



**MONTHLY AIR QUALITY REPORT FOR
APRIL 2011**

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 April 2011*

*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

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

SUN			MON			TUES			WED			THU			FRI			SAT		
													1	61	13	2	43	16		
														41	44		63	38		
3	39	06	4	71	07	5	90	09	6	47	09	7	46	08	8	47	06	9	45	07
	54	31		31	25		36	29		45	32		26	30		55	35		07	23
10	50	08	11	80	10	12	100	10	13	84	09	14	77	05	15	67	10	16	74	09
	12	35		19	33		27	35		37	36		57	62		54	65		52	55
17	46	10	18	46	05	19	51	05	20	87	06	21	54	06	22	80	07	23	50	07
	36	46		48	43		33	34		39	39		34	34		38	34		34	33
24	46	06	25	71	05	26	90	03	27	64	05	28	71	08	29	67	07	30	77	05
	44	37		44	42		55	33		43	22		44	31		57	35		44	22

Calendar of High Pollution Advisories and Health Watches issued during April 2011

SUN			MON			TUE			WED			THU			FRI			SAT					
															1						2		
3	A		4			5			6			7			8						9		
10			11			12			13			14			15					F	16		
17			18			19			20			21			22						23		
24			25			26			27			28			29		F				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 April 2011

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

LEGEND

ELECTROMETEORS
A = Thunderstorm

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

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

Non-Ozone Exceedance days during APR 2011-

Total= 0 Date Max AQI Pollutant Site/s

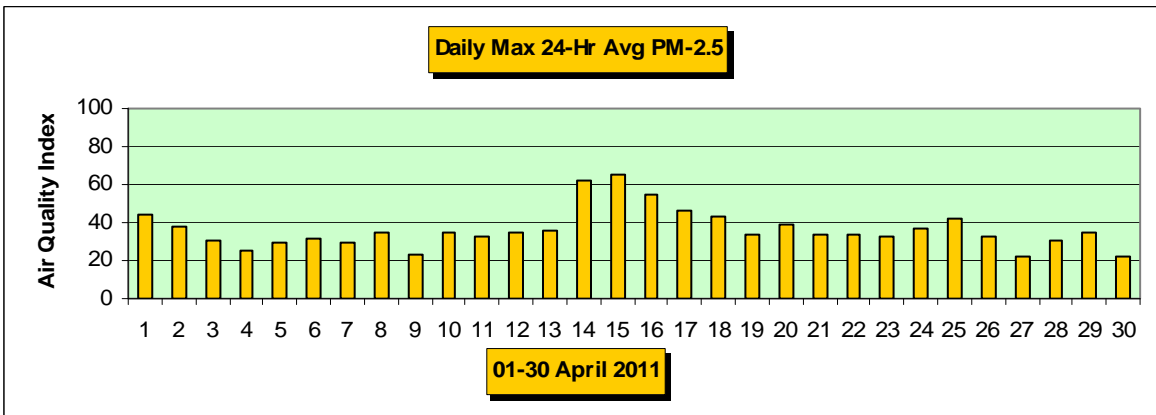
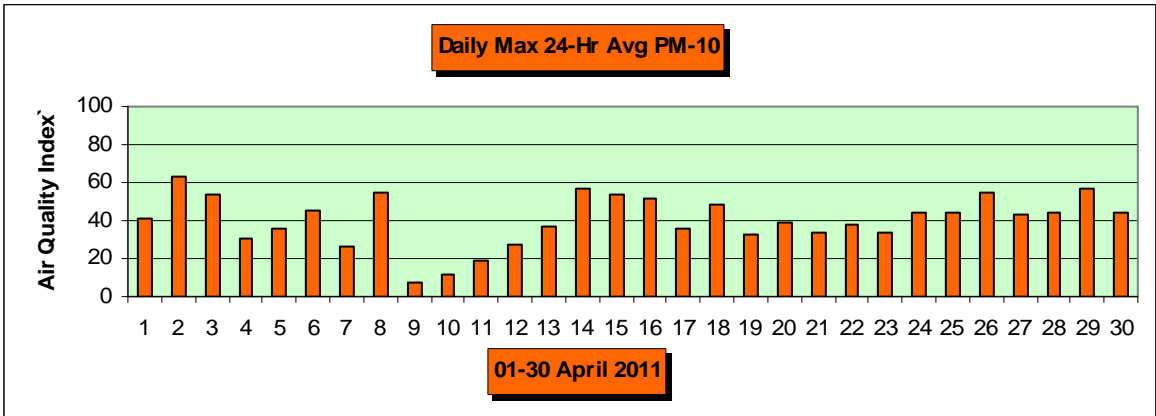
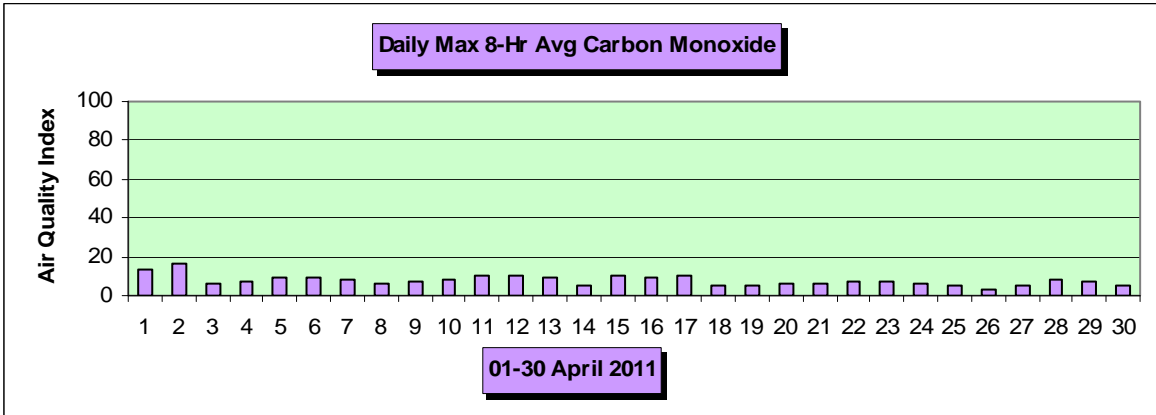
Non-Ozone Health Watches issued during APR 2011-

Total= 0 Date Max AQI Pollutant Site/s

Non-Ozone High Pollution Advisories issued during APR 2011-

Total= 1 Date Max AQI Pollutant Site/s
4/03 54 PM-10 West Forty Third

Concentration Recap: Days in the **Good** category: 8
Days in the **Moderate** category: 22
Days in the **Unhealthy for Sensitive Groups** category: 0
Days in the **Unhealthy** category: 0
Total Forecast Days: 30



Narrative: A series of weather disturbances embedded in the mid-latitude storm track generated lots of gradient winds over the Phoenix metro during April. There were 14 days during which wind gusts of 30 mph or greater occurred in the Valley. Even so, blowing dust was reported on only two days – the 24th and 30th – and highest PM-10 (coarse particle) AQI levels rose no higher than the low-moderate range. Despite the active weather pattern, rainfall occurred on only two days – the 6th and the 9th – but the latter was fairly productive with a quarter-inch of precipitation at many metro area locations. As a result, highest PM-10 AQI readings were in the single digits or 10's from the 9th thru the 11th. The aforementioned windy days, along with afternoon high temperatures mostly in the 80's and 90's and mixing depths mostly above 8K', yielded good to excellent dispersion on all but two days. These characteristics also helped to keep particle pollution concentrations quite low. There were only a handful of days during which impairments to visibilities occurred; indeed, on the vast majority of days Valley residents were greeted by a view similar to that shown in shown in [Figure 1](#) below. -Reith

[Figure 1](#)



DETAILED OZONE SECTION

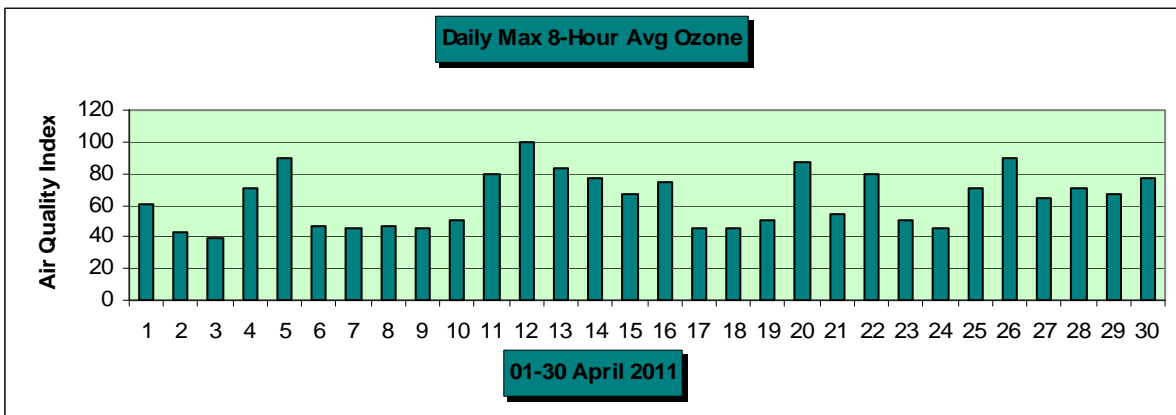
(Based on the 2008 EPA Revised 8-Hour Ozone Standard)

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

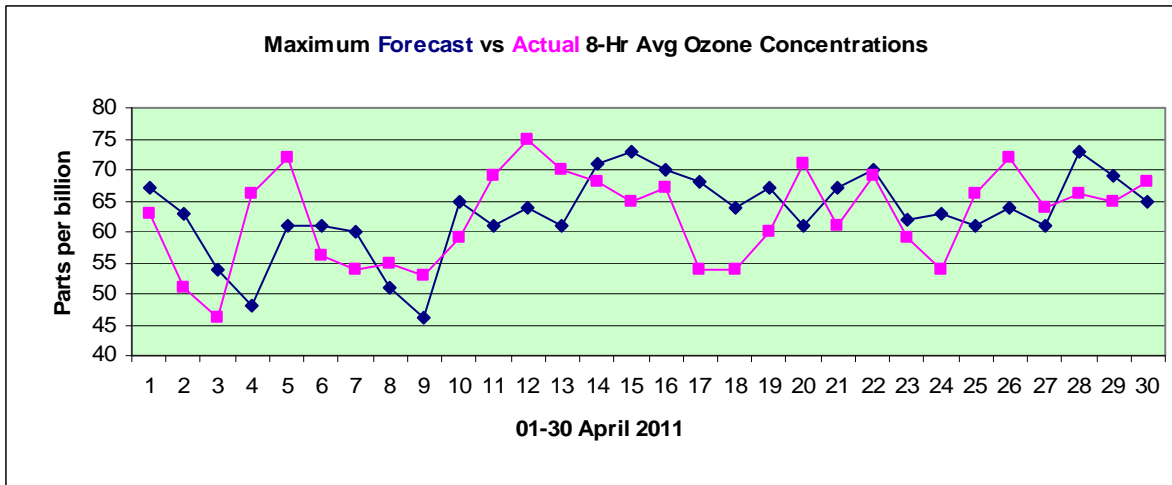
SUMMARY OF MAXIMUM 8-HR OZONE AQI VALUES FOR APRIL 2011*

*Preliminary data

SUN		MON		TUES		WED		THU		FRI		SAT	
										1	61	2	43
3	39	4	71	5	90	6	47	7	46	8	47	9	45
10	50	11	80	12	100	13	84	14	77	15	67	16	74
17	46	18	46	19	51	20	87	21	54	22	80	23	50
24	46	25	71	26	90	27	64	28	71	29	67	30	77



Forecast Verification:	# of days maximum concentrations were over-forecast:	18
	# of days maximum concentrations were under-forecast:	12
	# of days maximum concentrations were correctly forecast:	0
	April average forecast accuracy (ppb):	+/-7.1
	April average forecast bias (ppb):	+3.9



Narrative:

Although no 8-hour ozone exceedances occurred in the Phoenix metro area during the month of April, there were several close calls with highest concentrations in the upper-moderate range of the Air Quality Index. The synoptic weather pattern that was described in the earlier section of this report not only brought gusty winds at times, but also resulted in numerous periods during which winds in the 5-10K' layer were conducive to the transport of additional ozone and/or its precursors from California to Arizona. Over the years this transport phenomenon has been observed and documented on numerous occasions during the spring months although no formal scientific study has been conducted by ADEQ to precisely evaluate its impact. At any rate, the elevated ozone level episodes during this month all coincided with a west to northwesterly flow pattern upstream from the Valley. By way of illustration, Figures 1-5 below are 24-hour time-series graphs from ozone monitoring sites in the metro area for the period 12:00 noon on April 04 to 12:00 noon on April 05. During this episode the highest ozone AQI readings rose from 39 on the 3rd to 71 on the 4th to 90 on the 5th despite daytime high temperatures only in the 84-88 deg F range and wind gusts to 30 mph on the 4th and 20 mph on the 5th. As can be seen from the graphs hourly ozone concentrations diminished during the evening hours as is typical due to the absence of daytime ultraviolet radiation to continue the chemical reaction between the ozone precursors NOx and VOC. However, by midnight hourly ozone concentrations were again on the rise at all five sites – presumably due to the arrival of additional and higher levels of ozone from the west.

–Reith

Figure 1

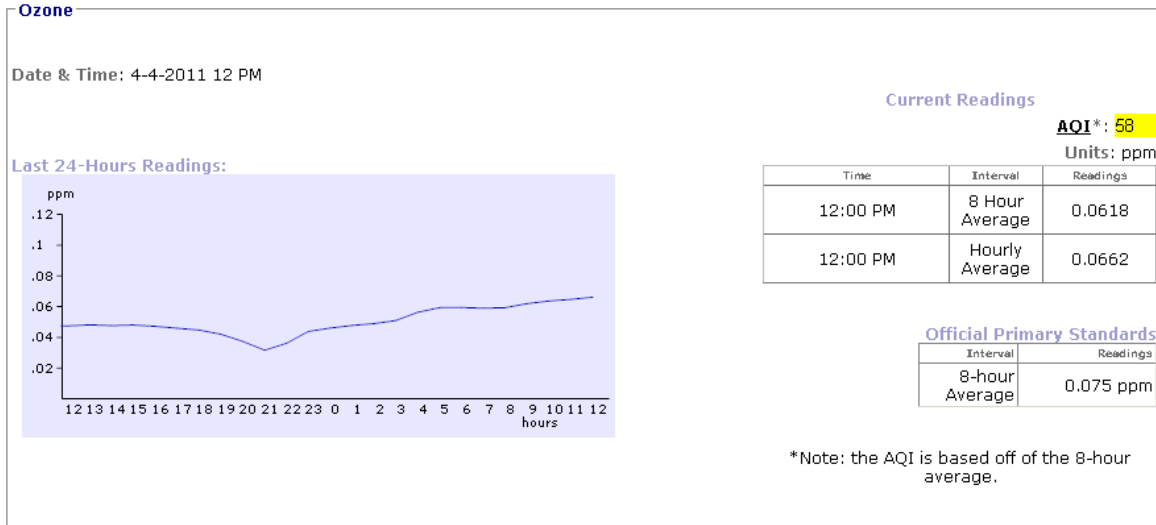


Figure 2

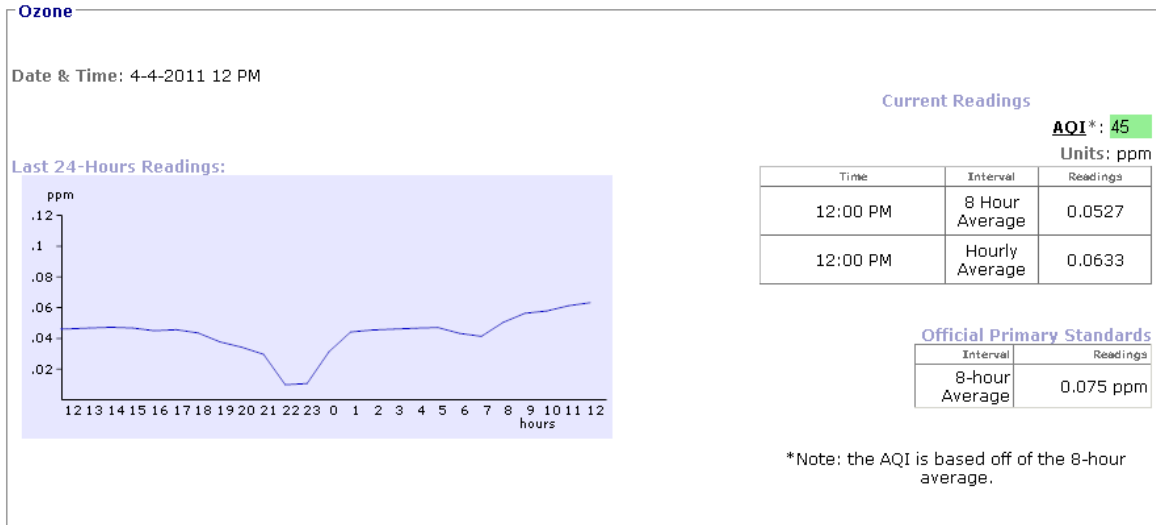


Figure 3

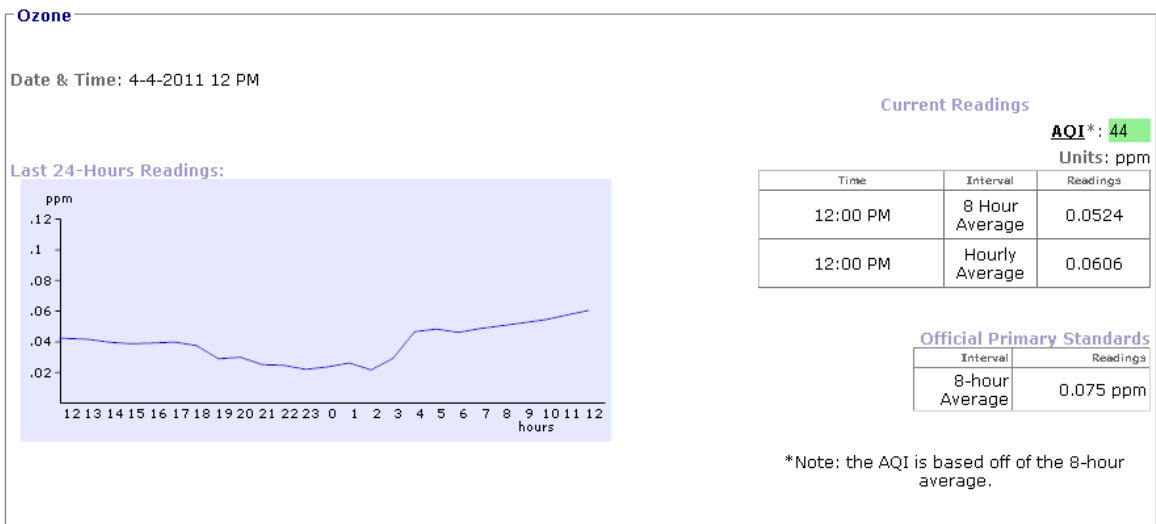


Figure 4

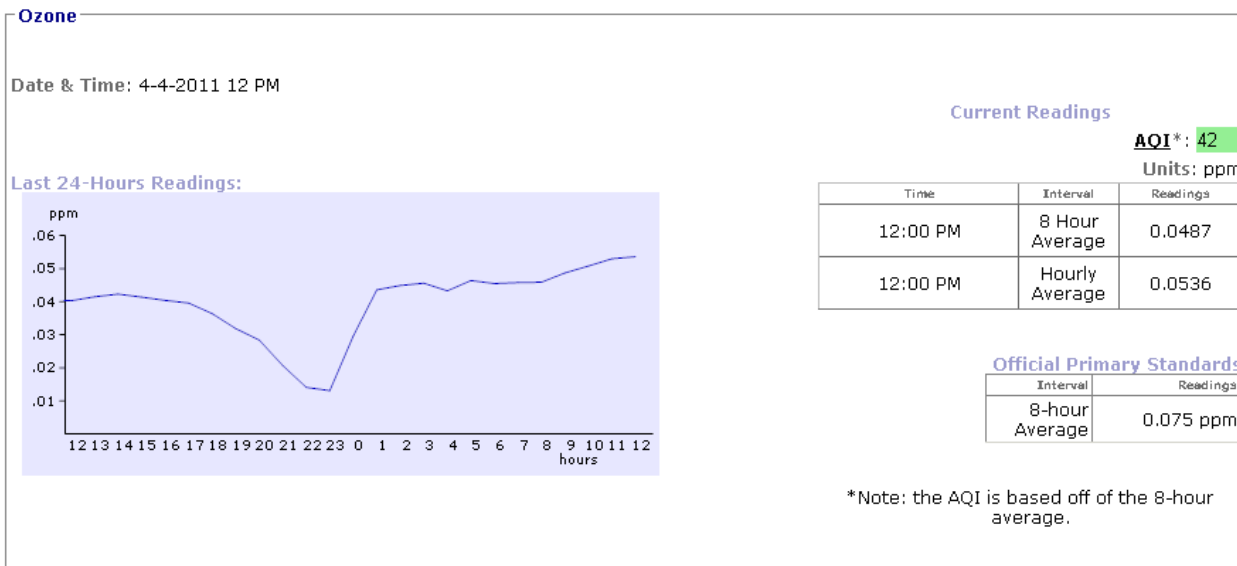


Figure 5

