



**MONTHLY AIR QUALITY REPORT FOR
MAY 2009**

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 May 2009*

*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

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

SUN		MON		TUES		WED		THU		FRI		SAT								
										1	93	09	2	42	04					
											49	48		53	32					
3	46	06	4	84	08	5	49	10	6	90	09	7	93	10	8	84	08	9	54	07
	42	35		52	45		62	45		52	42		53	44		51	47		35	31
10	71	06	11	58	08	12	47	07	13	61	07	14	51	09	15	64	07	16	77	06
	37	41		41	41		48	37		53	45		52	44		46	50		46	42
17	104	10	18	100	07	19	97	07	20	54	07	21	43	07	22	42	09	23	58	08
	62	53		59	55		44	34		41	33		38	36		17	40		19	36
24	49	08	25	48	06	26	58	08	27	54	09	28	80	10	29	80	08	30	49	05
	21	35		24	32		33	29		45	31		40	33		36	26		30	26
31	47	08																		
	24	25																		

Calendar of High Pollution Advisories and Health Watches issued during May 2009

SUN			MON			TUE			WED			THU			FRI			SAT		
															1		C	2		
3		4		F			F			C		7		C	8				F	
10		11									F	14			15				F	
17		18		F								21			22					
24		25									F	28		F	29					
31																				

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 2009

SUN			MON			TUE			WED			THU			FRI			SAT		
															1		E	2		
3		4									E	7			8		E			
10		11					E			E		14		E	15					
17	B	18	A B D				B			B		21		B	22		B C			
24		25									D	28		D	29					
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 2009-

Total= 0 Date Max AQI Pollutant Site/s

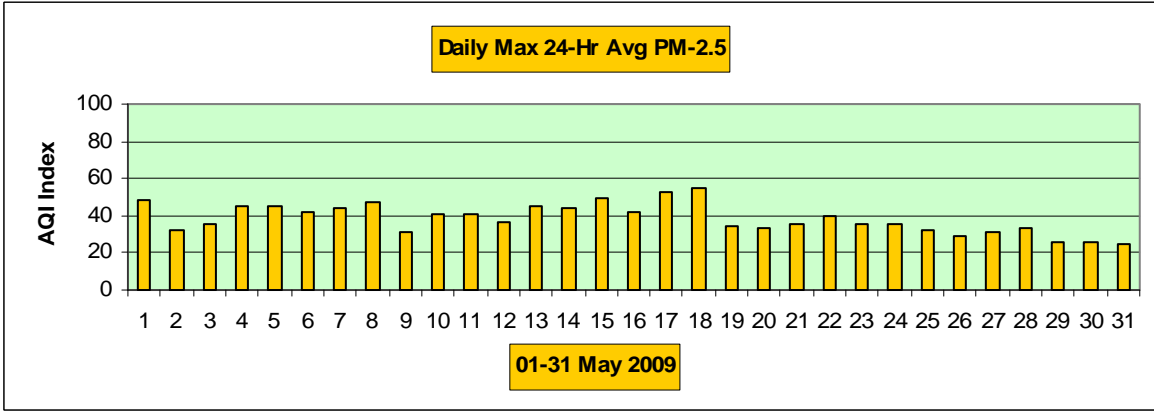
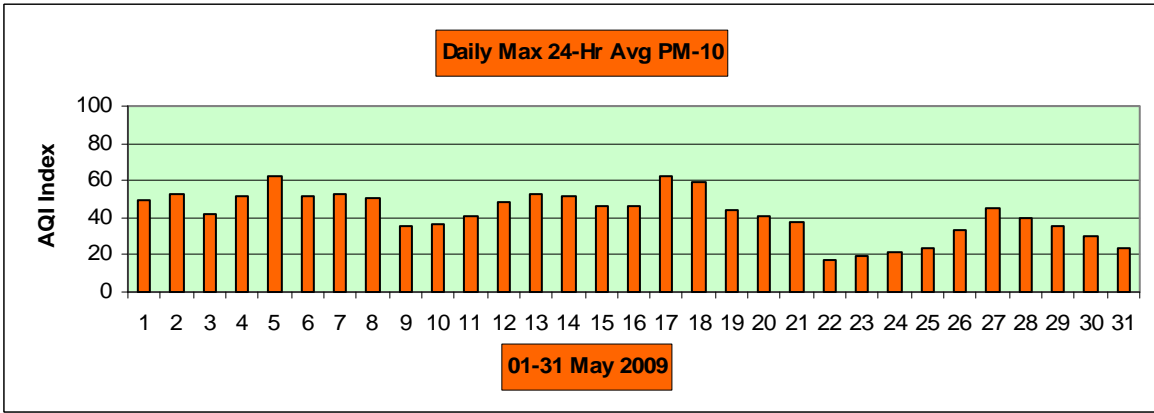
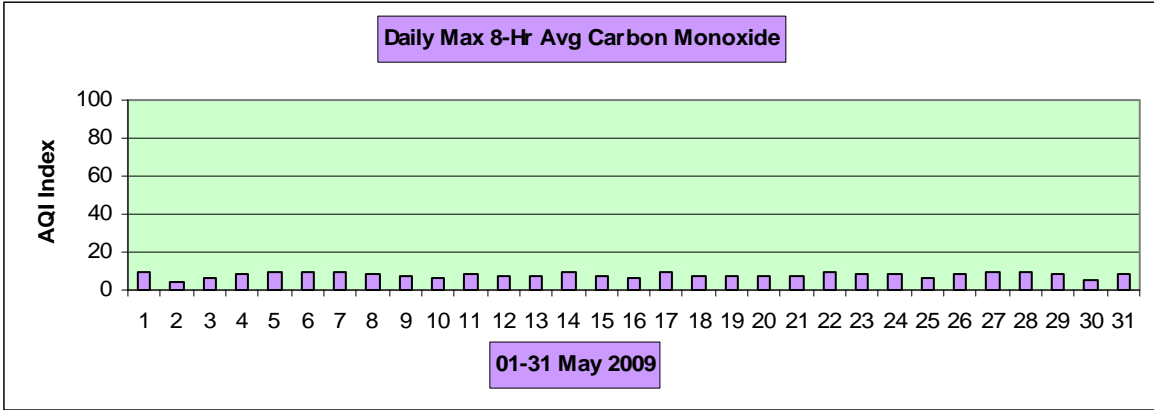
Non-Ozone Health Watches issued during MAY 2009-

Total= 0 Date Max AQI Pollutant Site/s

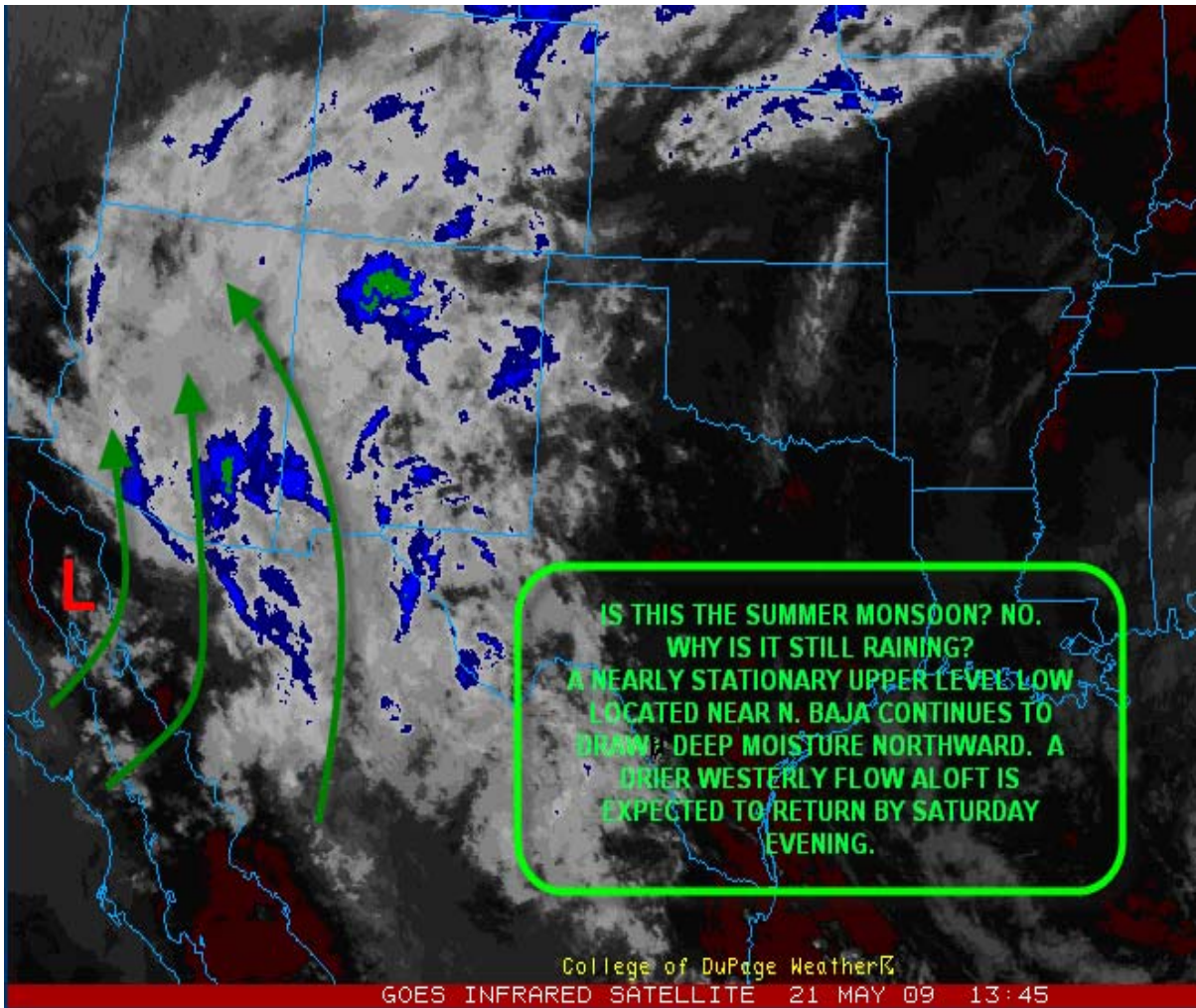
Non-Ozone High Pollution Advisories issued during MAY 2009-

Total= 0 Date Max AQI Pollutant Site/s

Concentration Recap: Days in the **Good** category: 8
Days in the **Moderate** category: 22
Days in the **Unhealthy for Sensitive Groups** category: 1
Days in the **Unhealthy** category: 0
Total Forecast Days: 31



Narrative: There were no local particle pollution problems to speak of during May 2009. With afternoon temperatures that ranged from 90-107 deg F (at Sky Harbor Airport), and best mixing depths that ranged from 6,300 to 17,000 feet, air mass stagnation was for the most part non-existent. There were only three episodes of blowing dust (18th, 27th, and 28th), but they were short-lived and had little impact on 24-hour PM-10 (coarse particle) levels. In all three cases the strong winds that generated the blowing dust originated from thunderstorm outflow boundaries – fairly atypical for the month of May. Also helping to keep PM-10 levels in check were seven straight days with mostly light rain (17th thru the 23rd); the last three days were associated with a lengthy fetch of sub-tropical moisture drawn northward by a low-latitude system in the southern branch of the mid-latitude storm track. The graphic below illustrates the synoptic weather pattern that was in existence on May 21. -Reith



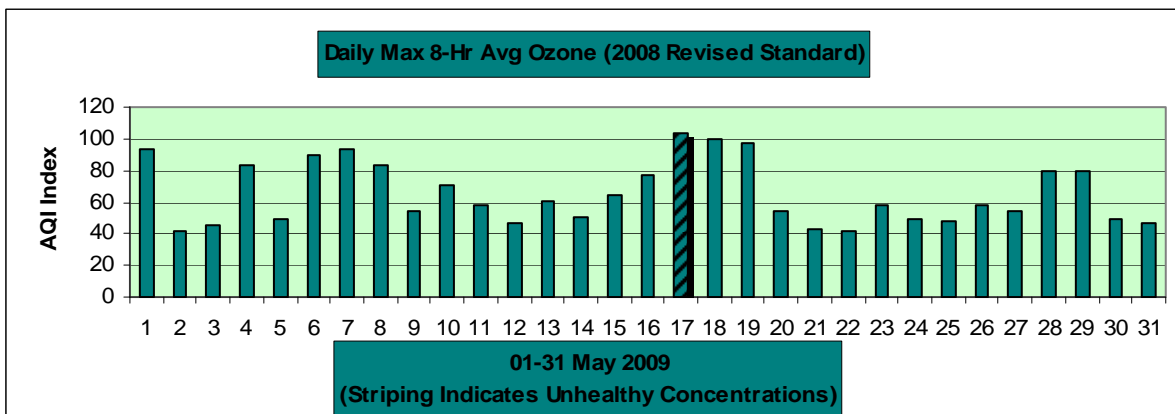
DETAILED OZONE SECTION
 (Based on the 2008 EPA Revised 8-Hour Ozone Standard)

GOOD 0-50	MODERATE 51-100	UNHEALTHY FOR SENSITIVE GROUPS 101-150	UNHEALTHY 151-200
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SUMMARY OF MAXIMUM 8-HR OZONE AQI VALUES FOR MAY 2009*

*Preliminary data

SUN		MON		TUES		WED		THU		FRI		SAT	
										1	93	2	42
3	46	4	84	5	49	6	90	7	93	8	84	9	54
10	71	11	58	12	47	13	61	14	51	15	64	16	77
17	104	18	100	19	97	20	54	21	43	22	42	23	58
24	49	25	48	26	58	27	54	28	80	29	80	30	49
31	47												



<u>8-hr Ozone exceedance days in MAY:</u>	Total= 1	<u>Date</u>	<u>Max ppb/AQI</u>	<u>Site/s</u>
		5/17	77/104	Dysart
			77/104	Phx Supersite
			76/101	Glendale
			76/101	North Phoenix

Total number of exceedance days since APR 01: 2
Total number of exceedance sites since APR 01: 6

<u>Ozone Health Watches in MAY:</u> (Forecast max value 72-75 ppb)	Total= 10	<u>Date</u>	<u>Max ppb/AQI</u>	<u>Site/s</u>
		5/04	70/84	Tonto Nat'l Mon
		5/05	58/49	Tonto Nat'l Mon
		5/08	70/84	Tonto Nat'l Mon
		5/13	63/61	Cave Creek
			63/61	Fountain Hills
		5/15	64/64	Tonto Nat'l Mon
		5/16	68/77	Tonto Nat'l Mon
		5/17	77/104	Dysart
			77/104	Phx Supersite
		5/18	75/100	North Phoenix
		5/27	61/54	Humboldt Mtn.
		5/28	69/80	North Phoenix
			69/80	West Chandler

Ozone Health Watches since APR 01: Total= 13

<u>High Pollution Advisories in MAY:</u> (Forecast max value 76+ppb)	Total= 3	<u>Date</u>	<u>Max ppb/AQI</u>	<u>Site/s</u>
		5/01	73/93	Tonto Nat'l Mon
		5/06	72/90	Tonto Nat'l Mon
		5/07	73/93	Tonto Nat'l Mon

High Pollution Advisories since APR 01: Total= 4

Concentration Recap: Days in the **Good** category: 10
Days in the **Moderate** category: 20
Days in the **Unhealthy for Sensitive Groups** category: 1
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>
	5/17	1100	Dysart	77/104	Sun
	5/17	1100	Phx Supersite	77/104	Sun

Maximum 1-Hr value:	<u>Date</u>	<u>Hour</u>	<u>Site</u>	<u>ppb/AQI</u>	<u>DOW</u>
	5/07	1800	Tonto Nat'l Mon	84/70	Thu
	5/17	1500	North Phoenix	84/70	Sun
	5/19	1300	North Phoenix	84/70	Tue
	5/19	1500	Scottsdale	84/70	Tue

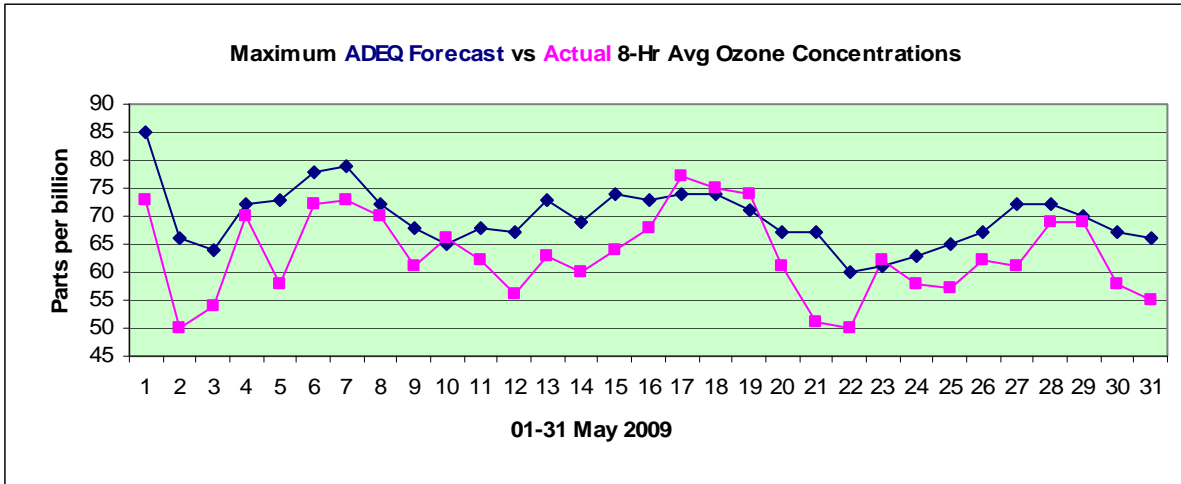
Average daily max 8-Hr concentration (ppb): 63.2
Deviation from the 1996-2008 average (ppb): -8.7

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

Average number of 8-Hr exceedance days:	3.2
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):	71.9
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:	26
# of days maximum concentrations were under-forecast:	5
# of days maximum concentrations were correctly forecast:	0
May average forecast accuracy (ppb):	+/-7.1
May average forecast bias (ppb):	+6.8



Narrative:

Valley 8-hour ozone levels continued their below average spring-time trend during May 2009. The nearly nine parts per billion average daily concentration deficit was the greatest departure (+ or -) seen in many years. Thru the end of the month only two exceedance days and six site exceedances had occurred for the season that began on April 1. At the same point in 2008 the count was seven days and 32 sites. The one near-to-unhealthy episode that did occur on May 17 and 18 was during a rare (for May) low-level easterly wind regime that can be commonplace during the heart of the summer monsoon in July and August. During such episodes easterly wind flow directly opposes the normal afternoon westerly up-valley winds that develop due to local terrain features and intense daytime heating. This in turn holds the Valley ozone plume in place overhead and rapid accumulation is a frequent result. Also, the two hottest days of the month (at Sky Harbor Airport) coincided with this episode – 107 deg F on the 17th and 106 deg F on the 18th. The AIRNOW graphic below illustrates this classic easterly wind regime with its signature of unhealthy ozone levels over the central and west metro area – directly opposite to that seen the vast majority of the time. –Reith

