



MONTHLY AIR QUALITY REPORT FOR
JUNE 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 June 2010*

*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

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

SUN			MON			TUES			WED			THU			FRI			SAT		
						1	50	08	2	67	07	3	61	08	4	54	07	5	58	09
							36	30		47	30		46	45		48	34		45	39
6	49	05	7	47	08	8	51	07	9	64	07	10	41	07	11	54	07	12	71	08
	37	27		50	35		41	38		40	41		52	34		53	37		56	33
13	61	09	14	87	10	15	90	11	16	64	09	17	100	11	18	77	11	19	80	06
	30	31		32	37		40	48		44	45		43	37		42	41		32	26
20	84	06	21	61	07	22	114	08	23	124	11	24	114	14	25	77	06	26	50	07
	31	29		39	30		44	40		49	44		56	44		44	31		40	54
27	49	08	28	106	10	29	122	06	30	93	06									
	36	28		63	45		46	34		40	27									

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

SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4	5 C
6 C	7	8	9	10	11	12
13	14	15 F	16	17	18 F	19
20	21	22	23 F	24 C	25 F	26
27	28 F	29 C	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 June 2010

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

Total= 0 Date Max AQI Pollutant Site/s

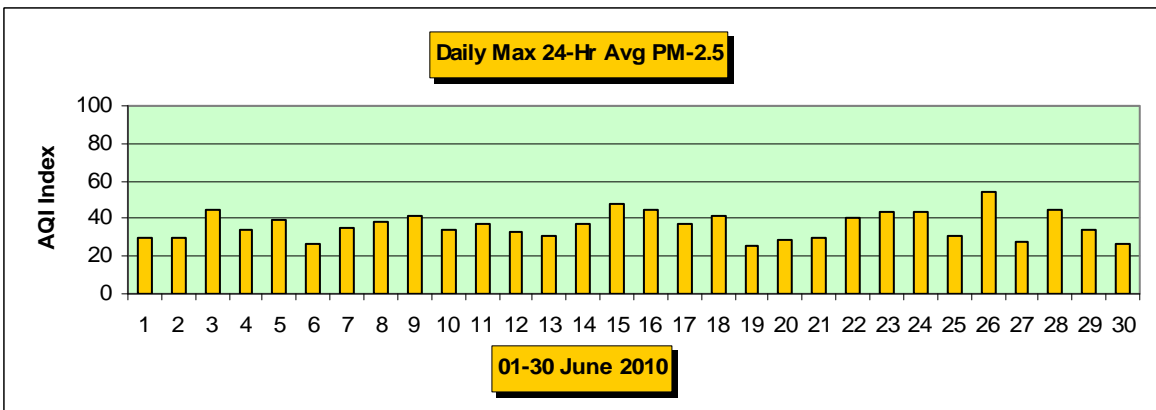
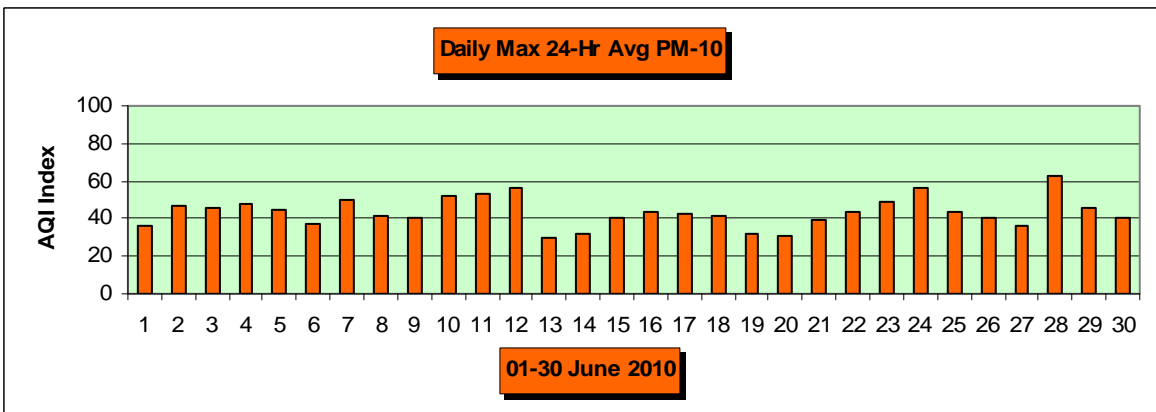
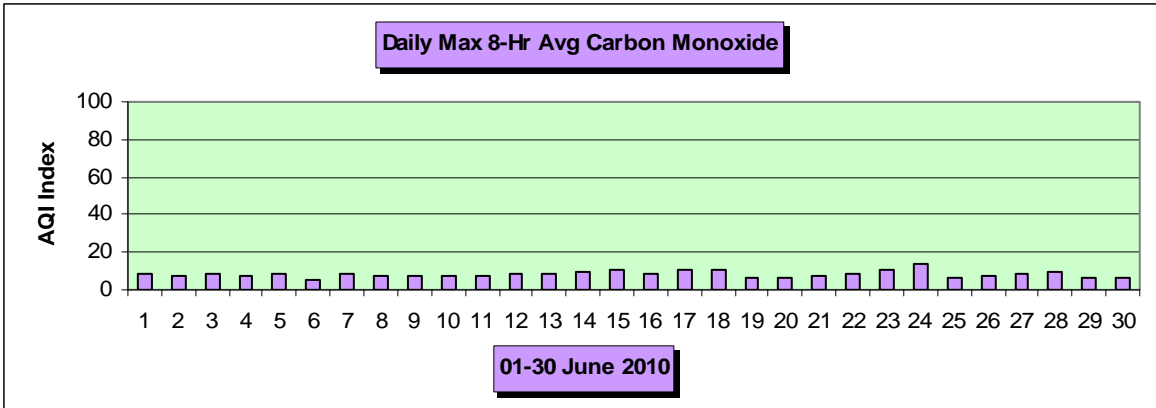
Non-Ozone Health Watches issued during JUN 2010-

Total= 0 Date Max AQI Pollutant Site/s

Non-Ozone High Pollution Advisories issued during JUN 2010-

Total= 0 Date Max AQI Pollutant Site/s

Concentration Recap: Days in the **Good** category: 4
Days in the **Moderate** category: 21
Days in the **Unhealthy for Sensitive Groups** category: 5
Days in the **Unhealthy** category: 0
Total Forecast Days: 30



Narrative: The mid-latitude storm track finally began to lose some of its influence on the weather in AZ in general and in the Phoenix area in particular during the month of June. Even so, a weak upper level low and trough passage on the 12th brought the only rainfall event of the month to the Valley; however, only trace amounts were reported. Gradient winds associated with these features were strong enough to produce some areas of blowing dust on the 11th and 12th, but highest PM-10 (coarse particle) levels only made it into the low-moderate range of the Air Quality Index. During the last week of the month a summer monsoon weather pattern began to evolve over AZ, and on five days during the June 24-30 period thunderstorm outflow boundaries reached the metro area with wind gusts as high as 35 mph (28th) and visibilities as low as 1/4 mile (28th) due to blowing dust. The highest PM-10 AQI level of the month (63) occurred on that date. -Reith

DETAILED OZONE SECTION

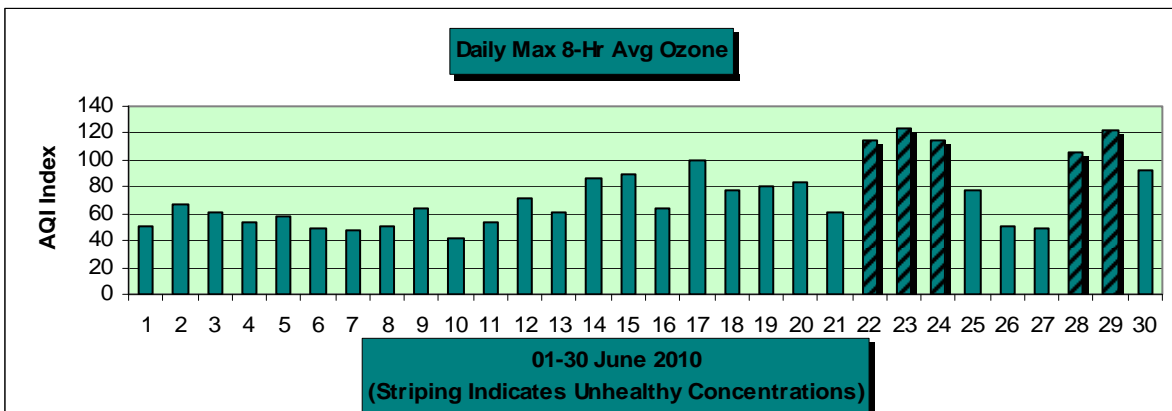
(Based on the 2008 EPA Revised 8-Hour Ozone Standard)

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

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

*Preliminary data

SUN		MON		TUES		WED		THU		FRI		SAT	
				1	50	2	67	3	61	4	54	5	58
6	49	7	47	8	51	9	64	10	41	11	54	12	71
13	61	14	87	15	90	16	64	17	100	18	77	19	80
20	84	21	61	22	114	23	124	24	114	25	77	26	50
27	49	28	106	29	122	30	93						



<u>8-hr Ozone exceedance days in JUN</u>	Total= 5	<u>Date</u>	<u>Max ppb/AQI</u>	<u>Site/s</u>
		6/22	81/114	Fountain Hills
			81/114	Tonto Nat'l Mon
			80/111	Pinnacle Peak
			79/109	North Phoenix
			78/106	Cave Creek
			78/106	Rio Verde
			78/106	South Scottsdale
			77/104	Phx Supersite
		6/23	85/124	North Phoenix
			83/119	West Chandler
			80/111	Phx Supersite
			80/111	South Scottsdale
			78/106	Fountain Hills
			78/106	West Phoenix
			77/104	Apache Junction
			77/104	Central Phoenix
			77/104	Glendale
			77/104	Pinnacle Peak
			76/101	South Phoenix
		6/24	81/114	North Phoenix
			78/106	Apache Junction
			76/101	Phx Supersite
			76/101	South Scottsdale
		6/28	78/106	North Phoenix
		6/29	84/122	North Phoenix
			83/119	Glendale
			82/116	Dysart
			82/116	West Phoenix
			81/114	Phx Supersite
			78/106	Central Phoenix
			78/106	South Scottsdale

Total number of exceedance days since APR 01: 7
Total number of exceedance sites since APR 01: 35

<u>Ozone Health Watches in JUN:</u> (Forecast max value 72-75 ppb)	Total= 6	<u>Date</u>	<u>Max ppb/AQI</u>	<u>Site/s</u>
		6/04	61/54	Tonto Nat'l Mon
		6/15	72/90	Tonto Nat'l Mon
		6/18	68/77	North Phoenix
		6/23	85/124	North Phoenix
		6/25	68/77	North Phoenix
		6/28	78/106	North Phoenix

Ozone Health Watches since APR 01: Total= 17

<u>High Pollution Advisories in JUN:</u>	Total= 4	<u>Date</u>	<u>Max ppb/AQI</u>	<u>Site/s</u>
(Forecast max value 76+ppb)		6/05	62/58	Tonto Nat'l Mon
		6/06	58/49	Apache Junction
			58/49	Tonto Nat'l Mon
		6/24	81/114	North Phoenix
		6/29	84/122	North Phoenix

High Pollution Advisories since APR 01: Total= 4

Concentration Recap: Days in the **Good** category: 6
Days in the **Moderate** category: 19
Days in the **Unhealthy for Sensitive Groups** category: 5
Days in the **Unhealthy** category: 0
Total Forecast Days: 30

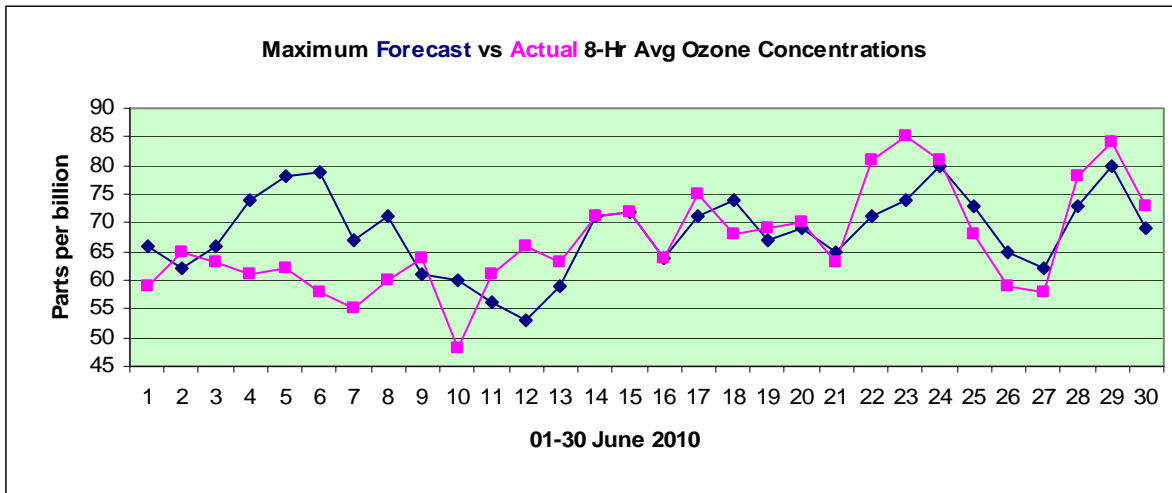
Maximum 8-Hr value: Date Hour Site ppb/AQI DOW
6/23 1000 North Phoenix 85/124 Wed

Maximum 1-Hr value: Date Hour Site ppb/AQI DOW
6/23 1500 Fountain Hills 97/81 Wed

Average daily max 8-Hr concentration (ppb): 66.8
Deviation from the 1996-2009 average (ppb): **-4.0**

JUN Climatology: Average number of 8-Hr exceedance days: 3.4
(Period 1996-2007 using 1997 85ppb standard & 2008-2009 using 76ppb standard) Maximum number of 8-Hr exceedance days: 10 in 2008
Minimum number of 8-Hr exceedance days: 0 in 2003, 2004, 2007
Average daily max 8-Hr concentration (ppb): 70.8
Record high max 8-Hr concentration (ppb): 102 on the 1st, 1996
Record low max 8-Hr concentration (ppb): 43 on the 9th, 2009

Forecast Verification: # of days maximum concentrations were over-forecast: 13
of days maximum concentrations were under-forecast: 14
of days maximum concentrations were correctly forecast: 3
Jun average forecast accuracy (ppb): +/-6.3
Jun average forecast bias (ppb): +1.6



Narrative:

During the first half of the month local ozone levels were relatively low despite sparse cloud cover and afternoon high temperatures in the 100-110 deg F range on most days. A likely mitigating factor was the continued proximity of an active mid-latitude storm track. From the 1st thru the 18th all but three days had south to westerly afternoon gradient winds in the 10-20 mph range with gusts near 25 mph. During the summer months this situation usually results in low ozone concentrations in the Phoenix metro area due to the transport of nearly ozone precursor-free air from the sparsely populated desert areas upwind of the Valley. In addition, this horizontal movement of air inhibits much in the way of ozone plume formation. The synoptic weather pattern began to change on the 19th as the sub-topical “monsoon” ridge aloft began migrating toward AZ from the east. As mid-level moisture increased, thunderstorm activity began to increase over the higher terrain east of the metro area and the first outflow boundary of the season reached the Valley very late on the 24th. In the meantime, low-level winds slackened and a major high ozone episode occurred from the 22nd thru the 24th during which period 23 site exceedances occurred. Figures 1 and 2 below are maps that illustrate the location of the exceedances that were monitored on the 22nd and 23rd. By the 27th winds over the area had become east or southeasterly thru a deep layer as the upper level high became established to the north of AZ. A second unhealthy ozone period then followed on the 28th and 29th with another eight site exceedances. Figure 3 showing the geographical distribution of ozone exceedances for the season thru June 29 is striking in that unhealthy levels of ozone are concentrated over or near the central portion of the Phoenix metro area. This is atypical for the April – June period in that most exceedances during the first half of the season are usually concentrated downwind (east) of the central city. The final graphic (figure 4) shows the daily max ozone concentration line curve for April 01-June 30 2010 against the 14-year average. As can be seen, ozone readings have been below average during much of the period in contrast to the ozone outbreak in late June. -Reith

Figure 1

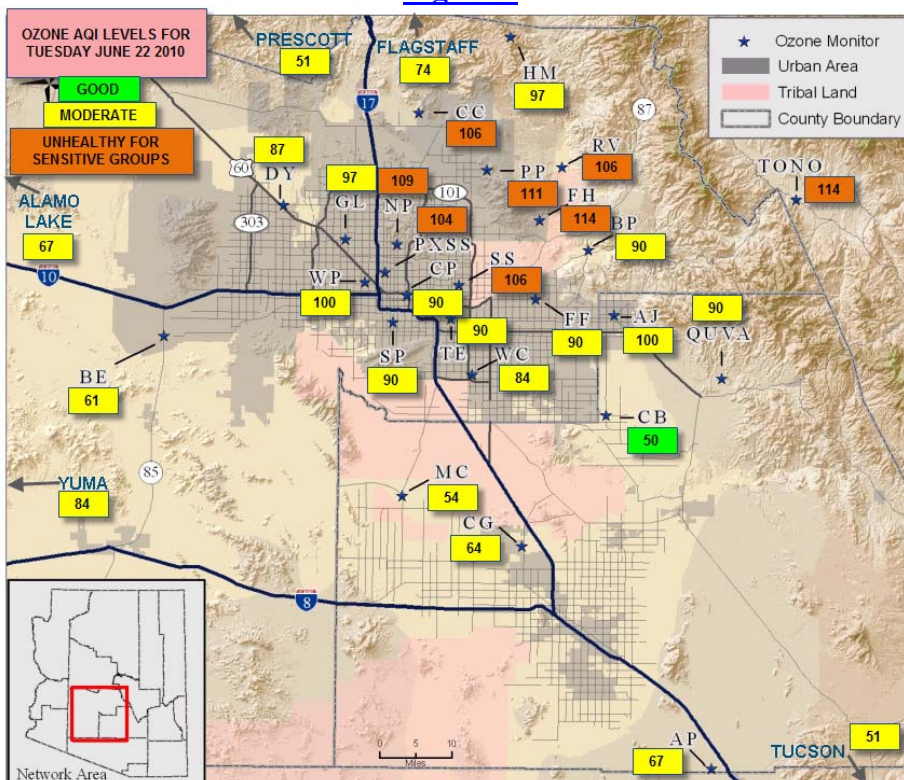


Figure 2

