



**MONTHLY AIR QUALITY REPORT FOR  
SEPTEMBER 2004**

AQI COLOR SCALE

<b>GOOD</b>  0-50	<b>MODERATE</b>  51-100	<b>UNHEALTHY FOR SENSITIVE GROUPS</b>  101-150	<b>UNHEALTHY</b>  151-200
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Calendar of maximum AQI values & their corresponding color for  
September 2004\*

\*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

<b>1</b> (day of month)	<b>O3</b>	<b>CO</b>
	<b>PM10</b>	<b>PM2.5</b>

SUN		MON		TUES		WED		THU		FRI		SAT								
						1	82	14	2	54	25	3	42	08	4	46	16			
							74	39		78	37		85	53		48	32			
5	61	18	6	74	24	7	66	19	8	72	11	9	90	17	10	82	20	11	72	23
	42	31		43	20		72	34		75	36		68	41		70	36		68	40
12	77	10	13	42	14	14	43	09	15	47	17	16	47	30	17	46	24	18	41	33
	55	41		58	31		50	27		65	28		70	37		74	38		75	35
19	38	06	20	47	09	21	49	10	22	46	20	23	49	26	24	49	34	25	45	23
	29	29		59	43		43	23		63	25		61	30		79	32		45	29
26	44	13	37	61	19	28	47	25	29	38	08	30	40	17						
	26	20		56	28		62	35		49	19		45	28						

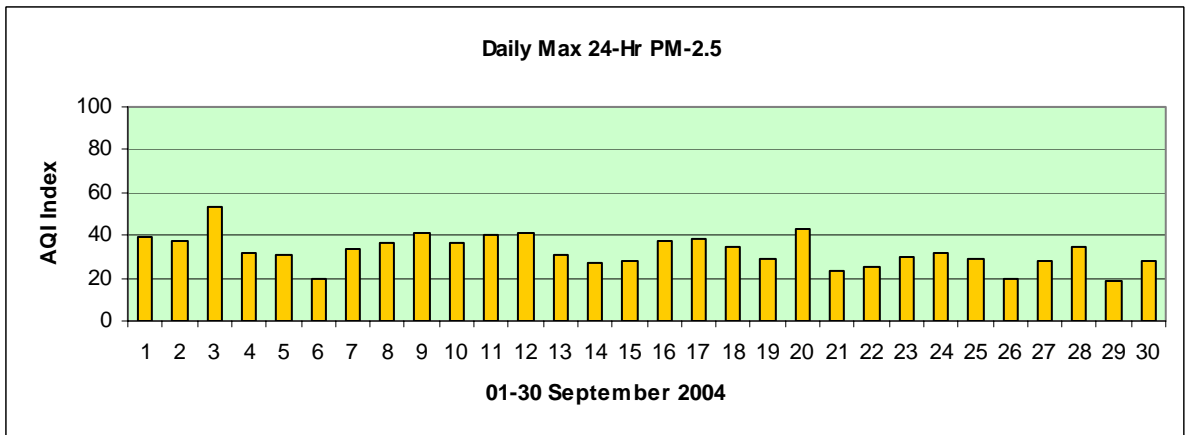
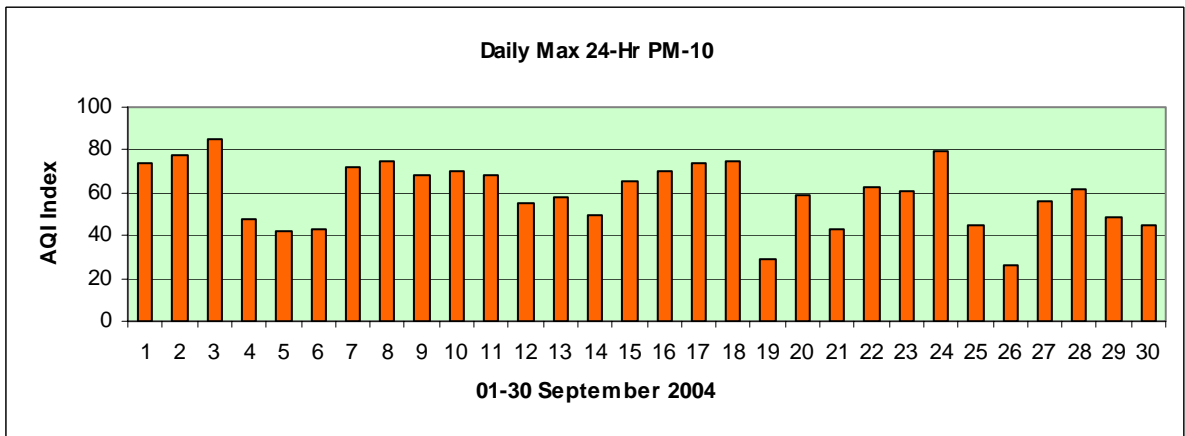
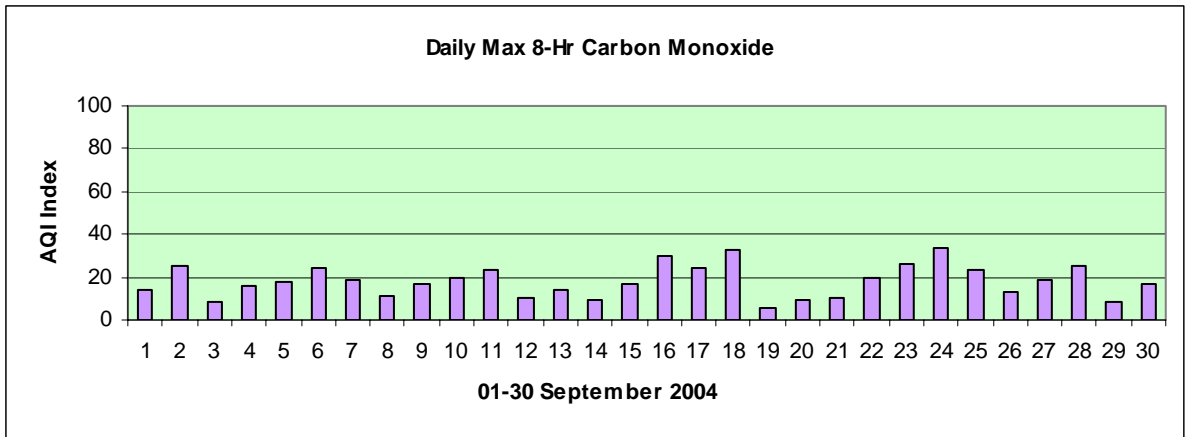
Narrative:

During September maximum Carbon Monoxide concentrations, although all within the good range, rose noticeably from those during August. In large measure this can be attributed to the change of season that occurs during September. Shorter day-length, weaker insolation, and drier air that radiates heat more rapidly, often result in cooler morning temperatures. Later sunrise times allow the cool air to remain trapped near the surface well into the rush hour interval. The subsequent reduction in mixing causes an

increase in contaminant concentrations. In August only four days had AQI values for CO that reached 20 or higher while September had 12 such days.

PM-10 concentrations were in the moderate range on twenty days during September, no doubt contributed to by frequent gusty winds and blowing dust from thunderstorms as well as the approach and passage of mid-latitude storm systems. The lowest reading of the month occurred on the 19th, a day characterized by occasional rain showers due to the remnants of Hurricane "Javier".

PM-2.5 levels were in the good range except on the 3rd when the 24-hr average concentration reached the moderate range at the Dysart site. The proximity of a hay fire in Goodyear to the site evidently caused smoke to impact the monitor much of the day.



## DETAILED OZONE SECTION

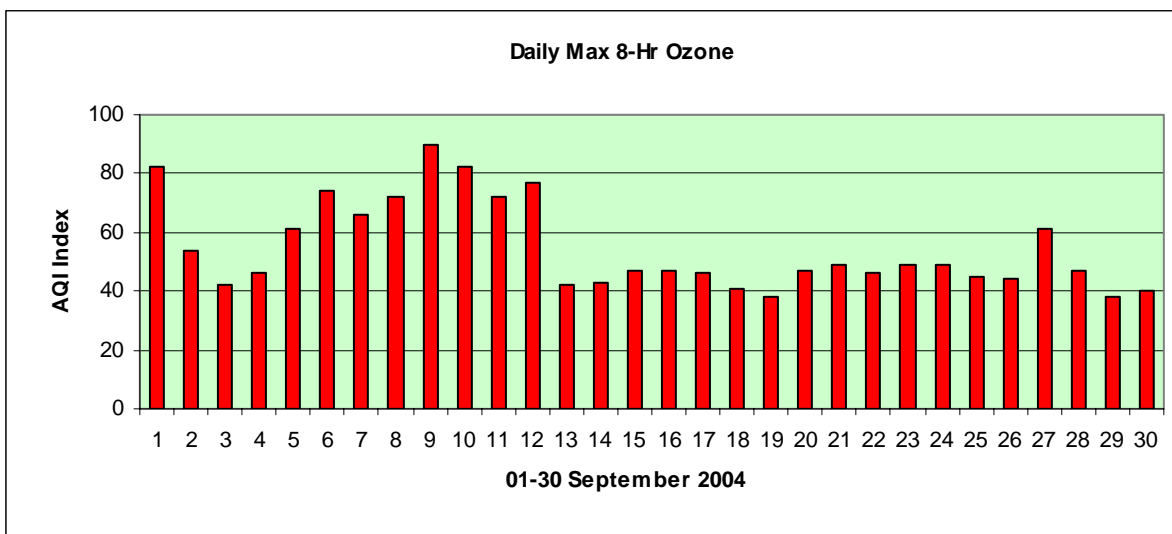
<b>GOOD</b>	<b>MODERATE</b>	<b>UNHEALTHY FOR SENSITIVE GROUPS</b>	<b>UNHEALTHY</b>
<b>0-50</b>	<b>51-100</b>	<b>101-150</b>	<b>151-200</b>

### SUMMARY OF MAXIMUM 8-HR OZONE AQI VALUES FOR SEP 2004\*

\*Preliminary data

SUN		MON		TUES		WED		THU		FRI		SAT	
						1	<b>82</b>	2	<b>54</b>	3	<b>42</b>	4	<b>46</b>
5	<b>61</b>	6	<b>74</b>	7	<b>66</b>	8	<b>72</b>	9	<b>90*</b>	10	<b>82</b>	11	<b>72</b>
12	<b>77</b>	13	<b>42</b>	14	<b>43</b>	15	<b>47</b>	16	<b>47</b>	17	<b>46</b>	18	<b>41</b>
19	<b>38</b>	20	<b>47</b>	21	<b>49</b>	22	<b>46</b>	23	<b>49</b>	24	<b>49</b>	25	<b>45</b>
26	<b>44</b>	27	<b>61</b>	28	<b>47</b>	29	<b>38</b>	30	<b>40</b>				

\*HIGHEST AQI OF MONTH



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**Exceedance days in SEP:** Total= 0      Date    Max ppb/AQI    Site/s

**Total number of exceedance days since APR 01:** 1

**Total number of exceedance sites since APR 01:** 1

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**Ozone Health Watches in SEP:** Total= 1      Date    Max ppb/AQI    Site/s  
 (Forecast max value 80-84 ppb)                      9/08                73/72                Humboldt Mtn

**Ozone Health Watches since APR 01:** Total= 16

**High Pollution Advisories in SEP:** Total= 0  
 (Forecast max value 85+ppb)

**High Pollution Advisories since APR 01:** Total= 1

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**Concentration Recap:** Sep days in the Good category: 19  
 Sep days in the Moderate category: 11  
 Sep days in the Unhealthy for Sensitive Groups category: 0  
 Sep days in the Unhealthy category: 0  
 Total Forecast Days: 30

**Sep max 8-Hr value:**      Date    Hour    Site                ppb/AQI DOW  
    9/09    1800    Humboldt Mtn    80/90    Thu

**Sep max 1-Hr value:**      Date    Hour    Site                ppb/AQI DOW  
    9/12    1300    North Phoenix    110/92    Sun

Sep average daily max 8-Hr concentration (ppb): 62.9  
 Sep deviation from 1996-2003 average (ppb): -0.6

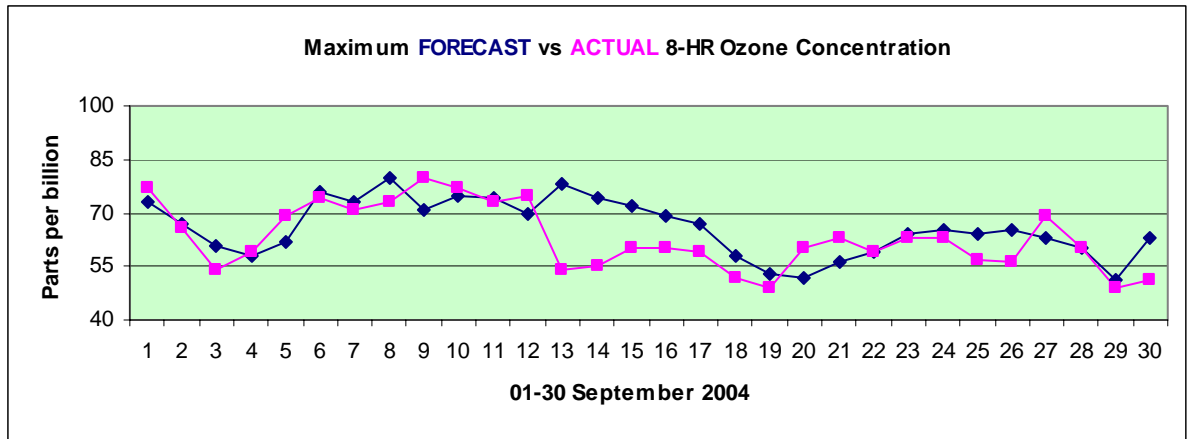
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**SEP Climatology:**                      Average number of 8-Hr exceedances: 0.5  
 (1996-2003)                      Maximum number of 8-Hr exceedances: 2 in 1997, 1999  
    Minimum number of 8-Hr exceedances: 0 in all other years  
    Average daily max 8-Hr concentration (ppb): 63.5  
    Record high max 8-Hr concentration (ppb): 91 on the 4th, 1997  
    Record low max 8-Hr concentration (ppb): 41 on the 24th, 2003

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**Forecast Verification:**

Sep days that maximum concentration was over-forecast:	19
Sep days that maximum concentration was under-forecast:	9
Sep days that maximum concentration was correctly forecast:	2
Sep average forecast accuracy (ppb):	+/- 6.1
Sep average forecast bias (ppb):	+2.9



**Narrative:** The 2004 ozone season ended with only one site exceedance of the 8-hour standard – and records indicate this to be by far the fewest for the metro Phoenix area since 1996. There were several rather high maximum concentrations during the first half of the month, prompting the issuance of an Ozone Health Watch for the 8th. The elevated readings were certainly weather-related as a late monsoon-like circulation developed, i.e., a deep easterly wind regime that imported high relative humidity. Ozone levels then fell into the good range from the 13th onward except for a brief increase into the moderate range on the 27th. This was mainly due to cooler daytime highs as the sub-tropical high retreated southward and the mid-latitude storm track brought occasional mostly weak disturbances over the forecast area. All in all, it was a fairly typical September as far as ozone values are concerned.

Some ozone summaries of interest are included on the following page. -Reith

OZONE WATCHES AND HIGH POLLUTION ADVISORIES ISSUED AND 8-HR EXCEEDANCES OCCURRING DURING THE 2004 OZONE FORECAST SEASON\*

	<u>WATCHES FOR</u>	<u>HPAS FOR</u>	<u>EXCEEDANCES ON</u>
	APR 26	JUN 02	JUL 27 (North Phoenix)
	APR 27		
	MAY 03		
	MAY 04		
	MAY 13		
	MAY 14		
	MAY 15		
	MAY 16		
	MAY 17		
	JUN 01		
	JUL 13		
	JUL 27		
	JUL 28		
	AUG 10		
	AUG 12		
	SEP 08		
<b>TOTALS:</b>	16	01	01

\*preliminary data

HIGH 8-HR OZONE CLIMATOLOGY (1996-2004)

<u>YEAR</u>	<u>#DAYS*</u> <u>80-84 PPB</u>	<u>#DAYS*</u> <u>85+ PPB</u> (exceedances)	<u>#DAYS*</u> <u>TOTAL</u>	<u>MAX LEVEL*</u> <u>PPB</u>	<u>AQI</u>
1996	17	31	48	105	151
1997	11	05	16	91	116
1998	29	29	58	98	135
1999	28	16	44	96	129
2000	26	20	46	95	127
2001	18	12	30	100	140
2002	12	17	29	107	156
2003	10	14	24	103	147
2004	<u>12</u>	<u>01</u>	<u>13</u>	87	106
<b>TOTAL</b>	163	145	308	-----	-----
<b>9-YR AVG</b>	18.1	16.1	34.2	-----	-----

\*preliminary data

\*at least one site exceeded the 8-hour standard