



**MONTHLY AIR QUALITY REPORT FOR
APRIL 2010**

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 2010*

*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

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

SUN		MON		TUES		WED		THU		FRI		SAT	
								1	48 04	2	50 08	3	64 09
									34 14		26 30		29 25
4	50 11	5	45 09	6	51 06	7	58 06	8	71 13	9	74 13	10	47 17
	46 43		59 47		26 20		43 31		46 42		43 44		37 31
11	45 07	12	42 07	13	54 08	14	84 10	15	84 10	16	67 08	17	71 15
	28 30		63 29		31 30		43 54		54 47		55 46		46 47
18	80 16	19	49 07	20	46 07	21	46 03	22	47 05	23	45 06	24	67 05
	37 47		51 51		33 29		76 30		42 29		27 14		25 23
25	71 06	26	61 08	27	77 09	28	49 06	29	61 05	30	43 05		
	35 39		46 43		50 41		61 35		74 27		25 44		

Calendar of High Pollution Advisories and Health Watches issued during April 2010

SUN			MON			TUE			WED			THU			FRI			SAT		
												1			2			3		
4			5			6			7			8			9			10		
11			12			13			14			15			16			17		
18			F	19		20			21			22			23			24		
25			26			27			28			D	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 April 2010

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

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 2010-

<u>Total=</u>	<u>0</u>	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
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Non-Ozone Health Watches issued during APR 2010-

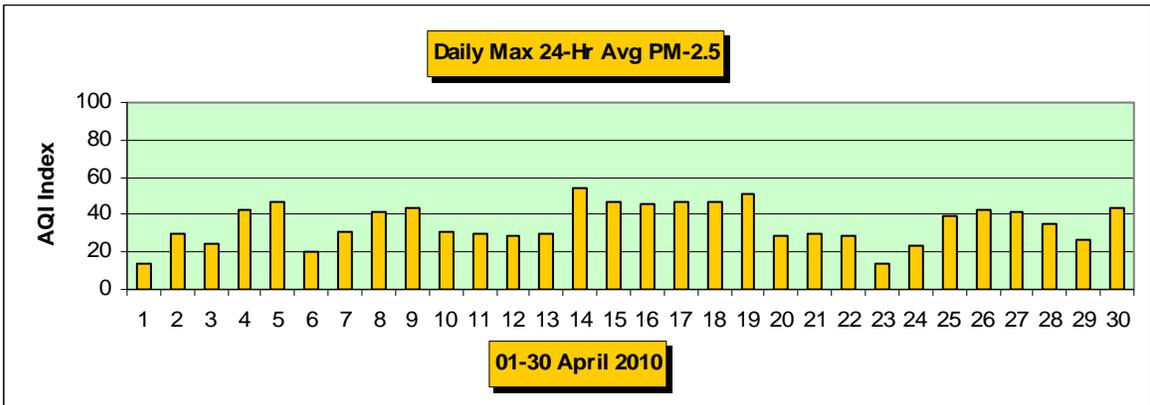
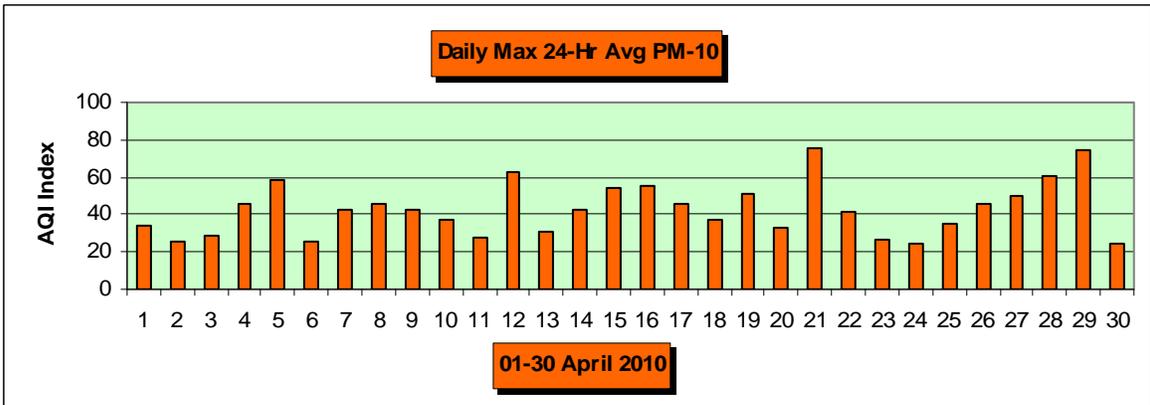
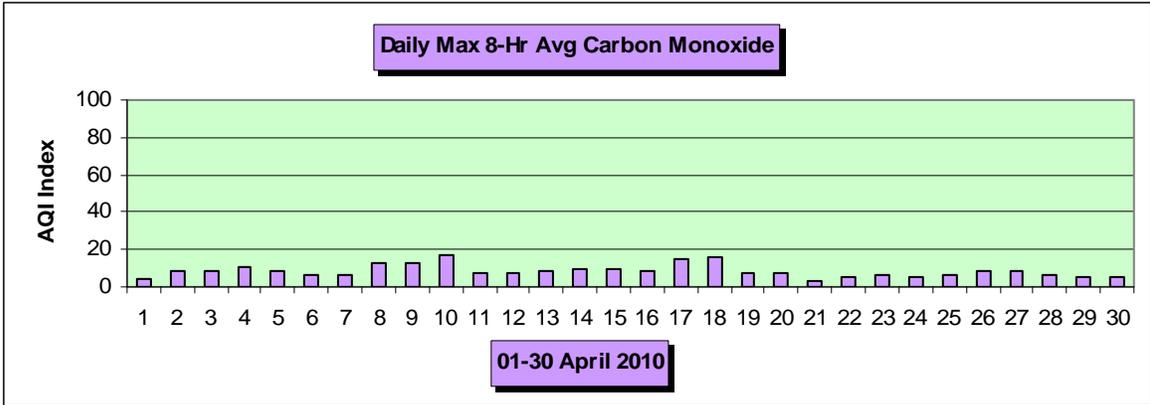
<u>Total=</u>	<u>1</u>	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
		04/28	61	PM-10	West Forty Third

Non-Ozone High Pollution Advisories issued during APR 2010-

<u>Total=</u>	<u>0</u>	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
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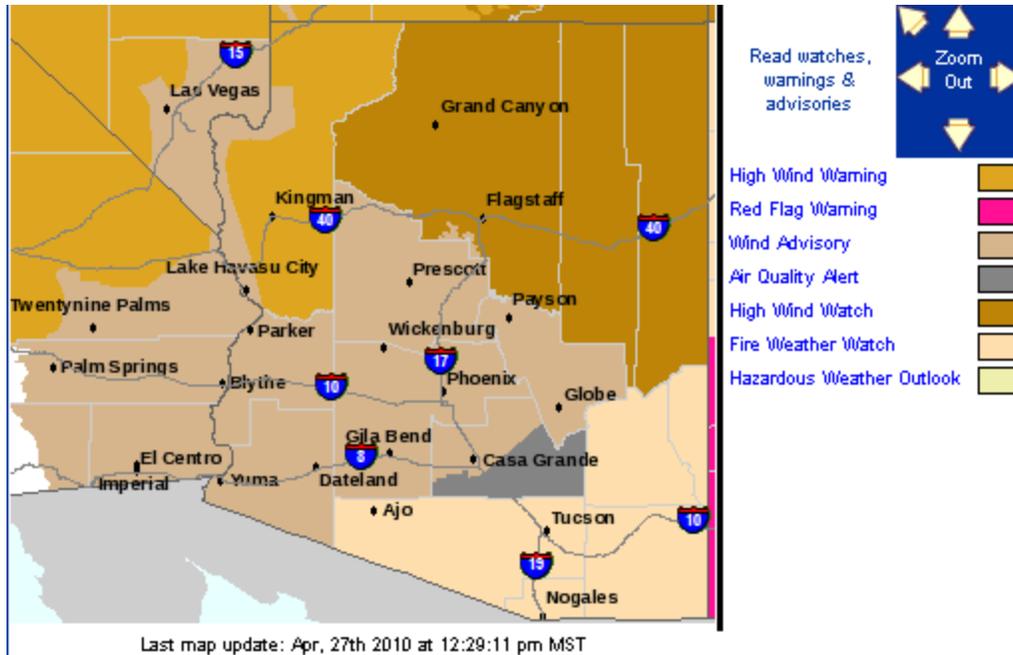
Concentration Recap:

Days in the Good category:	9
Days in the Moderate category:	21
Days in the Unhealthy for Sensitive Groups category:	0
Days in the Unhealthy category:	<u>0</u>
Total Forecast Days:	30

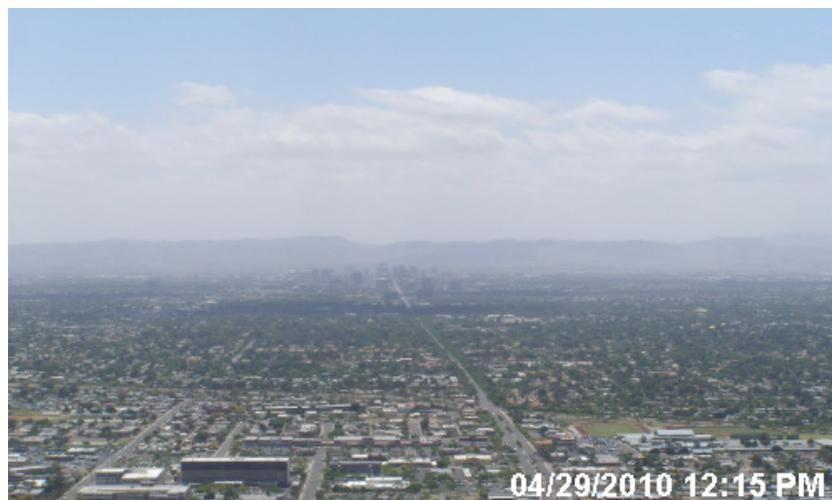


Narrative:

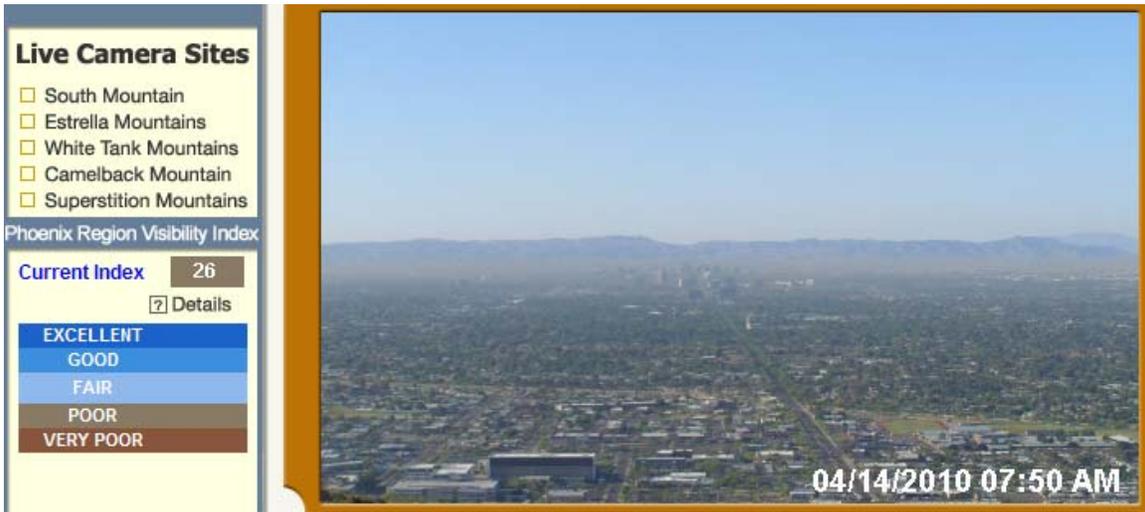
The mid-latitude storm track remained unusually active at this latitude for this time of year delivering a total of seven upper level trough and surface frontal passages during April 2010. The vast majority of these systems were dry for the Phoenix metro area and the ones that were not (1st, 21st, and 22nd) only dropped mostly trace amounts of rain on the Valley. Despite the lack of heavy rainfall, gusty winds of up to 40 mph that accompanied some of the disturbances generated little in the way of significant blowing dust (PM-10). Most of the credit for this goes to the heavy and frequent rainfall that occurred during the first quarter of the year. The storm/wind event that had the highest potential for causing unhealthy levels of coarse particles occurred on the 28th and a Wind Advisory was issued by the National Weather Service for that day. The map below shows that numerous wind statements were in effect that day:



This situation prompted ADEQ to issue a PM-10 Health Watch and although some suspended and blowing dust was observed on that day and again on the 29th (see photo below), no significantly reduced visibilities were reported and highest AQI levels were only in the low to mid-moderate range both days.



Due to the unsettled weather pattern, there were only a few days when the local air mass was stagnant, but none had poor or marginal dispersion. Even so, overnight inversion formation and ridging aloft did contribute to periods of elevated particle pollutant levels and some rather hazy days as can be seen from the graphics below for the 14th of the month. -Reith



DETAILED OZONE SECTION

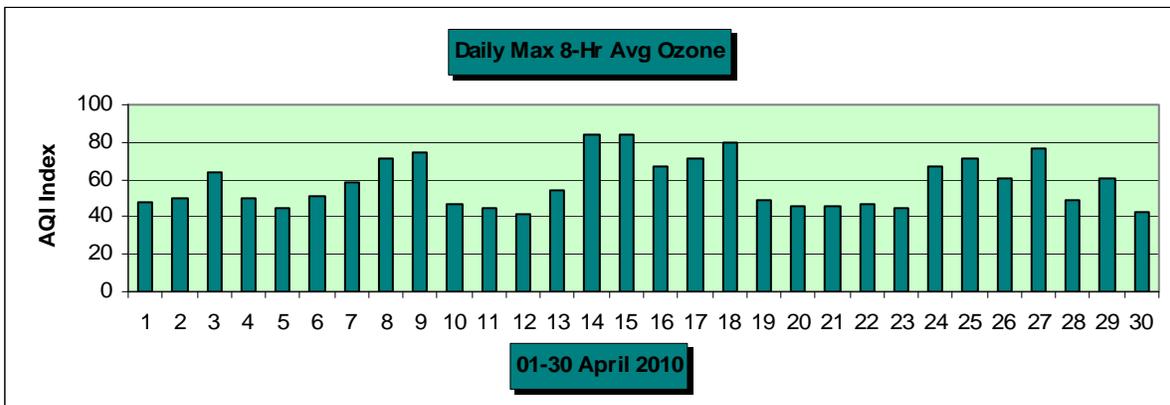
(Based on the 2008 EPA Revised 8-Hour Ozone Standard)

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 2010*

*Preliminary data

SUN		MON		TUES		WED		THU		FRI		SAT	
								1	48	2	50	3	64
4	50	5	45	6	51	7	58	8	71	9	74	10	47
11	45	12	42	13	54	14	84	15	84	16	67	17	71
18	80	19	49	20	46	21	46	22	47	23	45	24	67
25	71	26	61	27	77	28	49	29	61	30	43		



8-hr Ozone exceedance days in APR: Total= 0 Date Max ppb/AQI Site/s

Total number of exceedance days since APR 01: 0

Total number of exceedance sites since APR 01: 0

Ozone Health Watches in APR: Total= 3 Date Max ppb/AQI Site/s
(Forecast max value 72-75 ppb)

	4/15	70/84	Humboldt Mtn.
	4/17	66/71	West Chandler
	4/18	69/80	North Phoenix

Ozone Health Watches since APR 01: Total= 3

High Pollution Advisories in APR: Total= 0
(Forecast max value 76+ppb)

High Pollution Advisories since APR 01: Total= 0

Concentration Recap:

Days in the Good category:	14
Days in the Moderate category:	16
Days in the Unhealthy for Sensitive Groups category:	0
Days in the Unhealthy category:	<u>0</u>
Total Forecast Days:	30

Maximum 8-Hr value:	<u>Date</u>	<u>Hour</u>	<u>Site</u>	<u>ppb/AQI</u>	<u>DOW</u>
	4/14	2100	Humboldt Mtn.	70/84	Wed
	4/15	2400	Humboldt Mtn.	70/84	Thu

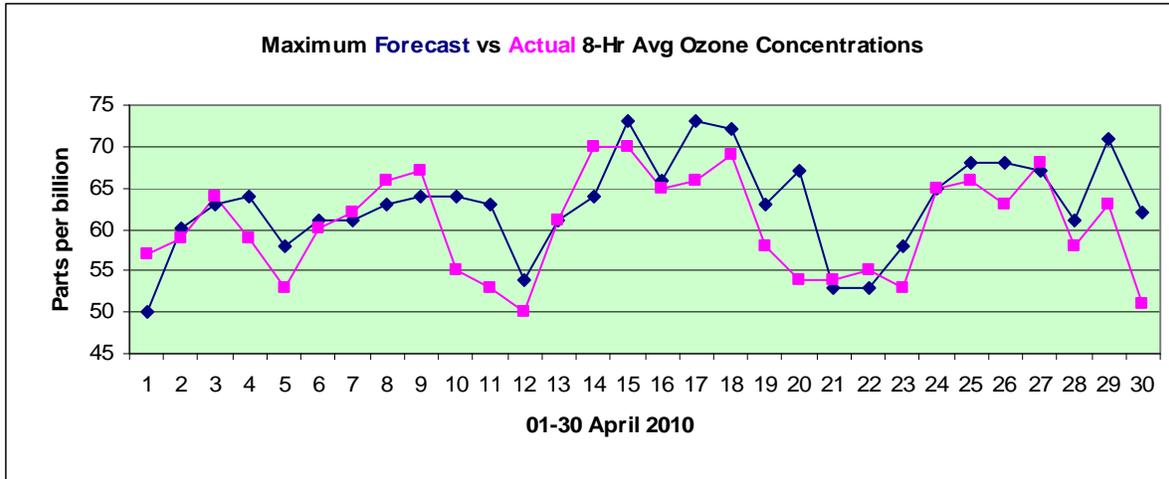
Maximum 1-Hr value:	<u>Date</u>	<u>Hour</u>	<u>Site</u>	<u>ppb/AQI</u>	<u>DOW</u>
	4/15	0200	Humboldt Mtn.	78/65	Thu

Average daily max 8-Hr concentration (ppb): 60.5

Deviation from the 1996-2009 average (ppb): **-5.5**

APR Climatology: Average number of 8-Hr exceedance days: 0.6
(Period 1996-2007 Maximum number of 8-Hr exceedance days: 3 in 2008
using 1997 85ppb Minimum number of 8-Hr exceedance days: 0 in 1997, 2001-2007
standard & 2008- Average daily max 8-Hr concentration (ppb): 66.0
2009 using 76ppb Record high max 8-Hr concentration (ppb): 99 on the 29th, 1996
standard) Record low max 8-Hr concentration (ppb): 40 on the 14th, 2003

Forecast Verification:	# of days maximum concentrations were over-forecast:	18
	# of days maximum concentrations were under-forecast:	10
	# of days maximum concentrations were correctly forecast:	2
	April average forecast accuracy (ppb):	+/-4.2
	April average forecast bias (ppb):	+2.5



Narrative: The same active weather pattern that kept local particle pollution levels relatively low during the month of April also kept ozone concentrations well below their potential. In addition to above average daytime winds and cloud cover, afternoon high temperatures (at Sky Harbor Airport) only reached the 90's on six days during the entire month compared to 11 days with highs in the 60's and 70's. Highest ozone levels tended to coincide with or just following periods during which low-level (5-10K') winds were conducive to transport of additional ozone and/or its precursors from CA – typically following a trough or frontal passage. Many times these episodes also correspond well with significant and anomalous increases in ozone concentrations in communities around AZ with small ozone precursor emission levels of their own. For example, during a suspected transport episode that began late on the 12th, the town of Flagstaff – located at an altitude of 7K' in northern AZ – had a higher 8-hour average ozone concentration on the 13th than Phoenix or any other desert locale in the state, with a reading 12 parts per billion higher than on the 11th. On the 14th Phoenix metro maximum ozone levels rose to 70 parts per billion – up 20 ppb from two days earlier. –Reith