ADEQ Arizona Department of Environmental Quality

Janet Napolitano, Governor
Stephen A. Owens, ADEQ Director

MONTHLY AIR QUALITY REPORT FOR AUGUST 2006

AQI COLOR SCALE

GOOD	MODERATE	UNHEALTHY FOR SENSITIVE GROUPS	UNHEALTHY
0-50	51-100	101-150	151-200

Calendar of maximum AQI values & their corresponding color for August 2006*

*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

1 (day of month)	O3	CO
	PM10	PM2.5

SUN			MON			TUE			WED			THU			FRI			SAT	
					1	38	06	2	48	06	3	43	07	4	43	09	5	46	08
						30	30		32	28		59	33		31	33		37	27
6	54	08	7	51	08	8	61	05	9	111	05	10	79	09	11	79	07	12	74	08
	33	32		44	31		53	34		60	34		63	37		53	30		36	42
13	48	09	14	48	06	15	61	07	16	45	06	17	46	08	18	51	11	19	66	14
	24	33		47	31		31	32		42	31		54	43		59	42		47	44
20	51	11	21	59	06	22	48	09	23	90	06	24	47	06	25	64	07	26	45	08
	36	34		81	41		30	42		28	40		44	32		29	43		39	43
27	59	17	28	82	16	29	74	17	30	95	13	31	64	06						
	42	31		60	51		60	57		64	34		51	31						

Calendar of High Pollution Advisories and Health Watches issued during August 2006

SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4	5
6	7	8	9	10 F	11	12
13	14	15	16	17	18	19
20	21 F	22	23	24	25 F	26
27	28	29	30	31		

LEGEND

HIGH POLLUTION ADVISORIES

A = PM-10 High Pollution Advisory
B = PM-2.5 High Pollution Advisory
C = Ozone High Pollution Advisory

HEALTH WATCHES

D = PM-10 Health Watch
E = PM-2.5 Health Watch
F = Ozone Health Watch

Exceedance days during AUG 2006-

Total= 0 Date Max AQI Pollutant Site/s

High Pollution Advisories issued during AUG 2006-

Total= 0 Date Max AQI Pollutant Site/s

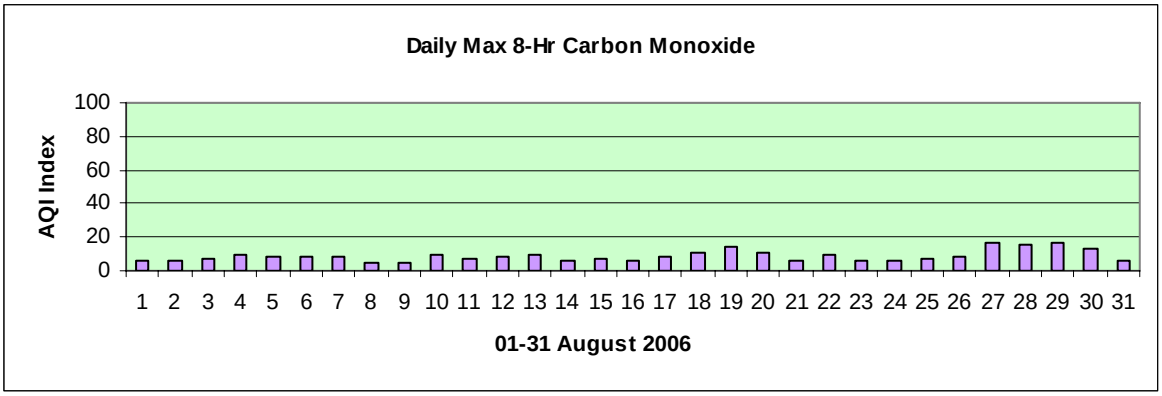
Health Watches issued during AUG 2006-

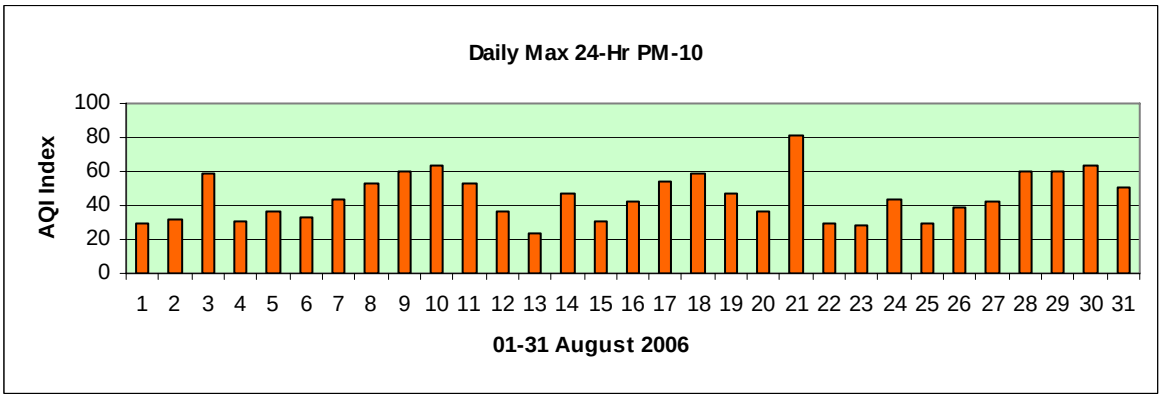
Total= 0 Date Max AQI Pollutant Site/s

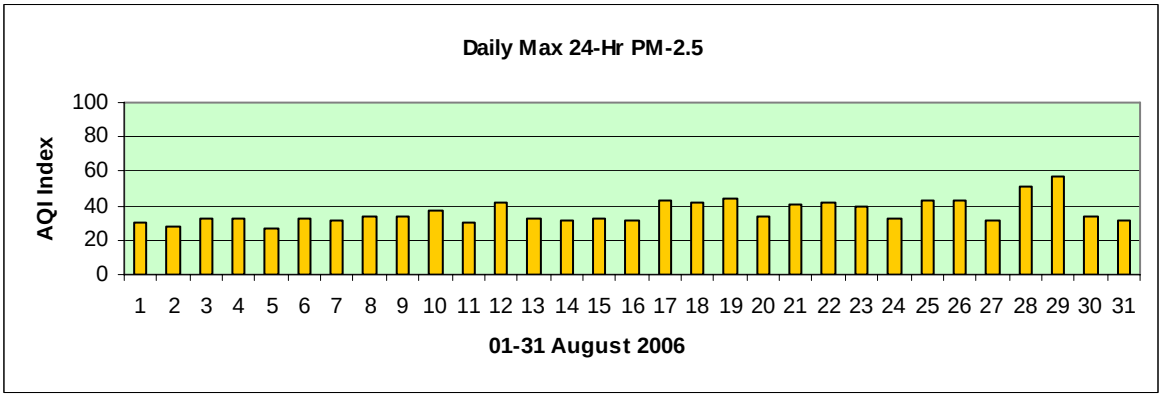
Concentration Recap:

Days in the Good category:	1
Days in the Moderate category:	20
Days in the Unhealthy for Sensitive Groups category:	10
Days in the Unhealthy category:	0
Total Forecast Days:	31

Narrative: August 2006 was a relatively "quiet" month from a PM-10, PM-2.5, and carbon monoxide perspective. Highest concentrations of PM-10 were in the good range of the Air Quality Index most of the month and on only one day—the 21st—did the highest concentration exceed the low-moderate range of that scale; this can be attributed to a blowing dust event as a result of strong thunderstorm outflow winds. Wind gusts up to 64 mph were registered and the visibility dropped to 1/4 mile at one local airport. Another episode of interest occurred from the 27th thru the 31st. A break in the summer monsoon thunderstorm cycle occurred and the accompanying decrease in cloud cover and dew points contributed to greater overnight cooling. The air mass became more stagnant and by the morning of the 28th the *Valley Brown Cloud* of trapped particle pollution—usually a cool season local phenomenon—developed over the Phoenix metro area. Radiation inversions of up to 3.5 deg C that extended up to 2100' formed overnight and local visibilities were impacted. PM-10 and PM-2.5 levels rose into the moderate range of the AQI on the 28th and 29th and even carbon monoxide levels increased from the 27th thru the 30th. –Reith







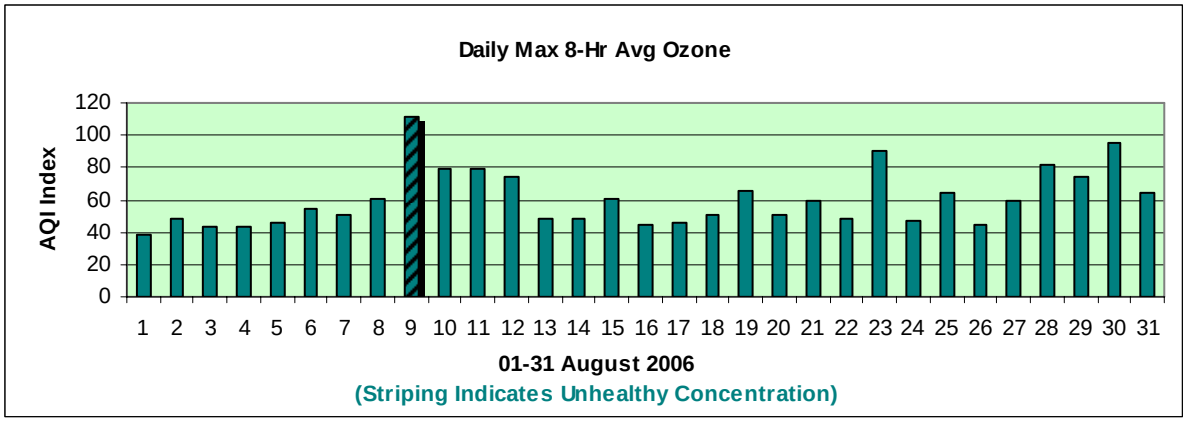
DETAILED OZONE SECTION

GOOD	MODERATE	UNHEALTHY FOR SENSITIVE GROUPS	UNHEALTHY
0-50	51-100	101-150	151-200

SUMMARY OF MAXIMUM 8-HR OZONE AQI VALUES FOR AUGUST 2006*

*Preliminary data

SUN		MON		TUES		WED		THU		FRI		SAT	
				1	38	2	48	3	43	4	43	5	46
6	54	7	51	8	61	9	111	10	79	11	79	12	74
13	48	14	48	15	61	16	45	17	46	18	51	19	66
20	51	21	59	22	48	23	90	24	47	25	64	26	45
27	59	28	82	29	74	30	95	31	64				



8-hr Ozone exceedance days in AUG: Total= 1

Date	Max ppb/AQI	Site/s
8/09	89/111	West Chandler

Total number of exceedance days since APR 01: 11
Total number of exceedance sites since APR 01: 26

Ozone Health Watches in AUG: Total= 3
(Forecast max value 80-84 ppb)

Date	Max ppb/AQI	Site/s
8/10	76/79	North Phoenix
8/21	68/59	West Phoenix
8/25	70/64	Rio Verde

Ozone Health Watches since APR 01: Total= 37

High Pollution Advisories in AUG: Total= 0
(Forecast max value 85+ppb)

High Pollution Advisories since APR 01: Total= 7

Concentration Recap:

Days in the Good category:	12
Days in the Moderate category:	18
Days in the Unhealthy for Sensitive Groups category:	1
Days in the Unhealthy category:	0
Total Forecast Days:	31

	Date	Hour	Site	ppb/AQI DOW
Maximum 8-Hr value:	8/09	1000	West Chandler	89/111 Wed
Maximum 1-Hr value:	8/30	1600	North Phoenix	109/91 Wed

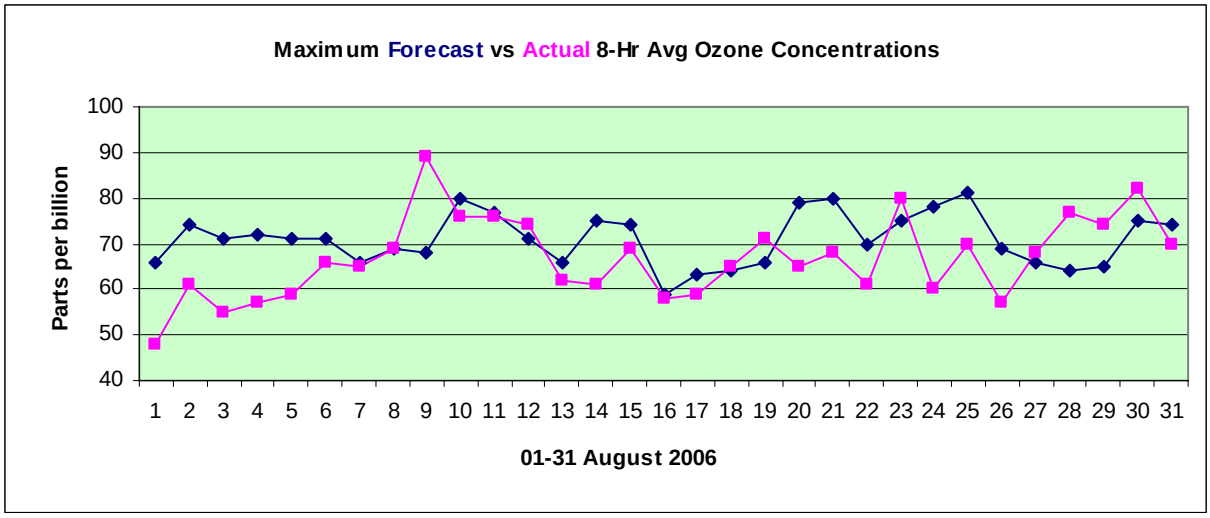
Average daily max 8-Hr concentration (ppb):	66.8
Deviation from the 1996-2005 average (ppb):	-5.7

AUG Climatology:
(1996-2005)

Average number of 8-Hr exceedance days:	4.1
Maximum number of 8-Hr exceedance days:	10 in 1998, 2000
Minimum number of 8-Hr exceedance days:	0 in 1997, 2002, 2004
Average daily max 8-Hr concentration (ppb):	72.5
Record high max 8-Hr concentration (ppb):	100 on the 10th, 2001
Record low max 8-Hr concentration (ppb):	46 on the 12th, 1997

Forecast Verification:

# of days maximum concentrations were over-forecast:	21
# of days maximum concentrations were under-forecast:	9
# of days maximum concentrations were correctly forecast:	1
Aug average forecast accuracy (ppb):	+/-8.4
Aug average forecast bias (ppb):	+4.1



Narrative:

Ozone production apparently—and uncharacteristically—decreased significantly during August, despite 100+ degree maximum daytime temperatures on all but six days during the month, ample outflow boundaries, and a number of days with easterly wind regimes. On the other hand, there were an above average number of days with considerable daytime cloud cover. At any rate, the single site exceedance that occurred on the 9th was preceded by a strong thunderstorm outflow boundary late on the 8th, and aided by an easterly but light wind component until late in the afternoon the day of the exceedance. Another spike in ozone production that occurred on the 30th was likely contributed to by another episode of easterly flow aloft and light daytime winds. On that date the highest hourly ozone value from the monitoring network was 109 parts per billion—the fourth highest hourly reading of the entire 2006 season. -Reith