



Arizona Department of Environmental Quality

Janet Napolitano, Governor  
Stephen A. Owens, ADEQ Director

**MONTHLY AIR QUALITY REPORT FOR**  
**SEPTEMBER 2006**

AQI COLOR SCALE

<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>

Calendar of maximum AQI values & their corresponding color for September 2006\*

\*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

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

SUN			MON			TUE			WED			THU			FRI			SAT		
															1	74	13	2	54	08
																56	34		59	23
3	38	03	4	37	03	5	38	05	6	72	06	7	41	05	8	59	06	9	41	10
	20	16		13	24		26	27		31	22		35	26		25	29		31	26
10	48	15	11	59	10	12	40	10	13	41	13	14	41	11	15	36	06	16	46	08
	31	40		51	41		76	37		44	28		63	34		38	30		40	34
17	51	10	18	51	18	19	56	23	20	41	11	21	42	11	22	44	15	23	49	17
	45	42		62	44		77	47		75	38		60	31		76	49		49	51
24	47	17	25	45	23	26	48	24	27	44	22	28	44	26	29	49	33	30	50	42
	45	38		67	46		71	54		78	46		78	52		92	55		73	56

**Calendar of High Pollution Advisories and Health Watches issued during September 2006**

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			19			20			21			22						23		
24			25			26			27			28			29						30		
									NONE ISSUED														

**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

**Exceedance days during SEP 2006-**

Total= 0      Date      Max AQI      Pollutant      Site/s

**High Pollution Advisories issued during SEP 2006-**

Total= 0      Date      Max AQI      Pollutant      Site/s

**Health Watches issued during SEP 2006-**

Total= 0      Date      Max AQI      Pollutant      Site/s

**Concentration Recap:**

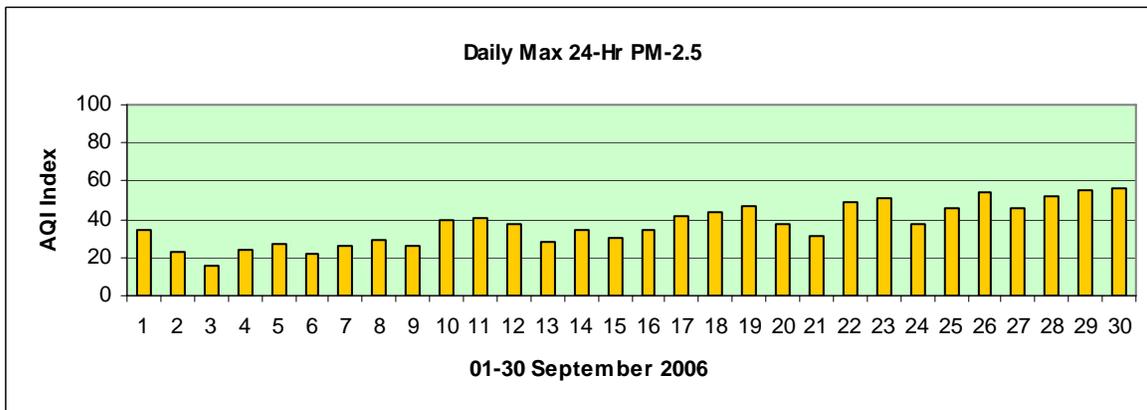
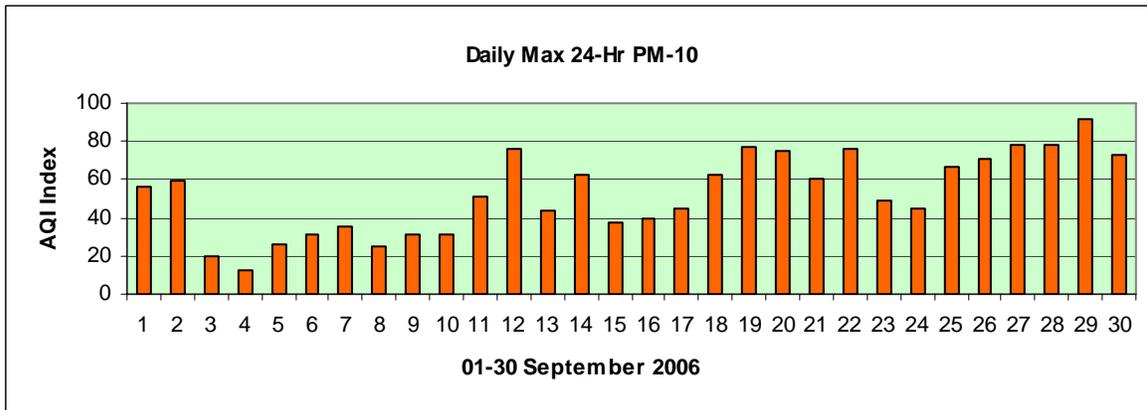
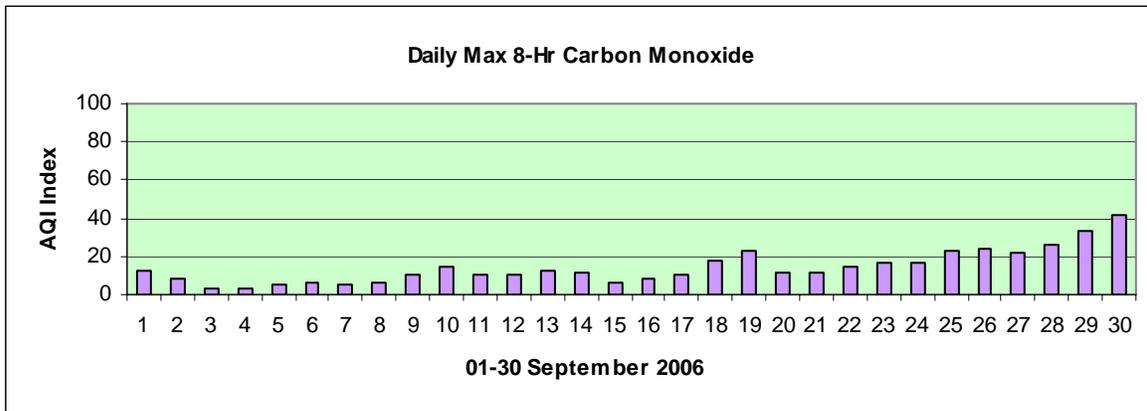
Days in the <b>Good</b> category:	10
Days in the <b>Moderate</b> category:	20
Days in the <b>Unhealthy for Sensitive Groups</b> category:	0
Days in the <b>Unhealthy</b> category:	<u>0</u>
Total Forecast Days:	30

**Narrative:**

The 2006 summer monsoon ended in Phoenix on September 15; this event also marked the transition from ozone pollution to carbon monoxide and particle pollutant “season”. Although maximum daytime temperatures were in the 90’s and 100’s all month, dew points lowered from the 50’s and 60’s before the 15th to the 30’s and 40’s thereafter. Also, overnight minimum temperatures (at Sky Harbor Airport) dropped from the 70’s and 80’s during the monsoon to the 60’s and 70’s after it ended. The drier air mass led to cooler morning temperatures and eventually resulted in steeper overnight radiation inversion formation...a key element in rising PM levels over the Phoenix metro area. There was a strong relationship between the magnitude and height of the radiation inversion to especially PM-10 concentrations as can be seen in the following chart:

Date	Inv (deg C)	Inv Ht (feet)	Max pm-10 AQI	Date	Inv (deg C)	Inv Ht (feet)	Max pm-10 AQI
Sep 25	<1	-----	67	Sep 28	5.7	1601	78
Sep 26	3.5	1542	71	Sep 29	5.5	2700	92
Sep 27	3.2	1440	78	Sep 30	5.0	2267	73

PM-2.5 levels also rose, but were likely also influenced by periodic smoke intrusions from the Southern California “DAY” Fire from the 23rd thru the 28th. -Reith



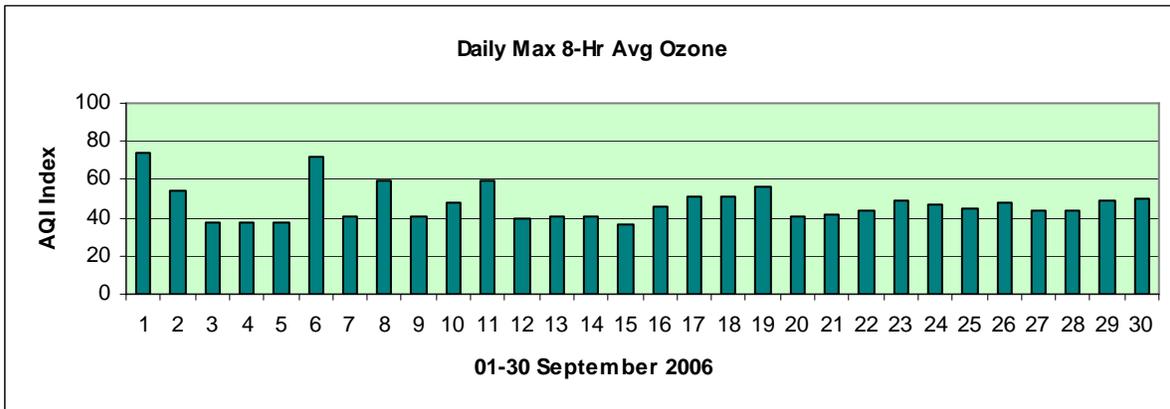
## DETAILED OZONE SECTION

<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 SEPTEMBER 2006\*

\*Preliminary data

SUN		MON		TUES		WED		THU		FRI		SAT	
										1	<b>74</b>	2	<b>54</b>
3	<b>38</b>	4	<b>37</b>	5	<b>38</b>	6	<b>72</b>	7	<b>41</b>	8	<b>59</b>	9	<b>41</b>
10	<b>48</b>	11	<b>59</b>	12	<b>40</b>	13	<b>41</b>	14	<b>41</b>	15	<b>36</b>	16	<b>46</b>
17	<b>51</b>	18	<b>51</b>	19	<b>56</b>	20	<b>41</b>	21	<b>42</b>	22	<b>44</b>	23	<b>49</b>
24	<b>47</b>	25	<b>45</b>	26	<b>48</b>	27	<b>44</b>	28	<b>44</b>	29	<b>49</b>	30	<b>50</b>



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

**Total number of exceedance days since APR 01:** 11  
**Total number of exceedance sites since APR 01:** 26

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**Ozone Health Watches in SEP:** Total= 0      Date    Max ppb/AQI    Site/s  
(Forecast max value 80-84 ppb)

**Ozone Health Watches since APR 01:** Total= 37

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

**High Pollution Advisories since APR 01:** Total= 7

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**Concentration Recap:** Days in the **Good** category: 22  
Days in the **Moderate** category: 8  
Days in the **Unhealthy for Sensitive Groups** category: 0  
Days in the **Unhealthy** category: 0  
Total Forecast Days: 30

<b>Maximum 8-Hr value:</b>	<u>Date</u>	<u>Hour</u>	<u>Site</u>	<u>ppb/AQI DOW</u>
	9/01	1200	Pinnacle Peak	74/74 Fri
			Rio Verde	74/74 Fri
<b>Maximum 1-Hr value:</b>	<u>Date</u>	<u>Hour</u>	<u>Site</u>	<u>ppb/AQI DOW</u>
	9/01	1700	Rio Verde	98/82 Fri

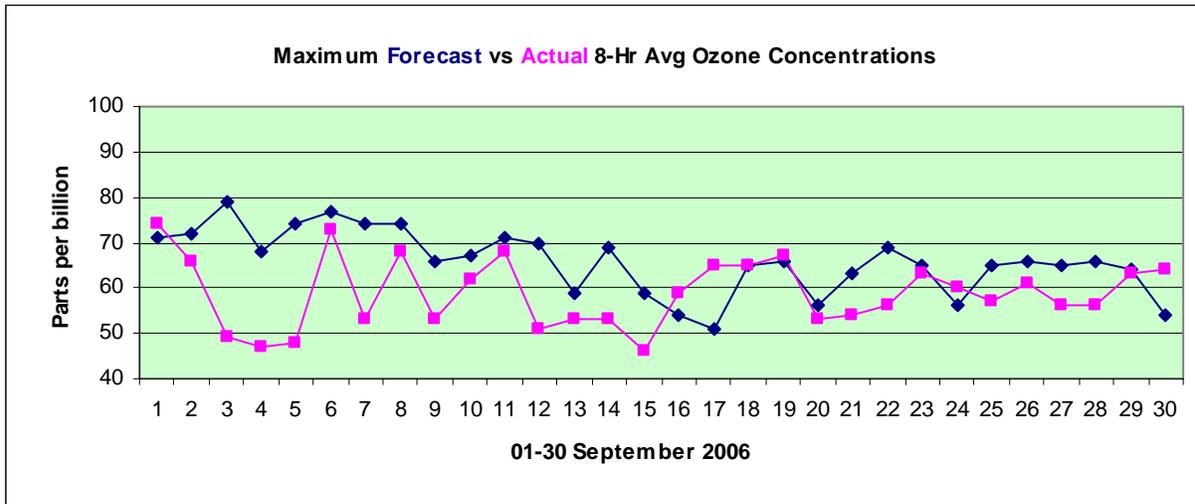
Average daily max 8-Hr concentration (ppb): 58.8  
Deviation from the 1996-2005 average (ppb): -4.5

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**SEP Climatology:** (1996-2005) Average number of 8-Hr exceedance days: 0.4  
Maximum number of 8-Hr exceedance days: 2 in 1997, 1999  
Minimum number of 8-Hr exceedance days: 0 in 1996, 1998, 2000-05  
Average daily max 8-Hr concentration (ppb): 63.3  
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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<b>Forecast Verification:</b>	# of days maximum concentrations were over-forecast:	23
	# of days maximum concentrations were under-forecast:	6
	# of days maximum concentrations were correctly forecast:	1
	Sep average forecast accuracy (ppb):	+/-9.4
	Sep average forecast bias (ppb):	+8.2



**Narrative:** The 2006 Maricopa County ozone season came to close with a whimper during September. Highest concentrations were in the good range of the Air Quality Index on all but six days of the month, despite plentiful sunshine and seven days with easterly wind regimes. On the other hand, daytime high temperatures reached the 100-degree mark on only eight days. As the above chart shows, September's rapid decline in ozone production contributed to an unusually high positive forecast bias and a rather poor accuracy index. -Reith