



**MONTHLY AIR QUALITY REPORT FOR
NOVEMBER 2007**

AOI COLOR SCALE

GOOD 0-50	MODERATE 51-100	UNHEALTHY FOR SENSITIVE GROUPS 101-150	UNHEALTHY 151-200
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Calendar of maximum AQI values & their corresponding color for November 2007*

*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

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

	SUN	MON	TUE	WED	THU	FRI	SAT						
					1	38 26 83 63	2	40 32 90 63	3	38 41 70 65			
4	42 27 65 68	5	38 30 92 76	6	39 31 83 66	7	40 28 100 71	8	43 31 100 73	9	35 35 86 62	10	29 28 66 67
11	34 23 56 53	12	30 20 74 65	13	26 23 82 68	14	30 22 80 55	15	33 27 106 57	16	31 17 73 49	17	38 25 72 67
18	41 28 66 67	19	29 27 91 73	20	30 32 90 66	21	30 19 83 56	22	30 08 55 41	23	33 14 60 45	24	35 15 76 33
25	32 16 49 44	26	31 24 82 76	27	30 25 82 69	28	30 25 90 79	29	27 27 76 67	30	23 14 19 25		

Calendar of High Pollution Advisories and Health Watches issued during November 2007

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

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

Calendar of Meteorological Conditions observed in Metro Phoenix during November 2007

SUN			MON			TUE			WED			THU			FRI			SAT		
												1			2		E	3		
4		E			E			6			E	8			9		E	10		E
11		E			E			E			E	15	A	B	16	A	B	17		E
18					E			E			E	22			23			24		D
25		E			E			E			E	29		B	30		B			C

LEGEND

ELECTROMETEORS
A = Thunderstorm

HYDROMETEORS
B = Rain/Drizzle/Hail/Snow
C = Fog

LITHOMETEORS
D = Blowing Dust
E = Haze (vsby <10SM)
F = Smoke

Exceedance days during NOV 2007-

<u>Total=</u>	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
1	11/15	106	PM-10	Buckeye
		101	PM-10	Durango

Health Watches issued during NOV 2007-

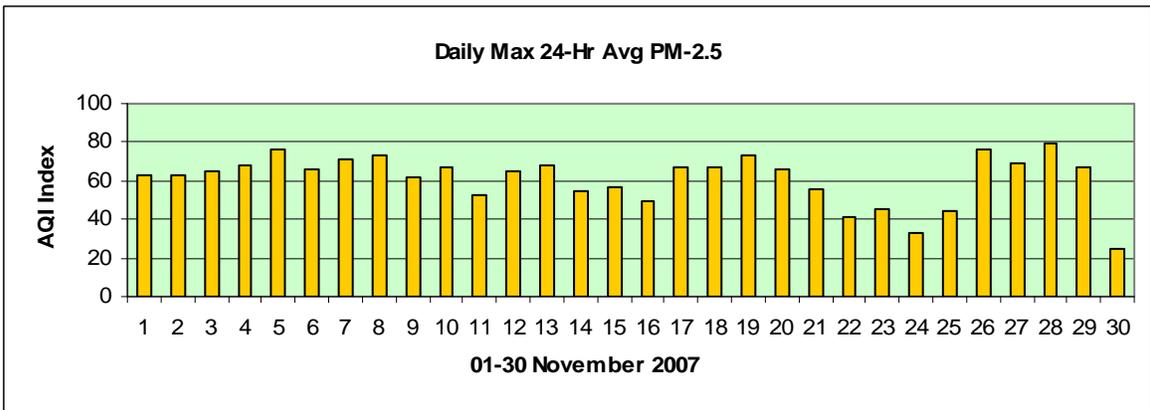
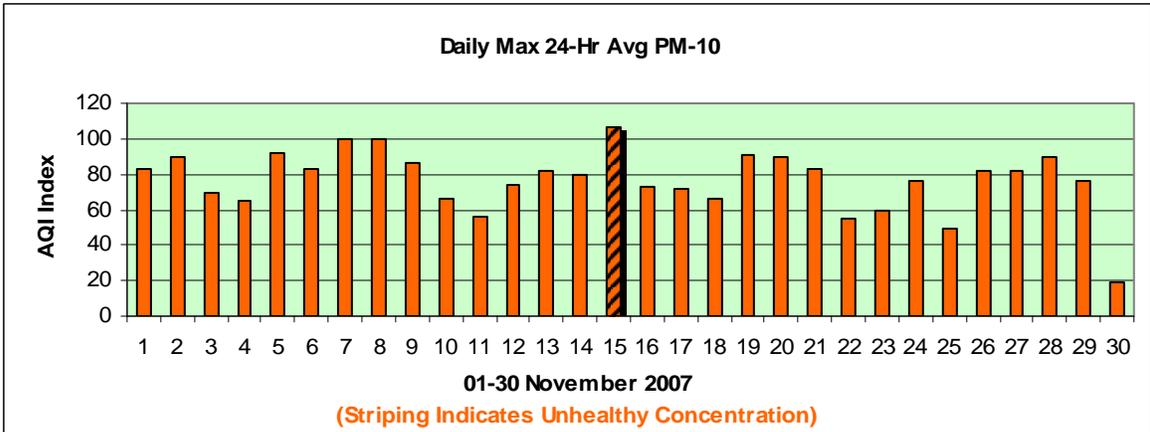
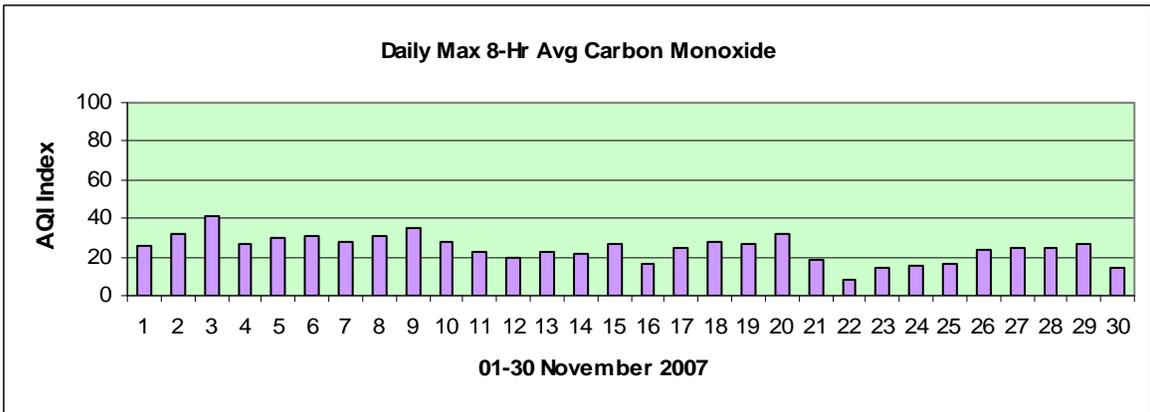
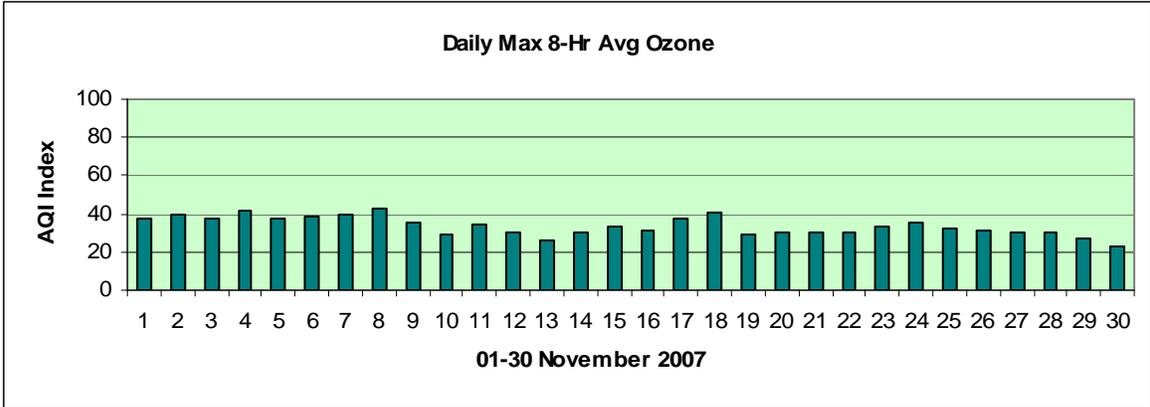
<u>Total=</u>	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
7	11/07	100	PM-10	West Forty Third
	11/08	73	PM-2.5	West Phoenix
	11/09	86	PM-10	West Forty Third
	11/14	80	PM-10	West Forty Third
	11/21	83	PM-10	Durango
	11/27	82	PM-10	West Forty Third
	11/28	79	PM-2.5	West Phoenix

High Pollution Advisories issued during NOV 2007-

<u>Total=</u>	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
1	11/08	100	PM-10	West Forty Third

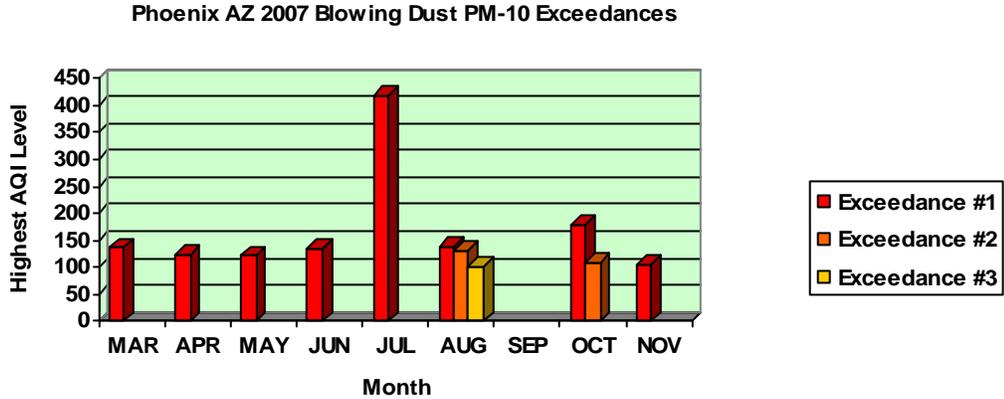
Concentration Recap:

Days in the Good category:	2
Days in the Moderate category:	27
Days in the Unhealthy for Sensitive Groups category:	1
Days in the Unhealthy category:	<u>0</u>
Total Forecast Days:	30

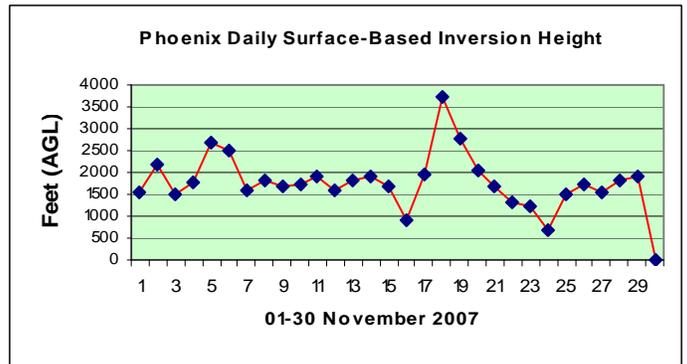
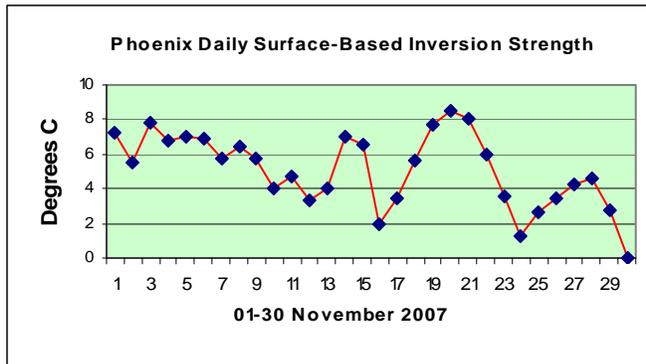


Narrative:

November 2007 was a busy month both weather-wise and air pollution-wise in the Phoenix metropolitan area. Rain, fog, virga, thunderstorms, haze, and blowing dust were all observed locally at one time or another during the month. Wind speeds ranged from mostly light or calm all day on several dates to 35 mph gusts due to thunderstorm outflow boundaries on the 15th and 16th. Record high daytime temperatures from the upper 80s to the lower 90's occurred at Sky Harbor Airport from the 5th thru the 8th and again on the 19th. In the air pollution realm, for the 8th time in nine months a wind-generated blowing dust event contributed to at least one PM-10 (coarse particle) site exceedance in the Valley (see graph below):



Perhaps the most predictable phenomena of the month were the return of stagnant air mass conditions and its precursors in the form of inversions, low mixing heights, and unfavorable ventilation/dispersion. The increasingly troublesome stagnation characteristic of the Valley's air mass the past few winters has had a deleterious impact on air quality, while contributing to numerous exceedances of the NAAQS 24-hour PM-10 standard and a growing number of PM-2.5 exceedances – mainly during the Christmas and New Year's holiday periods – apparently due to the exponential increase in smoke emissions from fireplace use. Even though no such exceedances occurred this month it was a close call; PM-10 levels were in the 90-100 AQI range on seven days. An accurate measure of the local air mass stagnation continues to be derived from ACARS soundings data. The ventilation index (in knot-feet), just one of many parameters that can be calculated from said soundings, is used to determine the magnitude of local dispersion. It is interesting to note that during October 2007 dispersion was marginal on only two days; during November 2007 there were 10 such days and on two additional days dispersion was rated poor. The graphs below illustrate two more calculated measurements – those of overnight surface-based radiation inversion strength and height:



Thankfully, a major rain event occurred on the 30th to help settle the dust. -Reith