



MONTHLY AIR QUALITY REPORT FOR
MAY 2010

AOI 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 May 2010*

*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

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

SUN		MON		TUES		WED		THU		FRI		SAT	
												1	41 06 39 33
2	51 05 77 40	3	64 07 32 24	4	87 11 50 55	5	77 11 58 51	6	47 06 58 30	7	77 07 44 58	8	48 10 36 43
9	84 05 55 39	10	84 05 42 35	11	84 05 51 32	12	47 07 38 25	13	61 09 42 32	14	90 10 45 44	15	101 07 37 44
16	100 11 36 46	17	49 07 49 34	18	45 05 48 41	19	84 10 35 31	20	74 10 43 36	21	77 16 51 38	22	50 05 56 36
23	50 05 64 36	24	50 05 32 27	25	77 09 41 33	26	97 13 46 44	27	106 10 47 40	28	46 07 48 28	29	84 05 33 23
30	97 09 35 32	31	64 11 29 60										

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

SUN			MON			TUE			WED			THU			FRI			SAT		
																		1		
2		3			4			F			F			6			7			8
9		10			11									13			F			15
16		F			18									20			F			22
23		24			25									27						29
30		31			F															

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 May 2010

SUN			MON			TUE			WED			THU			FRI			SAT		
																		1		
2		D			4									6			7			8
9					E									13			14			15
16					18									20			21			22
23					25									27			28			29
30					31															

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 MAY 2010-

Total= 0 Date Max AQI Pollutant Site/s

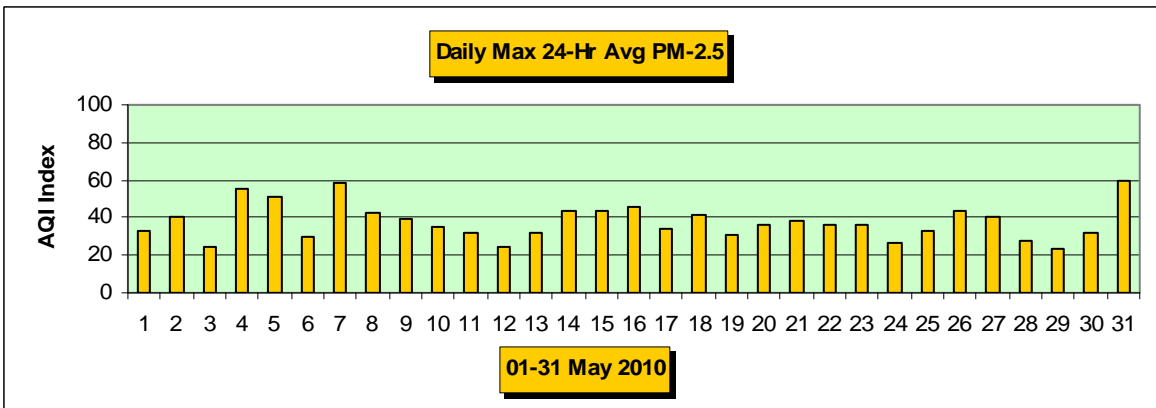
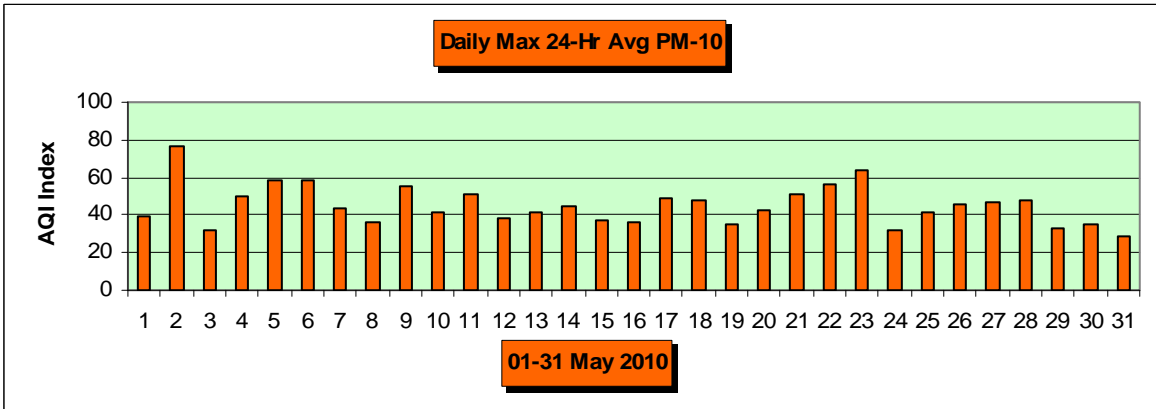
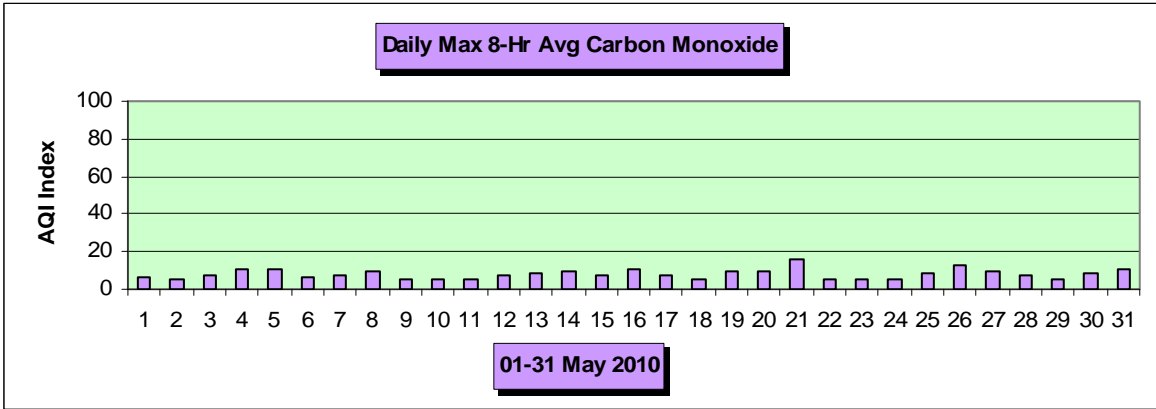
Non-Ozone Health Watches issued during MAY 2010-

Total= 0 Date Max AQI Pollutant Site/s

Non-Ozone High Pollution Advisories issued during MAY 2010-

Total= 0 Date Max AQI Pollutant Site/s

Concentration Recap: Days in the **Good** category: 7
Days in the **Moderate** category: 22
Days in the **Unhealthy for Sensitive Groups** category: 2
Days in the **Unhealthy** category: 0
Total Forecast Days: 31



Narrative:

The mid-latitude storm track continued to exert its influence over the desert southwest with a long-wave upper level trough over or near the state of AZ thru most of the month of May. Several short wave trough and surface frontal passages occurred as well, but all were moisture-starved with no rainfall in the Valley the entire month. This situation made for a rather breezy May in the metro area but by far the strongest wind event occurred on the 2nd. On that day a passing short wave trough led to wind gusts up to 52 mph as well as a blowing dust episode that lasted from noon until 4:00 p.m. with local visibilities as low as nine miles. The highest coarse particle (PM-10) levels of the month were measured on that day, but even those were well below unhealthy levels. The images below of the blowing and suspended dust were captured by the local VISNET camera array. -Reith



DETAILED OZONE SECTION

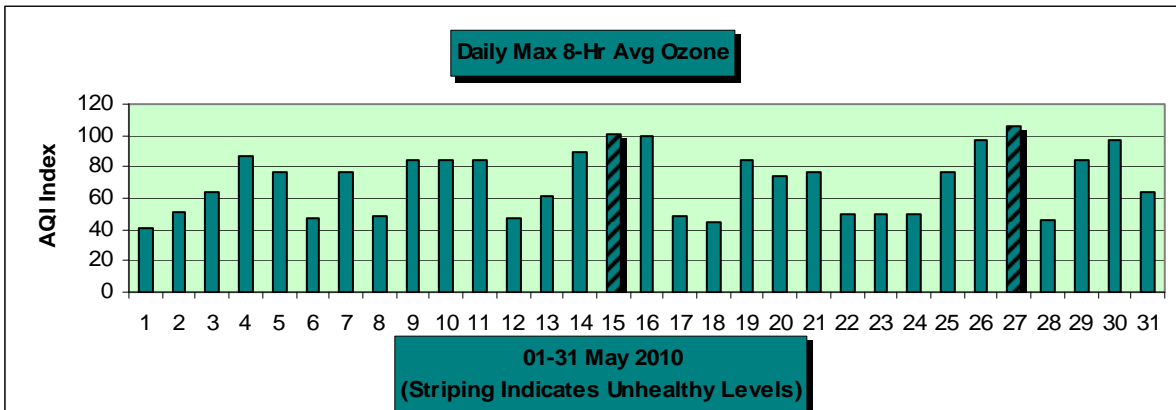
(Based on the 2008 EPA Revised 8-Hour Ozone Standard)

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

SUMMARY OF MAXIMUM 8-HR OZONE AQI VALUES FOR MAY 2010*

*Preliminary data

SUN		MON		TUES		WED		THU		FRI		SAT	
												1	41
2	51	3	64	4	87	5	77	6	47	7	77	8	48
9	84	10	84	11	84	12	47	13	61	14	90	15	101
16	100	17	49	18	45	19	84	20	74	21	77	22	50
23	50	24	50	25	77	26	97	27	106	28	46	29	84
30	97	31	64										



<u>8-hr Ozone exceedance days in MAY:</u>	Total=	2	<u>Date</u>	<u>Max ppb/AQI</u>	<u>Site/s</u>
			5/15	76/101	North Phoenix
				76/101	West Chandler
			5/27	78/106	Fountain Hills
				76/101	Blue Point

Total number of exceedance days since APR 01: 2
Total number of exceedance sites since APR 01: 4

<u>Ozone Health Watches in MAY:</u> (Forecast max value 72-75 ppb)	Total=	8	<u>Date</u>	<u>Max ppb/AQI</u>	<u>Site/s</u>
			5/04	71/87	North Phoenix
			5/05	68/77	Rio Verde
			5/13	63/61	North Phoenix
				63/61	Queen Valley
			5/14	72/90	Tonto Nat'l Mon
			5/16	75/100	Dysart
			5/20	67/74	Rio Verde
				67/74	Tonto Nat'l Mon
			5/26	74/97	North Phoenix
			5/31	64/64	North Phoenix

Ozone Health Watches since APR 01: Total= 11

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

High Pollution Advisories since APR 01: Total= 0

Concentration Recap: Days in the **Good** category: 9
Days in the **Moderate** category: 20
Days in the **Unhealthy for Sensitive Groups** category: 2
Days in the **Unhealthy** category: 0
Total Forecast Days: 31

Maximum 8-Hr value:	<u>Date</u>	<u>Hour</u>	<u>Site</u>	<u>ppb/AQI</u>	<u>DOW</u>
	5/27	1100	Fountain Hills	78/106	Thu

Maximum 1-Hr value:	<u>Date</u>	<u>Hour</u>	<u>Site</u>	<u>ppb/AQI</u>	<u>DOW</u>
	5/27	1600	Fountain Hills	93/78	Thu

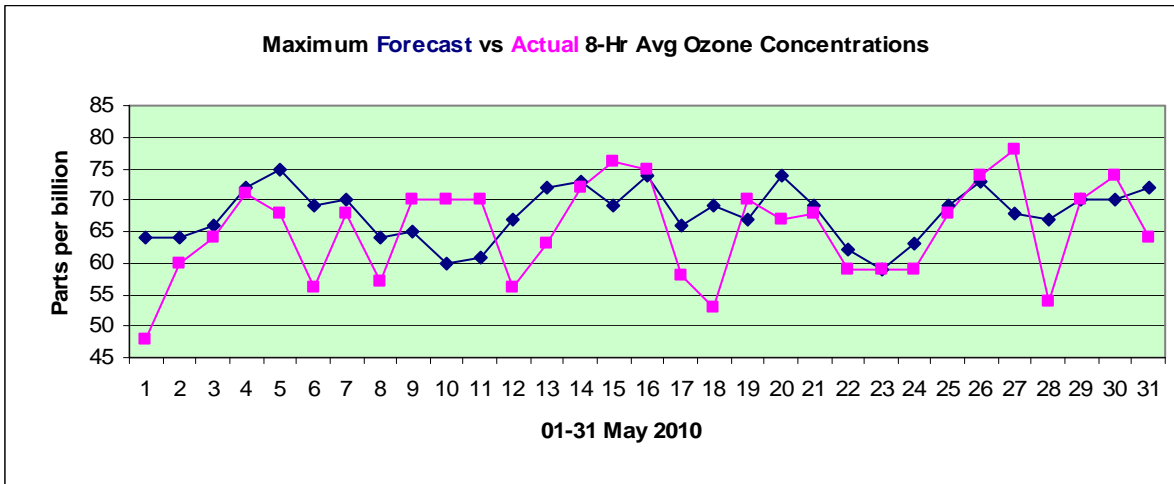
Average daily max 8-Hr concentration (ppb): 65.1
Deviation from the 1996-2009 average (ppb): **-6.2**

MAY Climatology:
 (Period 1996-2007
 using 1997 85ppb
 standard & 2008-
 2009 using 76ppb
 standard)

Average number of 8-Hr exceedance days:	3.0
Maximum number of 8-Hr exceedance days:	10 in 1996
Minimum number of 8-Hr exceedance days:	0 in 1997, 2001, 04, 07
Average daily max 8-Hr concentration (ppb):	65.1
Record high max 8-Hr concentration (ppb):	105 on the 21st, 1996
Record low max 8-Hr concentration (ppb):	46 on the 20th, 1997

Forecast Verification:

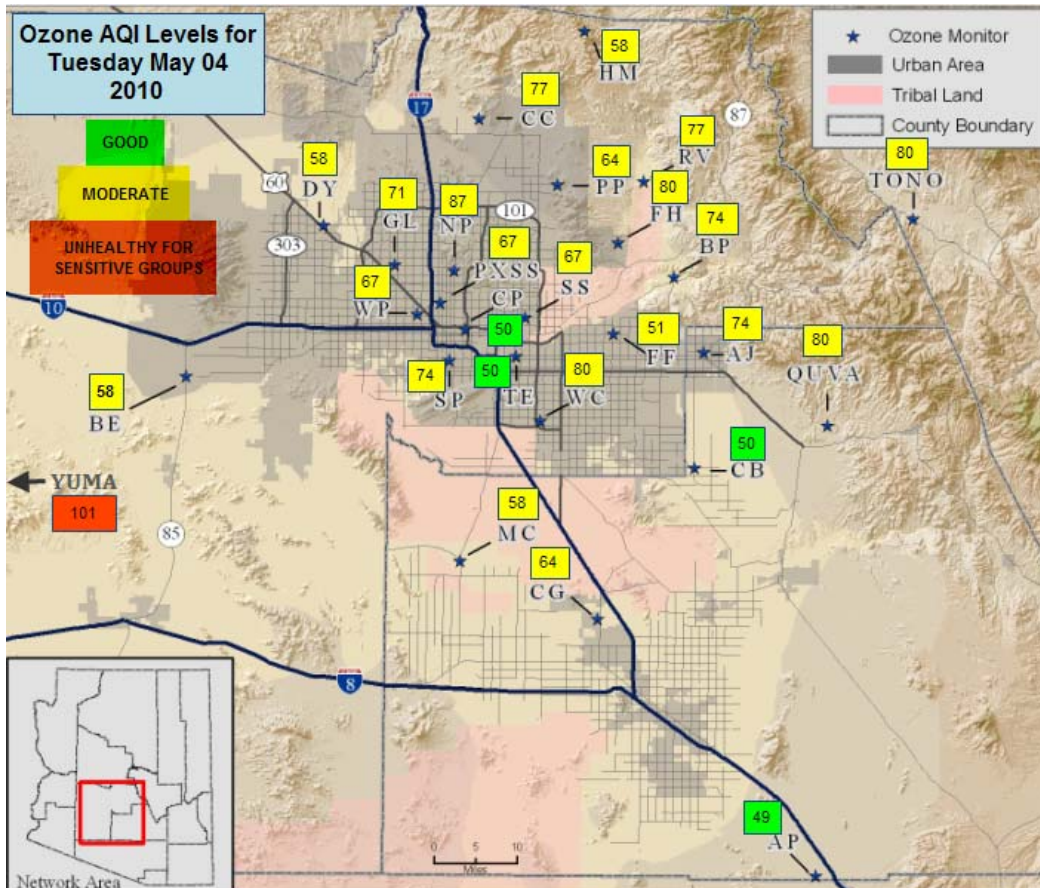
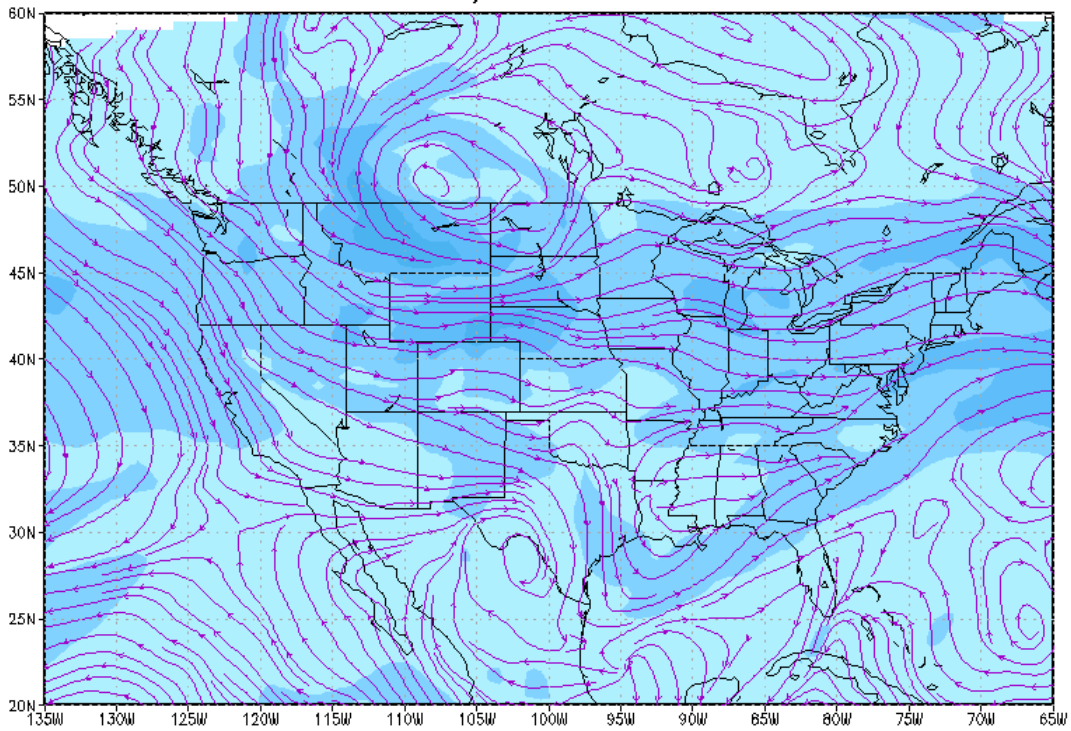
# of days maximum concentrations were over-forecast:	20
# of days maximum concentrations were under-forecast:	9
# of days maximum concentrations were correctly forecast:	2
May average forecast accuracy (ppb):	+/-5.9
May average forecast bias (ppb):	+2.7



Narrative:

An active storm track at relatively low latitudes helped keep Valley ozone levels below their potential much of the month due to below average daytime temperatures (highs reached the 100-degree mark at Sky Harbor Airport on only two days), and persistent afternoon winds. There were numerous days during which low-level winds were capable of transporting additional ozone and its precursors from CA to AZ and this may help to explain some of the many significant 24-hour changes in metro Phoenix ozone levels. This transport also affected other areas of the state. For instance, at Yuma – located near the Arizona/California border – the 8-hour ozone AQI level rose from 49 (good range) on Monday May 3 to 101 (unhealthy for sensitive groups range) on Tuesday May 4 then back to 48 (good range) on Wednesday May 5. The graphics below show the wind streamline pattern at the 10K’ level on May 4, as well as the peak ozone AQI levels over AZ on that day:

GFS 700MB 24HR STREAMS/ISOTACHS FCST 12Z 04-MAY-2010



In contrast, the two ozone exceedance days recorded in the Phoenix metro area for the month (15th and 27th) occurred during non-transport days and so could be classified as “home-grown” events. Surface winds in the local area were frequently light or calm on the 15th and in the 5-20 mph range on the 27th under mostly sunny skies and with afternoon high temperatures in the middle 90’s. The map below shows the spatial characteristics of Valley max ozone AQI levels for the 15th. Note that most of the highest readings are located over or adjacent to the central population district. -Reith

