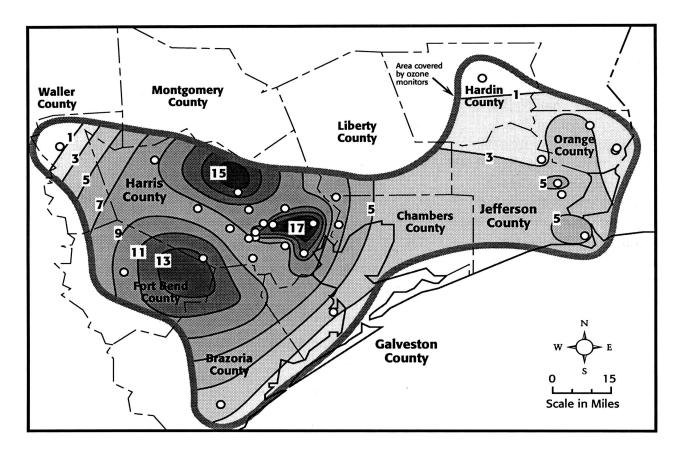
#### Ozone

During 1992, the TNRCC, other government and private networks continuously monitored ozone at 53 sites in Texas. In addition, New Mexico and Mexico each operated two ozone monitors across their respective borders from El Paso. The map at right shows the distribution of ozone monitors across the state. Unlike other gaseous pollutants, ozone is not emitted directly into the atmosphere. Instead, it is created in the atmosphere by the action of sunlight on volatile organic compounds and nitrogen oxides. In Texas, higher levels of ozone usually occur on sunny days with light winds, primarily from March through October. An ozone exceedance day is counted if the peak one-hour average ozone concentration measured exceeds the standard. Then, the expected exceedance days are determined from the actual number of measured exceedances with adjustments to account for missing data according to EPA guidelines. In order to demonstrate attainment of the standard, the average annual number of expected exceedances must not exceed 1.1 day per year over a three-year period.

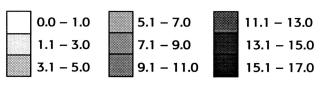


Figures 13, 14, and 15 show the distribution of the number of expected ozone exceedances for 1990-1992 for the Houston, Dallas-Fort Worth, and El Paso areas. Table 3 provides a summary of ozone measurements for 1992 and expected exceedances for 1990-1992. The listings include all of the TNRCC, other government and private monitoring sites. The table listings are grouped alphabetically by metropolitan area. The monitoring sites for each area are arranged in descending order from the highest measured one-hour concentration. The Aerometric Information

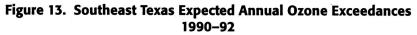
Retrieval System (AIRS) number for each site is listed along with the site name. The AIRS number is part of the EPA's system for keeping track of air monitoring sites nationwide. The percent completeness shown in this table is based on the ozone season and indicates the percentage of the ozone season for which valid data were obtained according to EPA guidelines.

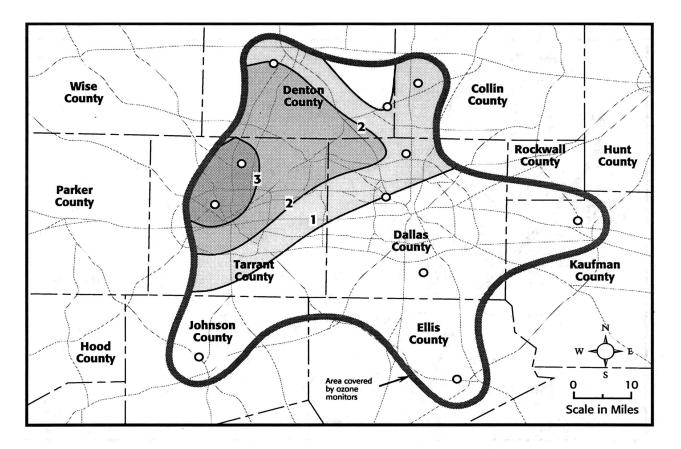


Key

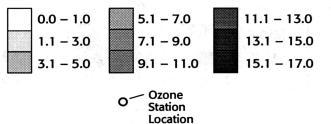


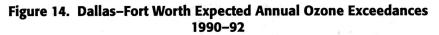


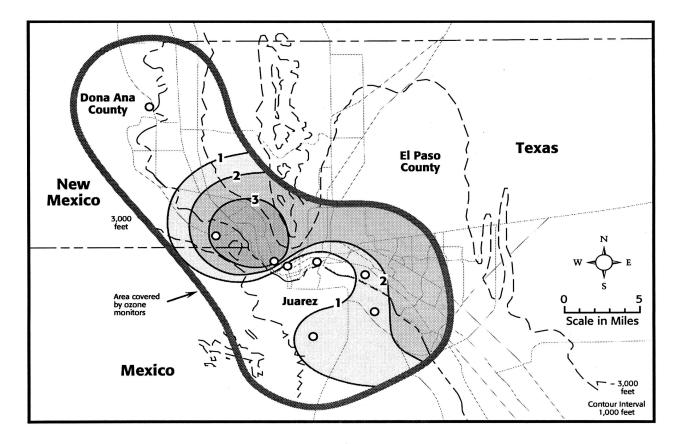












Key

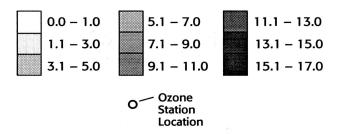


Figure 15. El Paso Expected Annual Ozone Exceedances 1990–92

AIRS         Site Name         I-Hr High (pp)         1-Hr (pp)         Exp Exc (bays/yr)         Exp Exc (bays/yr)         Exp Exc (bays/yr)         Percent Completeness           NAAQS E         125         •         •         •         •         •         0	Table 3. Ozone Summary 1992										
NAA05       Imacros       MAR (NRCC Region 1)       491.1       365         45300145       Austin NW 3       101       99       0.0       0.0       76         Beaumont-Port Arthur MSA (INRCC Region 10)       30.0       0.0       76       76         24501019       SETRPC 42       150       144.5       3.0       3.4       99         24501029       SETRPC 43       148       137       7.1       2.4       98         24500035       Beaumont 2       138       136       2.1       2.7       98         2450015       Port Arthur 28       132       130       3.1       3.5       83         2450016       Beaumont 2       138       136       0.0       -73       84         2450015       Fort Arthur 28       132       130       3.1       3.5       93         2450016       Berwster County       65       65       0.0       -73       85         35500265       Tusto 21       106       97       0.0       0.3       89         35500265       Tusto 21       120       0.0       0.9       97       100       0.0       97         1210025       Bento Arthur MS (TRCC Region 4)<	AIRS	Site Name		1-Hr High		1990-92	Percent				
Austin-San Marcos MSA (TNRCC Region 1)		-		Γ		-					
45300145       Austin NW 3       102       99       0.0       0.0       89         45300055       Austin N 25       101       89       0.0       0.0       76         Beaumont - Port Arthur MSA (TNRCC Region 10)	Austin-San	Marcos MSA (TNR	CC Region 1	1)							
Beaumont-Port Arthur M SA (TNRCC Region 10)	4530014S	Austin NW 3	102	99	0.0	0.0	89				
2450101P       SETRPC 40       150       144       3.0       5.4       99         2450102P       SETRPC 43       148       137       7.1       6.4       98         2450102P       SETRPC 43       148       137       7.1       6.4       98         2450015       Beaumont 2       138       136       2.1       2.7       96         3611001S       West Orange 9       137       124       1.1       2.0       88         2450015       Ford Arthur 28       132       130       3.1       3.5       93         3500205       Kountze 85       111       107       0.0       0.4       73         Big Bend National Park (TNRCC Region 14)					0.0	0.0	76				
3611100P       SETRPC 42       151       145       5.0       5.0       5.0       5.0         2450002P       Beaumont 2       138       136       2.1       2.7       96         3611001S       West Orange 9       137       124       1.1       2.0       88         2450002P       Kest Orange 9       137       124       1.1       2.0       88         2450011S       Port Arthur 28       132       130       3.1       3.5       93         1990022S       Kountze 85       11       107       0.0       0.4       73         Big Bend National Park (TNRCC Region 14)											
2450102P       SETRPC 43       148       137       7.1       6.4       96         2450005S       Beaumont 2       138       136       2.1       2.7       96         2450015       West Orange 9       137       124       1.1       2.0       88         19900025       Kountze 85       111       107       0.0       0.4       73         Big Bend National Park (TNRCC Region 6)       34301016       Brewster County       65       65       0.0       90         Corpus Christi MSA (TNRCC Region 14)       35500255       West 4       106       97       0.0       0.3       89         35500255       West 4       106       97       0.0       0.3       89         35500255       West 4       106       97       0.0       0.3       89         32500255       Keler 17       147       115       1.0       3.1       99         300025       Fisco 31       144       140       ****       68       11300684       Hans-Fort Worth CMS (TNRCC Region 6)       0.0       0.0       93       11300684       Hans-Fort ***       64       ****       64       11300684       Hans-Fort ****       64       11400455       EPNC Building<				A A A	1.2011.00201						
24500095         Beaumoni 2         136         136         2.1         2.7         96           24500115         Port Arthur 28         132         130         3.1         2.0         88           24500115         Port Arthur 28         131         107         0.0         0.4         73           Big Bend National Park (TNRCC Region 6)											
3611001S       West Orange 9       137       124       1.1       2.0       es         2450011S       Poot Arthur 28       132       130       3.1       3.5       93         Big Bend National Park (TNRCC Region 6)       3401016 [Brewster County       65       65       0.0       **0.0       90         Corpus Christi MSA (TNRCC Region 14)							0.00				
19900025         Kountze 85         111         107         0.0         0.4         73           Big Bend National Park (TNRCC Region 6)	state that is the manufactor and more		137	124							
Big Bend National Park (TNRCC Region 6)       0.0       **0.0       90         3430101G Brewster County       65       65       0.0       **0.0       90         Corpus Christi MSA (TNRCC Region 14)       35500265 Tuloso 21       92       91       0.0       0.0       95         Dallas-Fort Worth CMSA (TNRCC Region 4)       12100025       Perton Airport       150       150       150       93         12100025 Frisco 31       144       140       *       ***       68       94         43920035 Keller 17       147       115       1.0       3.1       99       93       0.0       0.0       93         11300451 Dollas N 5       123       121       0.0       1.8       97       97       90       0.0       0.0       93         11300451 Bonnieview       100       90       0.0       0.0       93       93       93       0600011       105       94       93       93       94       94       94       94       94       94       94       95       95       95       95       95       95       95       95       95       95       95       95       95       95       95       95       95       95											
3430101G       Brewster County       65       65       0.0       **0.0       90         Corpus Christi MSA (TNRCC Region 14)					0.0	0.4	73				
Corpus Christi MSA (TNRCC Region 14)           35500255         Tuisso 21         92         91         0.0         0.0         95           Dallas-Fort Worth CMSA (TNRCC Region 4)           1210025         Penton Airport         150         141         ***         73           43910025         R Worth NW 13         149         128         2.1         3.6         94           43920035         Keller 17         147         115         1.0         3.1         99           08500055         Frisco 31         144         140         *         ****         68           11300451         Dallas N 5         123         121         0.0         1.8         97           120054         Colony         120         110         0.0         0.0         93           11300455         EPNG Building         157         136         *         ****         64           14100445         Advance MX         128         164         ***         63           14100465         EPNG Building         157         136         ****         54           14100445         Charizal         124         114         0.0         0.0         87	Big Bend	National Park (				*** 0 0					
35500255       West 4       106       97       0.0       0.3       89         Dallas-Fort Worth CMSA (TNRCC Region 4)       ***       73         12100025       Denton Airport       150       141       ***       73         43910025       FtWorth NW 13       149       128       2.1       3.6       94         43910025       Frisco 31       144       140       ****       68         11300455       Dallas N 5       123       121       0.0       1.8       97         12100541       Colony       120       110       0.0       1.8       97         12100551       Bonnieview       100       90       0.0       0.0       93         El Paso-Juarez Area TX NM MX (TNRCC Region 6)       ***       24       14100375       UTEP 12       142       136       *       ***       54         14100455       EPNG Building       157       136       *       ***       54         14100457       UTEP 12       142       136       5.1       3.7       97         00500017       Sunland Park NM       126       115       *       ****       54         14100445       Chairal       124	3430101G				0.0	++0.0	90				
35500265       Tuloso 21       92       91       0.0       0.0       95         Dallas-Fort Worth CMSA (TNRCC Region 4)	35500255	West 4			00	0.7	80				
Dallas-Fort         Worth CMSA         TNRCC Region 4)         ***         73           12100025         Denton Airport         150         141         ***         73           12100025         Denton Airport         150         141         ***         73           13910025         Reller 17         147         115         1.0         3.1         99           08500055         Frisco 31         144         140         *         ****         68           11300455         Dallas N 5         123         121         0.0         1.8         97           11300455         Dallas N 5         123         121         0.0         1.0         97           11300455         Dallas N 5         123         126         5.1         3.7         97           11400465         EPNG Building         157         136         *         ***         54           14100445         Chang Zat         112         115         *         ***         54           14100245         East 30         123         118         0.0         1.1         92           01300175         Sunland Park NM         126         115         ***         54      <											
12100025       Denton Airport       150       141       *       ****       73         43910025       R Worth NW 13       149       128       2.1       3.6       94         43910025       R Worth NW 13       147       115       1.0       3.1       99         08500055       Frisco 31       144       140       ****       68         11300691       Hinton       140       110       1.0       93         11300691       Kolton       140       110       0.0       1.0       97         11300551       Bonnieview       100       90       0.0       0.0       97         06600041       Advance MX       218       164       *       ***       63         14100455       EPNG Building       157       1366       5.1       3.7       97         006600041       Advance MX       124       115       *       *1.3       49         01300175       Sunland Park NM       126       115       *       ***       54         14100441       Chamizal       124       114       0.0       *0.0       87         14100285       East 30       123       118       0.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>											
4392003S       keller 17       147       115       10       3.1       99         0850005S       Frisco 31       144       140       +       +**+       68         1130069L       Hinton       140       110       10       10       93         1130069L       Colony       120       110       0.0       1.8       97         1210054L       Colony       120       110       0.0       1.0       97         130055L       Bonnieview       100       90       0.0       0.0       93         El Paso-Juarez Area TX NM MX (TNRCC Region 6)       006004L       4dvance MX       218       164       *       ***       63         1410045S       EPNG Building       157       136       *       ***       24         1410042S       UTEP 12       142       136       5.1       3.7       97         0060001L       Techno MX       124       114       0.0       0.0       87       *       ***       54         1410042S       East 30       123       118       0.0       1.1       92       92         130008S       La Unio NM       117       101       0.0       0.0	1210002S	Denton Airport	150		*	***	73				
0850005S         Frisco 31         144         140         ***         68           1130064L         Hinton         140         110         1.0         1.0         93           1130064S         Dallas N 5         123         121         0.0         1.8         97           1210054L         Colony         120         110         0.0         1.0         93           EI Paso-Juarez Area TX NM MX (TNRCC Region 6)         0.0         93         90         0.0         93           EI Paso-Juarez Area TX NM MX (TNRCC Region 6)											
1130045L       linton       140       110       1.0       1.0       93         1130045S       Dallas N 5       123       121       0.0       1.8       97         113005SL       Bonnieview       100       90       0.0       0.0       93         El Paso-Juarez Area TX NM MX (TNRCC Region 6)       0.0       0.0       93         El Paso-Juarez Area TX NM MX (TNRCC Region 6)       ***       63         14100465       EPNG Building       157       136       *       ***       24         1410045S       UTEP 12       142       136       5.1       3.7       97         0060001L       Techno MX       124       115       *       ***       54         1410044L       Chamizal       124       114       0.0       0.0       99         0130007S       Sunland Park NM       126       115       *       ***       54         1410044L       Chamizal       124       114       0.0       0.0       99         0130008S       La Union NM       117       10       0.0       0.0       99         140027S       Downtown 6       112       108       0.0       0.0       97				· · · ·							
113004SS       Dallas N 5       123       121       0.0       1.8       97         1210054L       Colony       120       110       0.0       1.0       97         130055L       Bonnieview       100       90       0.0       0.0       93         EI Paso-Juarez Area TX NM MX (TNRCC Region 6)       0.00       0.0       93         EI Paso-Juarez Area TX NM MX (TNRCC Region 6)       ***       63         0060004L       Advance MX       218       164       *       ***         1410046S       EPNG Building       157       136       *       ***       24         1410045L       Techno MX       124       115       *       *tis       54         1410041L       Techno MX       123       118       0.0       1.1       92         0130008S       La Union NM       117       101       0.0       0.0       95         Guadalupe M ountains National Park (TNRCC Region 12)       2010807P       P       7       *       **       70         100305S       Manchester 1       223       125       202       17.0       97         2010807P       HRM 1       229       197       10.3       10.5       <											
1210054L       Colony       120       10       0.0       1.0       97         130055L       Bonnieview       100       90       0.0       0.0       93         El Paso-Juarez Area TX NM       MX (TNCC Region 6)       0060004L       4dvance MX       218       164       ***       63         1410046S       EPNG Building       157       136       *       ***       24         1410045S       UTEP 12       142       136       5.1       3.7       97         0060001L       Techno MX       124       115       *       *1.3       49         0130017S       Sunland Park NM       126       115       *       ***       54         14100285       East 30       123       118       0.0       1.1       92         01300085       La Union NM       117       101       0.0       0.0       99         14100285       East 30       122       108       0.0       0.0       95         Guadalupe Mountains National Park (TNRCC Region 12)       20       10801P       HRM 7       243       185       12.2       17.0       97         2010801P       HRM 7       243       185       12.2	A DO DO DO DO DO DO										
EI         Paso-Juarez         Area         TX         M         MX (TNRCC Region 6)         ***         63           0060004L         Advance MX         218         164         *         ***         63           14100455         EPNG Building         157         136         *         ****         24           14100455         EPNG Building         157         136         *         ****         54           1410044L         Chamizal         124         115         *         ****         54           1410044L         Chamizal         123         118         0.0         1.1         92           0130017S         Downtown 6         112         108         0.0         0.0         99           1410027S         Downtown 6         112         108         0.0         0.0         99           140027S         Downtown 6         112         108         0.0         0.0         99           140027S         Downtown 6         112         108         0.0         0.0         99           2010807P         HRM 1         229         170         10.5         96           2010807P         HRM 1         220         176 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>											
0060004L       Advance MX       218       164       *       ***       63         14100465       EPNG Building       157       136       *       ****       24         1410037S       Sunland Park NM       126       115       *       ****       54         1410047S       Sunland Park NM       126       115       *       ****       54         1410044L       Chamizal       124       114       0.0       *0.0       87         1410044L       Chamizal       124       114       0.0       *0.0       87         1410045       East 30       123       118       0.0       1.1       92         0130005S       La Union NM       117       101       0.0       0.0       99         1410027S       Downtown 6       112       108       0.0       0.0       95         Guadalupe       Mountains National Park (TNRCC Region 12)       ***       70       ***       70         Pdouston-Calveston-Brazoria       CMSA       (TNRCC Region 12)       ****       70       ****       70         2010807P       HRM 7       243       185       12.2       17.0       97         2010807P						0.0	93				
1410046S       EPNG Building       157       136       *       ****       24         1410037S       UTEP 12       142       136       5.1       3.7       97         0060001L       Techno MX       124       115       *       *1.3       49         0130017S       Sunland Park NM       126       115       *       ****       54         1410044L       Chamizal       124       114       0.0       *0.0       87         1410028       East 30       123       118       0.0       0.1       92         01300085       La Union NM       117       101       0.0       0.0       95         Guadalupe Mountains National Park (TNRCC Region 6)       1090101G       Culberson County       80       77       *       ***       70         Houston-Galveston-Brazoria       CMSA (TNRCC Region 12)       0.0       97       97         2010801P       HRM 1       229       197       10.3       10.5       96         20110345       Houston East 1       225       202       6.8       9.4       88         20110351       Clinton       2020       176       8.2       12.9       97         201	El Paso-J	uarez Area TX N									
14100375       UTEP 12       142       136       5.1       3.7       97         0060001L       Techno MX       124       115       *       *1.3       49         01300175       Sunland Park NM       126       115       *       ****       54         14100285       East 30       123       118       0.0       *0.0       87         14100275       Downtown 6       112       108       0.0       0.0       99         10901016       Culberson County       80       77       *       **       70         Houston-Galveston-Brazoria CMSA (TNRCC Region 12)         2010807P       HRM 7       243       185       12.2       17.0       97         2010807D       HRM 1       229       197       10.3       10.5       96         2011035L       Clinton       220       176       8.2       12.9       97											
0060001L         Techno MX         124         115         *         *1.3         49           01300175         Sunland Park NM         126         115         *         *****         54           1410044L         Chamizal         124         114         0.0         *0.0         87           14100285         East 30         123         118         0.0         1.1         92           01300085         La Union NM         117         101         0.0         0.0         99           14100245         Downtown 6         112         108         0.0         0.0         95           Guadalupe         Mountains National Park (TNRCC Region 6)         1090101G         Culberson County         80         77         *         ***         70           Houston-Galveston-Brazoria         CMSA (TNRCC Region 12)         70         97         2010801P         HRM 1         229         197         10.3         10.5         96           20110345         Houston East 1         225         202         6.8         9.4         88           20100525         Manchester 22         218         160         8.7         8.7         80           20100451         HRM 3											
0130017S       Sunland Park NM       126       115       *       *****       54         1410044L       Chamizal       124       114       0.0       *0.0       87         141002B       East 30       123       118       0.0       1.1       92         0130008S       La Union NM       117       101       0.0       0.0       99         141002TS       Downtown 6       112       108       0.0       0.0       95         Guadalupe       Mountains National Park (TNRCC Region 6)       1090101G       Culberson County       80       77       *       ***       70         Houston-Galveston-Brazoria       CMSA (TNRCC Region 12)       97       10.3       10.5       96         2011035L       Clinton       220       148       6.2       7.9       97         2010062L       Monroe       220       148       6.2       7.9       97         2010059S       Manchester 22       218       160       8.7       8.7       80         2010059L       HRM 3       209       187       10.4       14.1       95         2010059S       Manchester 22       218       160       8.7       7.7       87<					*						
14100285       East 30       123       118       0.0       1.1       92         01300085       La Union NM       117       101       0.0       0.0       99         14100275       Downtown 6       112       108       0.0       0.0       95         Guadalupe       Mountains National Park (TNRCC Region 6)       1090101G       Culberson County       80       77       *       ***       70         Houston-Galveston-Brazoria       CMSA (TNRCC Region 12)       2010807P       HRM 7       243       185       12.2       17.0       97         2010807P       HRM 1       225       202       6.8       9.4       88       20110351       Clinton       220       176       8.2       12.9       97         20100621       Monroe       220       148       6.2       7.9       97         20100595       Manchester 22       218       160       8.7       8.7       80         20103031P       HRM 3       209       187       10.4       14.1       195         2011037L       Crawford       208       154       10.1       10.1       97         20100245       Aldine 8       200       156       9.4 <td>The second second</td> <td></td> <td></td> <td></td> <td>*</td> <td></td> <td></td>	The second				*						
0130008S       La Union NM       117       101       0.0       0.0       99         1410027S       Downtown 6       112       108       0.0       0.0       95         Guadalupe Mountains National Park (TNRCC Region 6)       1090101G [ Culberson County       80       77       *       ***       70         Houston-Galveston-Brazoria CMSA (TNRCC Region 12)       2010807P       HRM 7       243       185       12.2       17.0       97         2010801P       HRM 1       229       197       10.3       10.5       96         2011031L       Clinton       220       174       8.7       8.7       80         2010808P       HRM 3       209       187       10.4       14.1       95         2010804P       HRM 4       208       165       4.6       8.5       88         2010804P       HRM 8       200       156       9.4       14.6       85 <td></td> <td></td> <td></td> <td></td> <td>1294.010762</td> <td></td> <td></td>					1294.010762						
1410027S         Downtown 6         112         108         0.0         0.0         95           Guadalupe Mountains National Park (TNRCC Region 6)           1090101G         Culberson County         80         77         *         **         70           Houston-Galveston-Brazoria CMSA (TNRCC Region 12)           2010801P         HRM 7         243         185         12.2         17.0         97           2010801P         HRM 1         229         197         10.3         10.5         96           2011034S         Houston East 1         225         202         6.8         9.4         88           2011035L         Clinton         220         176         8.2         12.9         97           20100525         Manchester 22         218         160         8.7         8.7         80           20100803P         HRM 3         209         187         10.4         14.1         95           2010804P         HRM 4         208         165         4.6         8.5         88           2010804P         HRM 8         202         171         7.2         11.2         97           2010805P         HRM 8         202         <				2011/03110001							
Guadalupe Mountains National Park (TNRCC Region 6)           1090101G         Culberson County         80         77         *         ****         70           Houston-Galveston-Brazoria CMSA (TNRCC Region 12)           2010807P         HRM 7         243         185         12.2         17.0         97           2010801P         HRM 1         229         197         10.3         10.5         96           2011034S         Houston East 1         225         202         6.8         9.4         88           2011035L         Clinton         220         176         8.2         12.9         97           2010062L         Monroe         220         148         6.2         7.9         97           2010083P         HRM 3         209         187         10.4         14.1         95           2010804P         HRM 4         208         165         4.6         8.5         88           2010808P         HRM 8         202         171         7.2         11.2         97           2010045L         Aldine 8         200         156         9.4         14.6         85           2010045L         Nayside         183         18											
1090101G       Culberson County       80       77       *       ***       70         Houston-Galveston-Brazoria       CMSA (TNRCC Region 12)						0.0	35				
Houston-Galveston-Brazoria CMSA (TNRCC Region 12)           2010807P         HRM 7         243         185         12.2         17.0         97           2010801P         HRM 1         229         197         10.3         10.5         96           2011034S         Houston East 1         225         202         6.8         9.4         88           2011035L         Clinton         220         176         8.2         12.9         97           2010062L         Monroe         220         148         6.2         7.9         97           2010059S         Manchester 22         218         160         8.7         8.7         80           2010803P         HRM 3         209         187         10.4         14.1         95           2010804P         HRM 4         208         154         10.1         10.1         97           2010808P         HRM 8         202         171         7.2         11.2         97           2010024S         Aldine 8         200         156         9.4         14.6         85           2011003S         Deer Park 18         198         143         2.3         7.7         87           1670	1090101G	Culberson County	80		*	**	70				
2010807P       HRM 7       243       185       12.2       17.0       97         2010801P       HRM 1       229       197       10.3       10.5       96         2011034S       Houston East 1       225       202       6.8       9.4       88         2011035L       Clinton       220       176       8.2       12.9       97         2010052V       Monroe       220       148       6.2       7.9       97         2010059S       Manchester 22       218       160       8.7       8.7       80         2010803P       HRM 3       209       187       10.4       14.1       95         2010804P       HRM 4       208       154       10.1       10.1       97         2010804P       HRM 8       202       171       7.2       11.2       97         2010804P       HRM 8       202       171       7.2       11.2       97         2010804P       HRM 8       202       171       7.2       11.2       97         2010024S       Aldine 8       200       156       9.4       14.6       85         2010045D       Galveston Airport       198       134 <td>Houston-</td> <td>Galveston-Braz</td> <td>oria CMSA</td> <td></td> <td>egion 12)</td> <td></td> <td></td>	Houston-	Galveston-Braz	oria CMSA		egion 12)						
2011034S       Houston East 1       225       202       6.8       9.4       88         2011035L       Clinton       220       176       8.2       12.9       97         2010062L       Monroe       220       148       6.2       7.9       97         2010059S       Manchester 22       218       160       8.7       8.7       80         2010803P       HRM 3       209       187       10.4       14.1       95         2010804P       HRM 4       208       165       4.6       8.5       88         2010804P       HRM 8       202       171       7.2       11.2       97         2010024S       Aldine 8       200       156       9.4       14.6       85         2010024S       Aldine 8       200       156       9.4       14.6       85         2010035       Deer Park 18       198       143       2.3       7.7       87         1670014S       Galveston Airport       198       134       *       ****       25         2010047L       Lang       183       159       6.7       8.5       90         1670056P       TCLMCM 34th St       186 <t< td=""><td>2010807P</td><td>HRM 7</td><td>243</td><td>185</td><td>12.2</td><td></td><td></td></t<>	2010807P	HRM 7	243	185	12.2						
2011035L       Clinton       220       176       8.2       12.9       97         2010062L       Monroe       220       148       6.2       7.9       97         2010059S       Manchester 22       218       160       8.7       8.7       80         2010803P       HRM 3       209       187       10.4       14.1       95         2011037L       Crawford       208       165       4.6       8.5       88         2010804P       HRM 4       208       154       10.1       10.1       97         2010804P       HRM 8       202       171       7.2       11.2       97         2010024S       Aldine 8       200       156       9.4       14.6       85         2010024S       Deer Park 18       198       143       2.3       7.7       87         1670014S       Galveston Airport       198       134       *       ****       25         2010046L       N Wayside       183       159       6.7       8.5       90         1670056P       TCLMCM 34th St       186       136       *       ****       33         2010051L       Croquet       176 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>											
2010062L       Monroe       220       148       6.2       7.9       97         2010059S       Manchester 22       218       160       8.7       8.7       80         2010803P       HRM 3       209       187       10.4       14.1       95         2011037L       Crawford       208       165       4.6       8.5       88         2010804P       HRM 4       208       154       10.1       10.1       97         2010024S       Aldine 8       202       171       7.2       11.2       97         2010024S       Aldine 8       200       156       9.4       14.6       85         20110035       Deer Park 18       198       134       *       ****       25         2010046L       N Wayside       183       181       6.3       9.3       96         2010047L       Lang       183       159       6.7       8.5       90         1670056P       TCLMCM 34th St       186       136       *       ****       33         2010051L       Croquet       176       161       10.2       8.9       88         0710901P       HRM 11       173       141											
2010803P       HRM 3       209       187       10.4       14.1       95         2011037L       Crawford       208       165       4.6       8.5       88         2010804P       HRM 4       208       154       10.1       10.1       97         2010808P       HRM 8       202       171       7.2       11.2       97         2010808P       HRM 8       200       156       9.4       14.6       85         2011003S       Deer Park 18       198       143       2.3       7.7       87         1670014S       Galveston Airport       198       134       *       ****       25         2010046L       N Wayside       183       181       6.3       9.3       96         2010047L       Lang       183       159       6.7       8.5       90         1670056P       TCLMCM 34th St       186       136       *       ****       33         2010029S       Harris NW 26       176       161       10.2       8.9       88         0710901P       HRM 11       173       141       6.1       7.0       98         2010065S       Texas Commerce       160 <td< td=""><td>2010062L</td><td>Monroe</td><td>220</td><td>148</td><td>6.2</td><td>7.9</td><td>97</td></td<>	2010062L	Monroe	220	148	6.2	7.9	97				
2011037L       Crawford       208       165       4.6       8.5       88         2010804P       HRM 4       208       154       10.1       10.1       97         2010808P       HRM 8       202       171       7.2       11.2       97         2010808P       HRM 8       200       156       9.4       14.6       85         2011003S       Deer Park 18       198       143       2.3       7.7       87         1670014S       Galveston Airport       198       134       *       ****       25         2010046L       N Wayside       183       181       6.3       9.3       96         201005FP       TCLMCM 34th St       186       136       *       ****       33         2010051L       Croquet       178       152       6.7       13.0       75         2010029S       Harris NW 26       176       161       10.2       8.9       88         0710901P       HRM 11       173       141       6.1       7.0       98         2010065S       Texas Commerce       160       139       *       ****       24         0710900P       HRM 10       159       <											
2010804P       HRM 4       208       154       10.1       10.1       97         2010808P       HRM 8       202       171       7.2       11.2       97         2010024S       Aldine 8       200       156       9.4       14.6       85         2011003S       Deer Park 18       198       143       2.3       7.7       87         1670014S       Galveston Airport       198       134       *       ****       25         2010046L       N Wayside       183       181       6.3       9.3       96         2010047L       Lang       183       159       6.7       8.5       90         1670056P       TCLMCM 34th St       186       136       *       ****       33         2010051L       Croquet       178       152       6.7       13.0       75         2010055S       Texas Commerce       160       139       *       ****       24         0710901P       HRM 10       159       158       3.1       6.5       96         0391003S       Clute 11       134       129       3.7       3.7       82         1671002S       Texas City 10       126	2011037L										
2010024S       Aldine 8       200       156       9.4       14.6       85         2011003S       Deer Park 18       198       143       2.3       7.7       87         1670014S       Galveston Airport       198       134       *       ****       25         2010046L       N Wayside       183       181       6.3       9.3       96         2010047L       Lang       183       181       6.3       9.3       96         201005F       TCLMCM 34th St       186       136       *       ****       33         2010051L       Croquet       178       152       6.7       13.0       75         2010029S       Harris NW 26       176       161       10.2       8.9       88         071090P       HRM 11       173       141       6.1       7.0       98         2010065S       Texas Commerce       160       139       *       ****       24         071090P       HRM 10       159       158       3.1       6.5       96         0391003S       Clute 11       134       129       3.7       3.7       82       1671002S       Texas City 10       126       97	2010804P		208	154	10.1	10.1	97				
2011003S       Deer Park 18       198       143       2.3       7.7       87         1670014S       Galveston Airport       198       134       *       ****       25         2010046L       N Wayside       183       181       6.3       9.3       96         2010047L       Lang       183       181       6.3       9.3       96         2010047L       Lang       183       159       6.7       8.5       90         1670056P       TCLMCM 34th St       186       136       *       ****       33         2010029S       Harris NW 26       176       161       10.2       8.9       88         0710901P       HRM 11       173       141       6.1       7.0       98         2010055S       Texas Commerce       160       139       *       ****       24         0710900P       HRM 10       159       158       3.1       6.5       96         0391003S       Clute 11       134       129       3.7       3.7       82         1671002S       Texas City 10       126       97       1.1       3.2       91         Longview-Marshall MSA (TNRCC Region 5)       123											
1670014S       Galveston Airport       198       134       *       ****       25         2010046L       N Wayside       183       181       6.3       9.3       96         2010047L       Lang       183       159       6.7       8.5       90         1670056P       TCLMCM 34th St       186       136       *       ****       33         2010051L       Croquet       178       152       6.7       13.0       75         2010029S       Harris NW 26       176       161       10.2       8.9       88         0710901P       HRM 11       173       141       6.1       7.0       98         2010055S       Texas Commerce       160       139       *       ****       24         0710900P       HRM 10       159       158       3.1       6.5       96         0391003S       Clute 11       134       129       3.7       3.7       82         1671002S       Texas City 10       126       97       1.1       3.2       91         Longview-Marshall MSA (TNRCC Region 5)         1830001S       Longview 19       129       123       1.1       *1.7       84											
2010047L       Lang'       183       159       6.7       8.5       90         1670056P       TCLMCM 34th St       186       136       *       ****       33         2010051L       Croquet       178       152       6.7       13.0       75         2010029S       Harris NW 26       176       161       10.2       8.9       88         0710901P       HRM 11       173       141       6.1       7.0       98         2010055S       Texas Commerce       160       139       *       ****       24         0710900P       HRM 10       159       158       3.1       6.5       96         0391003S       Clute 11       134       129       3.7       3.7       82         1671002S       Texas City 10       126       97       1.1       3.2       91         Longview-Marshall       MSA (TNRCC Region 5)       123       1.1       *1.7       84         San Antonio       MSA (TNRCC Region 13)       0290032S       North 7       107       96       0.0       0.0       94         0290032S       Northwest 23       98       95       0.0       0.0       92         Vict	1670014S	Galveston Airport	198	134	*	***	25				
1670056P       TCLÍMCM 34th St       186       136       *       ****       33         2010051L       Croquet       178       152       6.7       13.0       75         2010029S       Harris NW 26       176       161       10.2       8.9       88         0710901P       HRM 11       173       141       6.1       7.0       98         2010055S       Texas Commerce       160       139       *       ****       24         0710900P       HRM 10       159       158       3.1       6.5       96         0391003S       Clute 11       134       129       3.7       3.7       82         1671002S       Texas City 10       126       97       1.1       3.2       91         Longview-Marshall       MSA (TNRCC Region 5)       1830001S       Longview 19       129       123       1.1       *1.7       84         San Antonio       MSA (TNRCC Region 13)       0290032S       North 7       107       96       0.0       0.0       94         0290032S       Northwest 23       98       95       0.0       0.0       92         Victoria       MSA (TNRCC Region 14)       5       94											
2010051L       Croquet       178       152       6.7       13.0       75         2010029S       Harris NW 26       176       161       10.2       8.9       88         0710901P       HRM 11       173       141       6.1       7.0       98         0210065S       Texas Commerce       160       139       *       ****       24         0710900P       HRM 10       159       158       3.1       6.5       96         0391003S       Clute 11       134       129       3.7       3.7       82         1671002S       Texas City 10       126       97       1.1       3.2       91         Longview-Marshall       MSA (TNRCC Region 5)       123       1.1       *1.7       84         San Antonio       MSA (TNRCC Region 13)       0290036S       North 7       107       96       0.0       0.0       94         0290032S       Northwest 23       98       95       0.0       0.0       92         Victoria       MSA (TNRCC Region 14)       14       14       14       14       15       15					0./ *						
0710901P         HRM 11         173         141         6.1         7.0         98           2010065S         Texas Commerce         160         139         *         ****         24           0710900P         HRM 10         159         158         3.1         6.5         96           0391003S         Clute 11         134         129         3.7         3.7         82           1671002S         Texas City 10         126         97         1.1         3.2         91           Longview-Marshall         MSA (TNRCC Region 5)         1830001S         Longview 19         129         123         1.1         *1.7         84           San Antonio         MSA (TNRCC Region 13)         0290036S         North 7         107         96         0.0         0.0         94           0290032S         Northwest 23         98         95         0.0         0.0         92           Victoria         MSA (TNRCC Region 14)         5         5         5         5         5	2010051L	Croquet	178	152			75				
2010065S       Texas Commerce       160       139       *       ****       24         0710900P       HRM 10       159       158       3.1       6.5       96         0391003S       Clute 11       134       129       3.7       3.7       82         1671002S       Texas City 10       126       97       1.1       3.2       91         Longview-Marshall       MSA (TNRCC Region 5)       123       1.1       *1.7       84         San Antonio       MSA (TNRCC Region 13)       0290036S       North 7       107       96       0.0       0.0       94         0290032S       Northwest 23       98       95       0.0       0.0       92         Victoria       MSA (TNRCC Region 14)       14)       14       14       14											
0710900P         HRM 10         159         158         3.1         6.5         96           0391003S         Clute 11         134         129         3.7         3.7         82           1671002S         Texas City 10         126         97         1.1         3.2         91           Longview-Marshall MSA (TNRCC Region 5)         129         123         1.1         *1.7         84           San Antonio MSA (TNRCC Region 13)         0290036S         North 7         107         96         0.0         0.0         94           0290032S         Northwest 23         98         95         0.0         0.0         92           Victoria MSA (TNRCC Region 14)         5         5         5         5         5											
1671002S       Texas City 10       126       97       1.1       3.2       91         Longview-Marshall MSA (TNRCC Region 5)         1830001S       Longview 19       129       123       1.1       *1.7       84         San Antonio MSA (TNRCC Region 13)         0290036S       North 7       107       96       0.0       0.0       94         0290032S       Northwest 23       98       95       0.0       0.0       92         Victoria MSA (TNRCC Region 14)	0710900P	HRM 10	159		3.1	6.5	96				
Longview-Marshall MSA (TNRCC Region 5)           1830001S         Longview 19         129         123         1.1         *1.7         84           San Antonio MSA (TNRCC Region 13)         02900365         North 7         107         96         0.0         0.0         94           0290032S         Northwest 23         98         95         0.0         0.0         92           Victoria MSA (TNRCC Region 14)         107         107         96         0.0         0.0         94											
1830001S         Longview 19         129         123         1.1         *1.7         84           San Antonio MSA (TNRCC Region 13)         0290036S         North 7         107         96         0.0         0.0         94           0290032S         Northwest 23         98         95         0.0         0.0         92           Victoria MSA (TNRCC Region 14)					1.1	3.2	91				
San Antonio MSA (TNRCC Region 13)           02900365         North 7         107         96         0.0         0.0         94           0290032S         Northwest 23         98         95         0.0         0.0         92           Victoria MSA (TNRCC Region 14)	18300015	narsnall MSA (TNR			11	*1 7	84				
0290036S         North 7         107         96         0.0         0.0         94           0290032S         Northwest 23         98         95         0.0         0.0         92           Victoria MSA (TNRCC Region 14)					1.1	1.7	70				
0290032S Northwest 23 98 95 0.0 0.0 92 Victoria MSA (TNRCC Region 14)					0.0	0.0	94				
Victoria MSA (TNRCC Region 14)											
4690003S   Victoria 87   106   99   0.0   **   85	Victoria N	ASA (TNRCC Reg	ion 14)								
	4690003S	Victoria 87	106	99	0.0	**	85				

Table 3. Ozone Summary 1992

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Private monitoring site (at end of AIRS number) State monitoring site (at end of AIRS number)

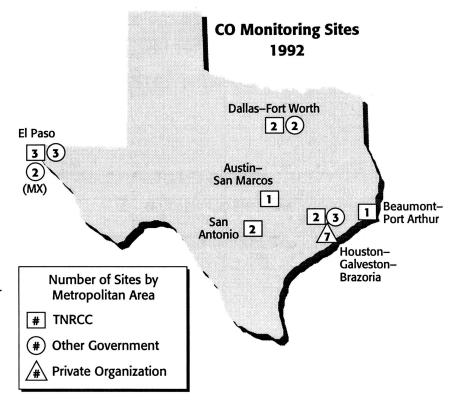
Local governmental agency monitoring site (at end of AIRS number) P Air pollution concentration required to exceed the NAAQS S Based on complete days during ozone season according to EPA convention ٠

Expected number of days with highest one-hour concentration of 125 ppb or more; annual average must be 1.1 or more days per year over a three-year period to exceed the standard Each \* indicates one year not meeting EPA completeness criteria; not valid for NAAQS comparison ÷

\*

#### **Carbon Monoxide**

Carbon monoxide is produced by the incomplete combustion of carbon-containing fuels, most notably by automotive engines and power plants. During 1992, carbon monoxide was continuously monitored at 26 sites in Texas. It also was measured by Mexico across the border from El Paso. These sites are displayed in the adjacent map. Two standards have been established for carbon monoxide. To violate one of these standards, two or more one-hour averages of 35.5 ppm or greater or two or more eight-hour averages of 9.5 ppm or greater must be measured at one site during a calendar year. The eight-hour standard has been exceeded periodically in El Paso during the winter months when very stable atmospheric



conditions exist. The onehour standard for carbon monoxide has never been exceeded in Texas.

Table 4 provides a summary of 1992 carbon monoxide measurements. The table listings are grouped alphabetically by metropolitan area and arranged in descending order from the highest eight-hour average.

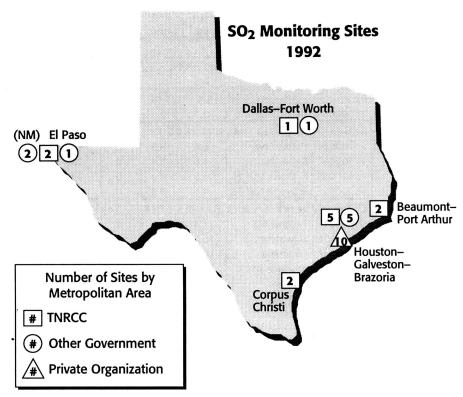
		avie	<del>.</del>	Juii	mary	1992		
			🕈 8-Hr			1-Hr		
AIRS	Site Name	High	2nd	Exc	High	2nd	Exc	Percent
	e	(ppm)	(ppm)	(#)	(ppm)	(ppm)	(#)	Completeness
NAAQS 🔳			9.5			35.5		5 A
Austin-S	an Marcos MS	A (TNR	CC Reg	ion 11	)			
4530017S	Downtown 32	4.3	3.7	0	6.9	6.0	0	85
Beaumon	t-Port Arthur	MSA (1	INRCC	Region	10)			
	Beaumont 2	2.9	2.4	0	4.8	3.9	0	94
Dallas-F	ort Worth CMS	A (TNR	CC Reg	ion 4)				
1310053L		6.4	5.5	0	9.4	8.5	0	93
1130069L		5.6	5.4	0	7.8	7.5	0	93
4391003S	Ft Worth Dtn 16	4.5	4.0	0	5.9	5.6	0	80
4391002S	Ft Worth NW 13	4.1	3.8	0	7.7	6.5	0	92
El Paso-J	luarez Area TX	NM M	X (TNR	CC Reg	(ion 6)			_
0060001L	Techno MX	11.4	8.8	0	16.0	16.0	0	82
1410027S	Downtown 6	10.5	9.3	2	17.3	16.0	0	93
1410044L	Chamizal	10.1	9.9	3	21.3	17.7	0	72
0060004L	Advance MX	8.9	7.7	0	16.2	14.8	0	79
1410002L	Tillman	8.6	7.7	0	17.5	14.4	0	97
1410028S	East 30	8.4	7.0	0	13.2	12.3	0	87
1410037S	UTEP 12	6.6	6.4	0	11.6	10.9	0	86
1410029L	Ivanhoe	4.6	4.5	0	8.2	8.2	0	93
Houston-	-Galveston-Br	azoria	CMSA (	TNRCC	Regio	n 12)		
2010047L	Lang	8.6	8.3	0	15.9	13.8	0	93
2010024S	Aldine 8	8.1	8.1	0	10.4	10.1	0	88
2011034S	East 1	7.2	6.6	0	12.4	12.1	0	88
2011035L	Clinton	6.2	4.7	0	8.0	6.8	0	95
2010803P	HRM 3	5.9	5.2	0	8.1	7.0	0	95
2010801P	HRM 1	5.8	5.2	0	9.2	7.9	0	96
2011037L	Crawford	5.1	5.1	0	8.8	8.3	0	94
2010807P	HRM 7	3.7	3.0	0	5.4	5.3	0	97
2010808P	HRM 8	3.0	2.5	0	4.3	3.7	0	98
2010804P	HRM 4	2.4	2.3	0	3.3	3.0	0	96
0710901P	HRM 11	1.0	0.9	0	2.0	1.8	0	98
0710900P	HRM 10	0.9	0.8	0	1.5	1.2	0	96
San Anto	nio MSA (TNR	CC Reg	ion 13)	1	r	1		1
0290046S	Downtown 27	7.1	5.7	0	12.7	10.8	0	93
0290036S	North 7	4.5	4.1	0	13.5	9.1	0	87

#### Table 4. CO Summary 1992

Local governmental agency monitoring site (at end of AIRS number)
P Private monitoring site (at end of AIRS number)
S State monitoring site (at end of AIRS number)
Air pollution concentration required to exceed the NAAQS
Running average, truncated to tenths
# Number of exceedances

#### Sulfur Dioxide

Sulfur dioxide is produced by burning sulfurcontaining fuels, smelting metallic ores containing sulfur, and removing sulfur from fuels. Sulfur dioxide was monitored continuously at 29 TNRCC, other government and private sites in Texas during 1992. In addition, two sites were operated by New Mexico across the state line from El Paso. All are shown in the adjacent map. There are three sulfur dioxide standards. Sulfur dioxide violates the short-term standard if it averages 145 ppb or more during a 24hour period (from midnight to midnight) more than once a year. The annual average level of sulfur dioxide must be 35 ppb or higher to exceed the long-term standard. A three-hour average sulfur dioxide level must be 550 ppb or higher more than once during a calendar year to violate the secondary standard. There is also a secondary standard of 500 ppb for a three-hour average that



is intended to protect public welfare from any known or anticipated adverse effects of the pollutant at the specified level. The Houston, Beaumont-Port Arthur, El Paso, and Galveston-Texas City areas have historically shown the highest measured sulfur dioxide levels in the state. Table 5 shows a summary of sulfur dioxide measurements during 1992. The table listings are grouped alphabetically by metropolitan area and arranged in descending order from the highest three-hour average.

		Iavie		<u>7</u> 5u	T			T	
			3-Hr 💠			24-Hr 💠		Annual	
AIRS	Site Name	High (ppb)	2nd (ppb)	Exc (‡)	High (ppb)	2nd (ppb)	Exc (‡)	Average (ppb)	Percent Completeness
NAAQS	0		550			145		35	
	-Port Arthur MSA	(TNRCC	Region	10)				•	
2450009S	Beaumont 2	207	107	o	59	45	0	5	94
2450011S	Port Arthur 28	147	103	o	57	43	0	4	89
Corpus Ch	risti MSA (TNRCC I	Region	14)						
3550025S	West 4	120	107	o	42	20	0	2	85
3550026S	Tuloso 21	57	57	0	16	14	0	1	94
Dallas-Fo	rt Worth CMSA (TN	RCC Re	gion 4)						
1130069L	Hinton	20	20	0	10	10	0	2	93
4391002S	Ft Worth NW 13	20	20	0	13	13	0	3	88
	arez Area TX NM		RCC Res	vion 6	1				
1300017S	Sunland Park NM	354	267	0	88	88	0	16	96
14100375	UTEP 12	300	273	0	64	54	o	12	84
14100275	Downtown 6	293	240	0	50	48	0	10	77
1410033L	Kern	233	227	0	57	56	0	11	94
0130008S	La Union NM	92	81	0	20	16	0	3	89
	Galveston-Brazoria		(TNRC	C Regi	on 12)				•
2011035L	Clinton	373	110	o	89	31	o	6	91
2010803P	HRM 3	177	166	0	71	53	0	6	95
2010059S	Manchester 22	127	117	0	42	40	o	6	78
1671002S	Texas City 10	120	103	0	59	39	0	4	94
2010801P	HRM 1	101	89	0	27	24	0	5	96
2011034S	East 1	87	80	0	24	19	0	4	89
1670057P	TCLMCM Seawall	79	50	0	22	19	0	♦ 4	33
2011037L	Crawford	77	60	0	33	32	0	7	86
2010807P	HRM 7	75	62	0	34	21	0	2	97
1670055P	TCLMCM Ave. A	64	47	0	26	18	0	◆ 2	33
1670056P	TCLMCM 34th St.	62	53	0	25	20	0	♦ 2	33
2010046L	North Wayside	57	53	0	19	17	0	5	90
2010808P	HRM 8	57	26	0	10	10	0	1	97
2010004S	Baytown 24	53	50	0	26	23	0	8	87
2010804P	HRM 4	52	48	0	10	10	0	1	97
2010062L	Monroe	50	43	0	19	18	0	4	93
2011003S	Deer Park 18	50	33	0	11	10	0	1	85
2010051L	Croquet	43	27	0	13	13	0	♦ 3	67
0710901P	HRM 11	23	23	0	8	5	0	<1	98
0710900P	HRM 10	21	16	0	5	4	0	<1	96

#### Table 5. SO<sub>2</sub> Summary 1992

L Local governmental agency monitoring site (at end of AIRS number)
P Private monitoring site (at end of AIRS number)
S State monitoring site (at end of AIRS number)
Air pollution concentration required to exceed the NAAQS
Block averages, rounded to hundredths
Number of exceedances; must be 2 or more to violate the NAAQS
Less than 75% completeness; not valid for NAAQS comparison

#### Nitrogen Dioxide

Although there are several oxides of nitrogen produced by high temperature fuel combustion in air, the only standard is for an annual average of nitrogen dioxide. The annual average level of nitrogen dioxide must be 54 ppb or higher to violate the standard. This annual standard has never been exceeded in Texas. In fact, the highest annual average has been no more than 31 ppb in Houston and El Paso during the past five years. Continuous nitrogen dioxide monitors were operated by the TNRCC, and other government and private organizations at 26 sites in the Austin, Beaumont-Port Arthur, Dallas-Fort Worth, El Paso, and Houston areas during 1992, as shown in the adjacent map.

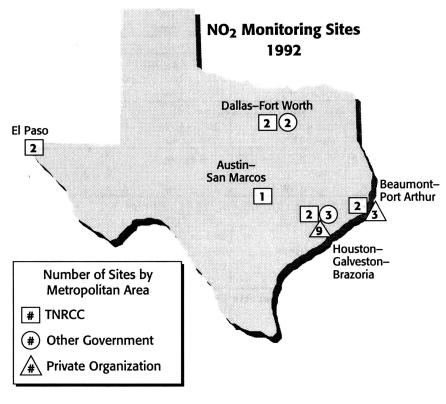


Table 6 shows a summary of nitrogen dioxide measurements during 1992. The table listings are grouped alphabetically by metropolitan area and arranged in descending order from the highest one-hour average.

		1-	Hr	Annual	
AIRS	Site Name	High	2nd	Average	Percent
		(ppb)	(ppb)	(ppb)	Completeness
NAAQS				54	
Austin-Sa	Marcos MSA (T	NRCCI	Region	11)	
4530017S	Downtown 32	80	80	♦ 17	66
Beaumont-	Port Arthur MS/	A (TNR	CC Regi	on 10)	
2450101P	SETRPC 40	127	117	5	86
3611001S	West Orange 9	80	60	12	98
2450102P	SETRPC 43	70	60	10	90
2450009S	Beaumont 2	50	50	8	97
3611100P	SETRPC 42	49	47	8	98
Dallas-For	t Worth CMSA (1	NRCC	Region	4)	
1130055L	Bonnieview	260	250	12	89
1130069L	Hinton	90	90	21	90
4391002S	Ft Worth NW 13	80	80	14	89
1130045S	Dallas N 5	70	70	14	86
El Paso-Ju	arez Area TX NM	MX (T	NRCC F	(egion 6)	
1410027S	Downtown 6	230	160	31	84
1410037S	UTEP 12	130	130	21	90
Houston-O	alveston-Brazon	ia CMS	A (TNR	CC Regio	on 12)
2011034S	East 1	360	110	17	87
2011035L	Clinton	140	110	23	82
2011037L	Crawford	110	100	28	81
2010047L	Lang	100	90	♦ 22	33
2010024S	Aldine 8	70	70	♦ 15	33
2010801P	HRM 1	$\mathbf{X}$	$\mathbf{X}$	27	95
2010803P	HRM 3	X	$\mathbf{X}$	22	95
2010807P	HRM 7	$\mathbf{X}$	$\mathbf{X}$	19	98
2010804P	HRM 4	X	X	17	96
2010808P	HRM 8	$\mathbf{X}$	$\mathbf{X}$	13	97
0710901P	HRM 11	$\mathbf{X}$	$\mathbf{X}$	12	98
0710900P	HRM 10	$\mathbf{X}$	$\mathbf{X}$	8	95
1670056P	TCLMCM 34th St.	$\mathbf{X}$	$\mathbf{X}$	8	87
1670057P	TCLMCM Seawall	X	X	♦ 8	64

#### Table 6. NO<sub>2</sub> Summary 1992

Local governmental agency monitoring site (at end of AIRS number)
 Private monitoring site (at end of AIRS number)
 S State monitoring site (at end of AIRS number)
 Air pollution concentration required to exceed the NAAQS
 ☑ Data not available

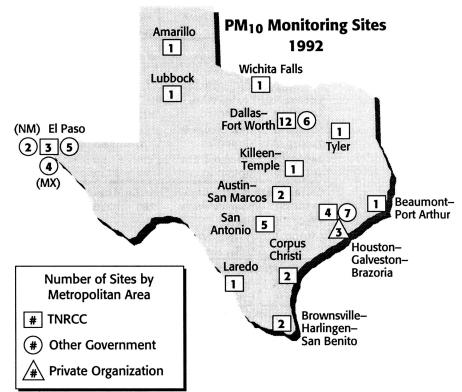
Less than 75% completeness; not valid for NAAQS comparison

#### Respirable Particulate Matter

Particulate matter in the atmosphere is produced by a wide variety of natural and man-made sources. It includes both solid and liquid particles, except for water or ice, that can be emitted directly into the air or formed by chemical reactions in the atmosphere. Respirable particulate matter, particles below about 10 microns in size, are more likely to be deposited deep in the lungs, where they present the most direct health concern.

To violate the 24-hour standard for respirable particulate matter, the expected number of exceedance days must be 1.1 days or more over a three-year period. An exceedance day is each day that a 24-hour average of 155  $\mu$ g/m<sup>3</sup> or more is measured. EPA-required calculations are used to arrive at the number of expected exceedance days to account for missing data.

To violate the annual standard, the annual average concentration must be  $51 \ \mu g/m^3$  or greater for a three-year period. Each annual average must be calculated from four complete calendar quarterly averages. For a calendar quarter to be complete, at least 75 percent of the scheduled samples must be valid.



During 1992, this pollutant was monitored by the TNRCC, and other government and private organizations at 58 sites in Texas. It was also monitored adjacent to El Paso at two sites in New Mexico and four sites in Mexico. The sampling schedules are either daily, every other day, or every sixth day, depending upon the expected probability of the site exceeding the standard. A respirable particulate matter exceedance day occurs if the 24-hour average exceeds the standard. Then, the expected exceedance days are determined from the actual number of measured exceedances with

adjustments to account for missing data according to EPA guidelines. In order to demonstrate attainment of the standard, the average annual number of expected exceedances must not exceed 1.0 day per year over a three-year period.

Table 7 provides a summary of the 1992 respirable particulate matter measurements at each monitoring site. The table listings are grouped alphabetically by metropolitan area and arranged in descending order from the highest 24-hour average.

AIRS	Site Name	24-Hr High (μg/m <sup>3</sup> )	Exp Exc	Exp Exc 1990-92 (days/yr)	Annual Average (µg/m <sup>3</sup> )	Valid Days	Percent Completeness	Valid Qtrs
NAAQS 🔳		155		*1.1	51	Days	completeness	QUIS
	MSA (TNRCC Re		L	<u></u>			L	
3750004S		32	*0.0	***	*16.8	53	87	3
	•				10.0	55	0/	5
	n Marcos MSA		-	***	21.0	60		
4530010S		78	0.0	*0.0	21.9	60	98	4
	East Austin	78	0.0	0.0	23.1	60	98	4
	t-Port Arthur N							
	Beaumont 2	108	0.0	0.0	25.7	59	97	4
	le-Harlingen-S							
0610004S	Brownsville	85	0.0	0.0	30.8	58	95	4
	San Benito	73	0.0	0.0	23.7	58	95	4
	risti MSA (TNR						1	
3550020S	Navigation	98	*0.0	*0.0	*29.9	53	87	3
3550012S		97	*0.0	**0.0	*28.2	54	89	3
	rt Worth CMSA	(TNRCC R	egion 4)	1			1	
1390006S	Midlothian 6	99	*0.0	***	27.9	49	80	3
1130018L	Morrell	91	0.0	0.0	29.5	57	93	4
1130035L	Coit	84	0.0	0.0	26.3	59	97	4
1130070S	Chalk Hill	82	0.0	**0.0	23.4	55	90	4
1130020L	Lancaster	78	0.0	0.0	22.2	57	93	4
1130057S	Boys Club	75	0.0	0.0	26.5	58	95	4
43900235	Worth Hgts	70	0.0	0.0	24.7	58	95	4
1390084S	Midlothian 84	52	0.0	**0.0	18.9	61	98	4
1390008S	Midlothian 8	52	*0.0	***	*15.9	45	74	3
1130050L	Convention	51	*0.0	**0.0	*25.9	43	70	2
4390029L	FAA	51	0.0	*0.0	19.5	56	92	4
1390007S	Midlothian 7	50	*0.0	**0.0	*17.3	48	77	3
4390060L	Geddes	47	*0.0	**0.0	*20.2	51	84	3
1390004S	Midlothian 4	47	0.0	*0.0	17.2	58	95	4
1130072S	Cedar Hill	37	*0.0	***	*19.2	23	38	2
1390011S	Midlothian 11	34	*0.0	***	*16.4	21	34	1
1390005S	Midlothian 5	30	*0.0	***	*19.0	24	39	2
	Midlothian 9	21	*0.0	***	18.7	3	5	0
	uarez TX NM M	X (TNRCC	Region 6)				1	
	Advance MX	314	10.0	**64.6	114.3	58	95	4
0060003L	Zenco MX	212	2.0	*14.2	58.3	56	92	4
0060002L	Pestalozzi MX	189	*2.0	**12.2	*58.2	50	82	3
1410002L	Tillman	166	2.0	2.1	39.9	337	92	4
1410041S	Vilas	146	0.0	0.0	43.6	59	97	4
0060001L	Techno MX	135	0.0	0.0	40.3	55	90	4
1410038L	Riverside	116	0.0	0.0	32.3	57	93	4
1410044L	Chamizal	113	*0.0	**0.0	*25.5	320	87	3
0130016S	Anthony NM	110	0.0	0.0	39.1	175	97	4
0130017S	Sunland NM	109	0.0	0.0	32.0	359	98	4
1410043S	Socorro	88	0.0	*0.0	41.0	57	93	4
1410029L	Ivanhoe	49	0.0	*0.0	22.0	59	97	4
1410010L	NE Clinic	47	0.0	0.0	21.1	59	97	4
1410045S	Lindbergh	41	0.0	0.0	22.0	58	95	4

#### Table 7. PM<sub>10</sub> Summary 1992@

Local governmental agency monitoring site (added to end of AIRS site number) Private monitoring site (added to end of AIRS site number) State monitoring site (added to end of AIRS site number) L

P

S

Air pollution concentration required to exceed the NAAQS Expected number of days over 155  $\mu$ g/m<sup>3</sup>; annual average not to exceed 1.1 days per year over a three-year \* period \*

Each \* indicates one year not meeting EPA completeness criteria; not valid for NAAQS comparison

0 Including exceptional event days when unusual, uncontrollable events occurred (primarily dust storms)

X Data not available

		24-Hr		Exp Exc	Annual		/	
AIRS	Site Name	High	Exp Exc	1990-92	Average	Valid	Percent	Valid
71110		(μg/m <sup>3</sup> )		(days/yr)	(μg/m <sup>3</sup> )	Days	Completeness	Qtrs
NAAQS 🔳		155		*1.1	51	Duys		
Houston-Galveston-Brazoria CMSA (TNRCC Region 12)								
	Pasadena	114	*0.0	***	*31.9	48	79	3
1671002S	Texas City 10	111	*0.0	***	*24.8	48	79	3
2010054L	Kress	108	0.0	*0.0	33.9	60	98	4
2011035L	Clinton	103 ·	0.0	**0.0	38.3	176	97	4
1670053L	Tx City Nessler	103	*0.0	***	*23.8	39	64	1
2010062L	Monroe	103	*0.0	**0.0	*27.5	52	85	3
2011037L	Crawford	103	0.0	0.0	29.7	57	93	4
2010803P	HRM 3	102	X	$\mathbf{X}$	34.0	$\mathbf{X}$	X	$\mathbf{X}$
2010045L	Bingle	100	0.0	*0.0	25.8	57	93	4
2011034S	East 1	99	*0.0	**0.0	*33.8	45	74	2
2010801P	HRM 1	97	$\mathbf{X}$	X	30.0	$\mathbf{X}$	X	$\mathbf{X}$
2010024S	Aldine 8	62	*0.0	***	*29.9	46	75	2
1670004L	Tx City Fire Sta	50	*0.0	**0.0	*22.7	41	67	2
2010807P	HRM 7	48	X	X	22.0	X	X	X
Killeen-T	emple MSA (TN	RCC Regio	on 9)					
0270001S	Temple	63	0.0	*0.0	18.0	60	98	4
Laredo M	Laredo MSA (TNRCC Region 15)							
4790015S	Laredo	123	*0.0	***	*32.5	48	79	2
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	ASA (TNRCC Reg	ion 2)						
3030001S	Lubbock	78	0.0	0.0	22.1	170	94	4
	IO CMSA (TNRC	C Region 1	3)					
0290036S	North 7	74	0.0	0.0	21.4	61	100	4
0290034S	Texas Culture	72	0.0	0.0	28.6	59	97	4
0290042S	East Kelly	58	0.0	*0.0	25.0	59	97	4
0910004S	New Braunfels 4	22	*0.0	***	*10.9	14	23	1
0910003S	New Braunfels 3	20	*0.0	***	*12.6	14	23	1
	(TNRCC Region	5)						
4230003S	Tyler	75	0.0	*0.0	19.4	53	87	4
Wichita Falls MSA (TNRCC Region 3)								
4850002S	Wichita Falls	65	*0.0	**0.0	*22.5	49	80	3

Table 7. PM<sub>10</sub> Summary 1992⊖ (continued)

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Local governmental agency monitoring site (at end of AIRS number) Private monitoring site (at end of AIRS number) State monitoring site (at end of AIRS number) Air pollution concentration required to exceed the NAAQS Expected number of days over 155 µg/m<sup>3</sup>; annual average not to exceed 1.1 days per year over a three-year ۲ P S ■ 米 period

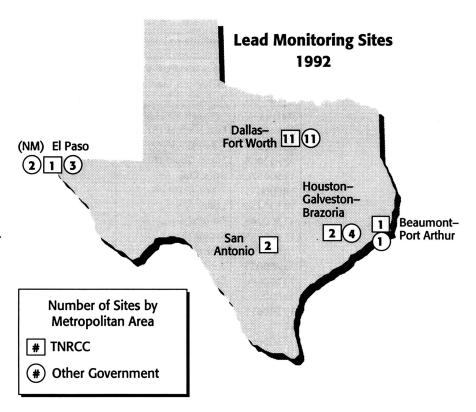
\* Each \* indicates one year not meeting EPA completeness criteria; not valid for NAAQS comparison

0 Including exceptional event days when unusual, uncontrollable events occurred (primarily dust storms)

X Data not available

#### Lead

Lead was analyzed from particulate filters collected at 36 monitoring sites in Texas by the TNRCC and other government organizations during 1992. In addition, New Mexico operated two monitors across the state line from El Paso. All these sites are shown in the adjacent map. In most areas of the state, lead in the ambient air is the result of automotive sources burning leaded fuels. In a few areas, lead is also released into the air by lead smelters. Since leaded gasoline is being phased out, atmospheric lead from automotive sources has been decreasing in recent years. Lead occurs in the ambient air as particulate matter and is collected on high-volume filters with other particulate matter. The filters are subjected to x-ray fluorescence or atomic absorption analysis to determine lead content. The standard is violated if the average concentration of lead measured during one



calendar year quarter is 1.55  $\mu$ g/m<sup>3</sup> or greater.

In the past, the lead standard was exceeded only at monitoring sites near active lead smelters. The highest lead levels in 1992 were recorded at sites that were near lead smelters in the Dallas and El Paso metropolitan areas. Table 8 provides a summary of the 1992 lead measurements at each monitoring site. The table listings are grouped alphabetically by metropolitan area and arranged in descending order from the highest quarterly average.

			No. of			
ALDC	Cite Nome	Qtr		Valid	Valid	
AIRS	Site Name	High	Qtrs Exc	Valid	Valid	
		(µg/m³)	NAAQS	Days	Qtrs	
NAAQS 🔳		1.55				
	-Port Arthur MSA (		egion 10)			
2451010L	Beaumont Marina	0.02	0	15	1	
2450009S	Beaumont 2	0.02	0	57	4	
Dallas-For	t Worth CMSA (TN	RCC Regi	on 4)			
0850003S	Frisco 5thSt (3) 🕈	0.91	0	60	4	
0850002S	Frisco Gould (2) 🕈 🕸	0.58	0	10	0	
0850006S	Frisco Gould (6) 🕈 🕸	0.25	0	34	2	
1130057L	Boys Club 🕈	0.19	0	103	4	
0850001S	Frisco Acker 🕈	0.13	0	58	4	
1130045S	Dallas N 5	0.09	0	54	4	
1130074S	Garland Shiloh 🕈	0.08	0	45	3	
1130065L	Rector 🕈	0.06	0	363	4	
1130018L	Morrell	0.06	0	60	4	
2570003S	Terrell Virginia	0.06	0	23	1	
1130064L	Sargent 🕂	0.05	0	364	4	
11300735	Palmer Paper 🕈	0.05	0	57	4	
1130061L	Earhart	0.05	0	58	4	
1130046L	M L King	0.05	0	61	4	
1130066L	Nolen 🕈	0.04	0	364	4	
1130050L	Convention	0.04	0	60	4	
1130029L	Douglas	0.04	0	57	4	
43910035	Ft Worth Dtn 16	0.03	0	56	4	
1130047L	Sunnyvale	0.03	0	76	3	
11300715	Farmers Branch	0.03	0	60	4	
43900235	Worth Heights	0.02	o	58	4	
1310070L	Chalk Hill	0.02	0	54	4	
	arez Area TX NM M	•			· ·	
0130004S	Race Track NM	0.40		61	4	
01300175	Sunland NM	0.38	0	61	4	
1410002L	Tillman	0.26	0	60	4	
14100275	Downtown 6	0.20	0	57	4	
14100275	Kern	0.17	0	55	4	
1410033L	Northeast	0.17	0	60	4	
	Galveston-Brazoria					
2010054L	Kress	0.02		60		
2010034L 2011035L	Clinton	0.02	0	56	4	
1671002S	Texas City 2	0.02	0	56	4	
2011034S	Houston East	0.02	0	58	4	
20110345 2010048L	Fulton					
	Der Desameren en der Bereichen der	0.01	0	57	4	
2010045L	Bingle	0.01	0	59	4	
San Antonio MSA (TNRCC Region 13)						
0290034S	ITC	0.03	0	60	4	
0290050S	Airport	0.02	0	61	4	

#### Table 8. Lead Summary 1992

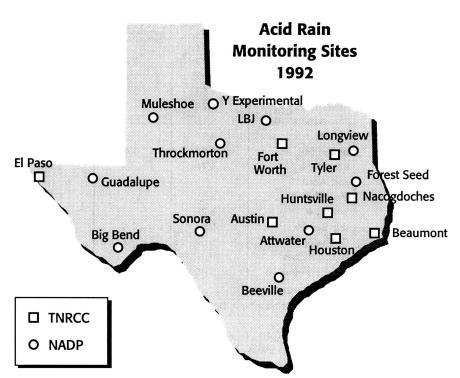
L Local governmental agency monitoring site (at end of AIRS number)
 S State monitoring site (at end of AIRS number)
 Air pollution concentration required to exceed the NAAQS

✤ Site near lead smelter

✤ Relocated during 1992

#### Acid Rain

Acid rain was monitored by the TNRCC or the federal government at 19 sites in Texas during 1992. During that year, the TNRCC participated in the National Atmospheric Deposition Program (NADP) and National Trends Network (NTN) by sponsoring automated samplers in Longview and Forest Seed that captured rainfall over one-week periods. These samples were forwarded to the NADP for analysis and the results were published. The TNRCC also conducted seven-day rainfall sampling at Huntsville and event monitoring at seven additional locations shown in the adjacent map. Event samples were collected during individual rainstorms, and pH and conductivity of the samples were measured immediately in the field. The samples were then forwarded to Austin where pH



and conductivity measurements were repeated.

The pH scale is a logarithmic measure of acidity or alkalinity. A pH of 7 is neutral, with higher numbers corresponding to increased alkalinity and lower numbers to increased acidity. Unpolluted rainwater has a slightly acidic pH of 5.6. This acidity is caused by the formation of carbonic acid from carbon monoxide in the atmosphere.

Table 9 provides a summary of acid rain measurements during 1992.

			Jammar	1332	
Site	Average pH	Standard Deviation	Maximum pH	Minimum pH	Number of Samples
Longview&	4.60		6.15	4.15	43
Austin	5.00	0.03	5.36	4.41	15
Forest Seed	4.87		6.65	4.06	44
Huntsville	4.79	0.21	5.02	4.34	16
Tyler	4.82	0.36	5.28	4.43	4
Houston	4.83	0.50	5.95	4.04	17
Attwater 🏶	4.79		6.66	4.20	36
Throckmorton &	5.16		6.19	4.64	9
L.B.J.🙅	4.94		7.46	4.07	40
Beaumont	5.03	0.40	5.54	4.45	11
Beeville	4.71		7.00	3.87	38
Fort Worth					0
Muleshoe	5.55		6.97	4.76	30
Sonora	5.26		7.26	4.30	41
Big Bend	5.54		7.42	4.94	35
Guadalupe 🏚	5.52		7.66	4.77	34
Nacogdoches					0
Y Experimental 🛧	5.40		7.22	4.86	11
El Paso					0

Table 9. Acid Rain Summary 1992

✤ National Atmospheric Deposition Program/National Trends Network site

Note: Acidity (pH) of unpolluted rainwater is 5.6. Lower values are more acidic and higher values are less acidic.

# Abbreviations/Acronyms

### Pollutants

CO	Carbon monoxide
NO <sub>2</sub>	Nitrogen dioxide
O <sub>3</sub>	Ozone
PM <sub>10</sub>	Particulate matter of ten microns or less
SO <sub>2</sub>	Sulfur dioxide

### Measurement Units

pН	a measure of acidity
ppb	parts per billion (volume ratio)
ppm	parts per million (volume ratio)
µg/m <sup>3</sup>	micrograms (10 <sup>-6</sup> grams) per cubic meter

### Other

2nd Day	Second highest daily maximum one-hour average
Ann	Annual
AIRS	Aerometric Information Retrieval System
CMSA	Consolidated Metropolitan Statistical Area
days/yr	days per year
EPA	U. S. Environmental Protection Agency
Exc	Exceedances (number of times NAAQS was exceeded)
Exp Exc	Expected Exceedances (for $O_3$ and $PM_{10}$ using EPA methods)
Hr	Hour
HRM	Houston Regional Monitoring Corporation
MSA	Metropolitan Statistical Area
MX	Mexico
NAAQS	National Ambient Air Quality Standards
NADP	National Atmospheric Deposition Program
NM	New Mexico
No.	Number
NTN	National Trends Network
PMSA	Primary Metropolitan Statistical Area
Qtr(s)	Quarter (calendar)
SETRPC	Southeast Texas Regional Planning Commission
TCLMCM	Texas City/La Marque Community Air Monitoring Network
TNRCC	Texas Natural Resource Conservation Commission