

# OKLAHOMA MONTHLY SUMMARY APRIL 1993

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## MONTHLY SUMMARY FOR APRIL 1993

Spring weather struck Oklahoma with a vengeance during April. A tornado struck Tulsa and Catoosa, killing seven people, injuring over 90 others and causing extensive damage, especially in Catoosa. Flooding forced the evacuations in Stillwater and winter weather made an encore appearance as snow and sleet were reported at several locations during the month. Temperatures averaged nearly four degrees below normal. Precipitation across the state averaged almost an inch above normal, although precipitation in many areas in northwestern Oklahoma was below normal for the month.

The statewide average temperature was 56.9 degrees, the ninth lowest April average temperature since 1892. Precipitation for the month averaged 4.04 inches. For the year-to-date, temperatures have averaged 45.2 degrees which is 2.1 degrees below normal and the 13th lowest temperature for the first third of the year. Precipitation, thus far, has averaged 11.82 inches or 2.92 inches above normal, a total that ranks as the 14th greatest January through April total for the state.

Two upper level disturbances crossed the state during the first week of the month, keeping skies mostly cloudy and the weather cool. Reports of precipitation in excess of an inch were commonplace in eastern Oklahoma on the 4th and 5th. Fair weather dominated the state from the 9th through the 11th as temperatures in many areas soared into the mid 80s.

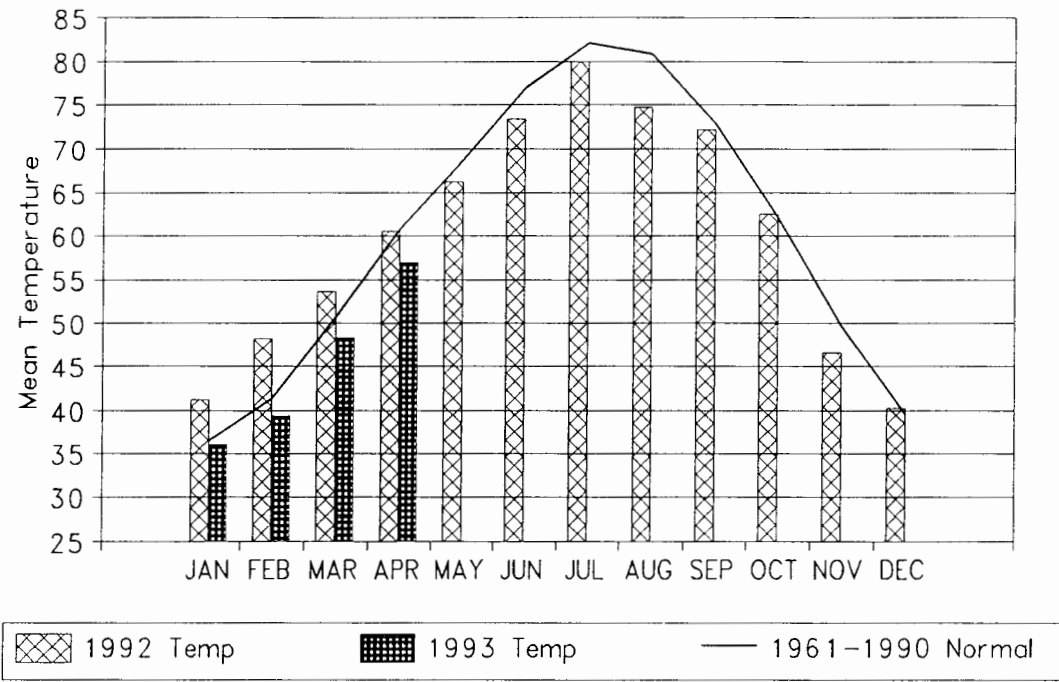
Rain and cooler air returned to the state by the middle of the month. Thunderstorms on the 13th produced street flooding in a number of areas in central and southeastern Oklahoma. Chandler reported over 6 inches of rain and Ada reported over 4 inches. Cooler air arrived on the 14th as snow reportedly fell, but did not accumulate, at several locations including Cement and the Wichita Mountains Wildlife Refuge. Sleet and a mixture of rain, sleet and snow were widely reported across northern portions of the state. Overnight low temperatures in the upper 20s were reported in the northwest on the 15th, 16th and 17th.

A cold front that moved through the state on the 23rd and 24th was the catalyst for the most significant weather event of the spring season, thus far, the Tulsa-Catoosa tornadoes of April 24. According to reports from the National Weather Service, two tornadoes killed seven people, injured at least 90 others, destroyed over 100 residences in Catoosa, destroyed at least 70 percent of the businesses in Catoosa, damaged about 1500 homes and inflicted major damage to Catoosa High School. Total damage has been estimated at \$100 million. Another tornado the same evening destroyed seven mobile homes and two houses near Locust Grove in Mayes County. Large hail and damaging thunderstorm winds were reported at many locations across northeastern Oklahoma and, from a separate thunderstorm system, in southern Oklahoma.

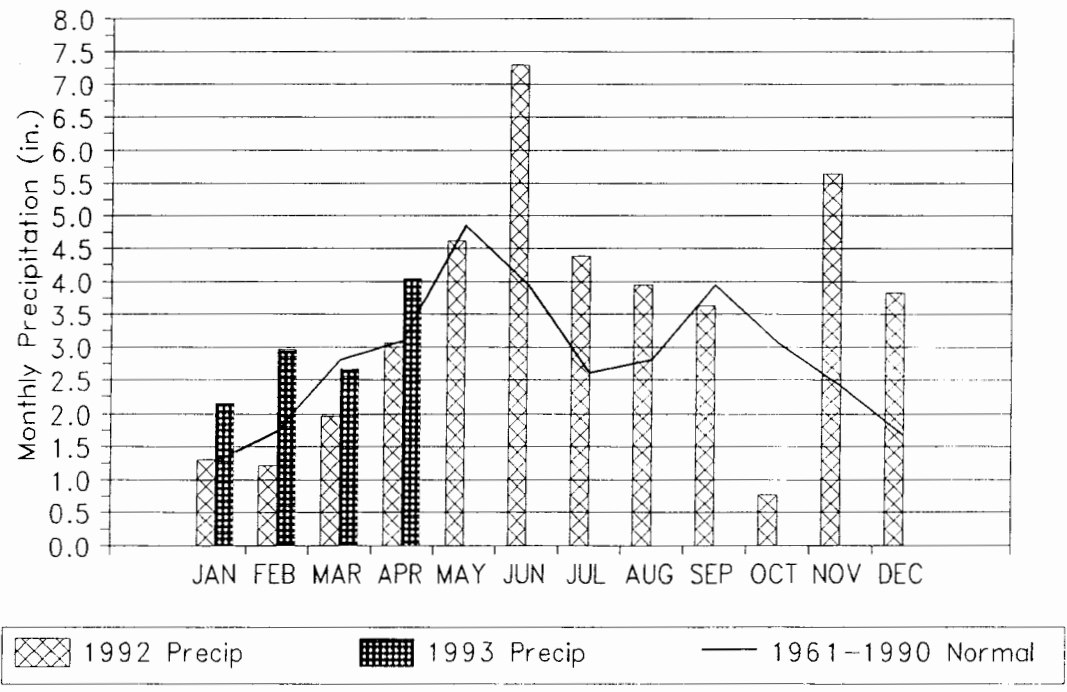
Another round of strong thunderstorms developed during late afternoon on the 28th. A tornado was reported by the public west of Retrop in Beckham County and reports of large hail and damaging winds were common in southwestern Oklahoma. Extremely heavy rain in Payne County prompted the evacuation of two apartment complexes in southwest Stillwater, and flooding caused the closure of numerous roads in the city. Water had receded by 9 AM on the 29th. City officials in Stillwater reported that approximately seven inches of rain fell in Stillwater overnight. The official observer a mile west of Stillwater reported 5.5 inches of precipitation. The nearby communities of Perkins and Ingalls each reported more than 4.5 inches of precipitation. The heavy rain moved eastward through the night into Creek and Okmulgee Counties, causing flooding south of Bristow and street flooding in Dewey and Dewar.

Another round of thunderstorms developed in northwestern Oklahoma on the afternoon of the 30th, producing large hail in Harper, Woods, Woodward and Major Counties. A tornado was reported north of Mooreland and several funnel clouds were observed near Woodward.

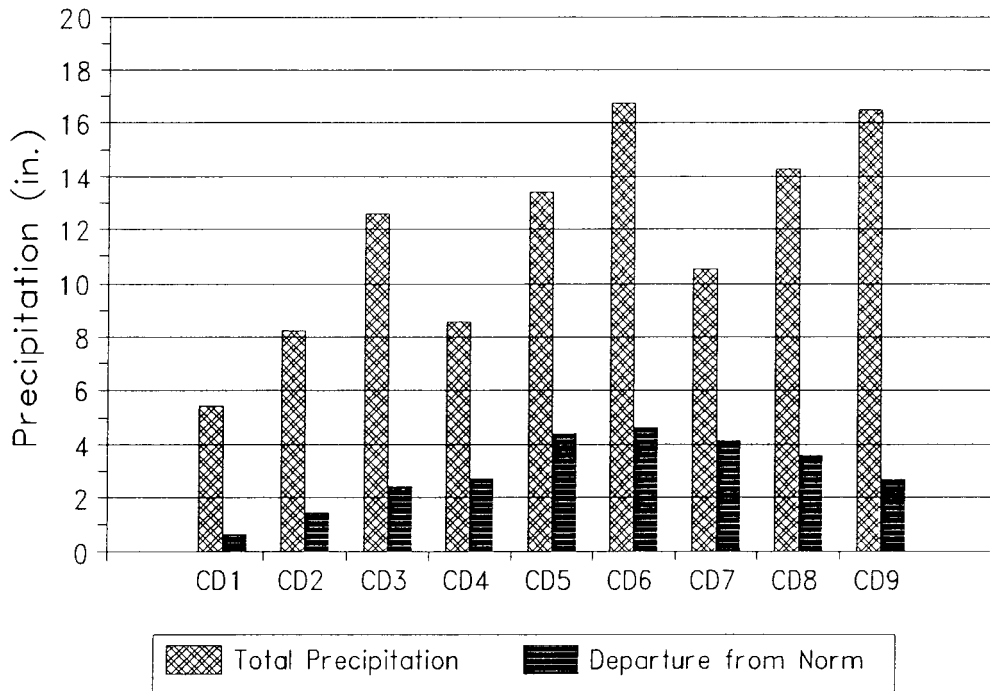
### 1992 and 1993 STATEWIDE TEMPERATURES Monthly Averages



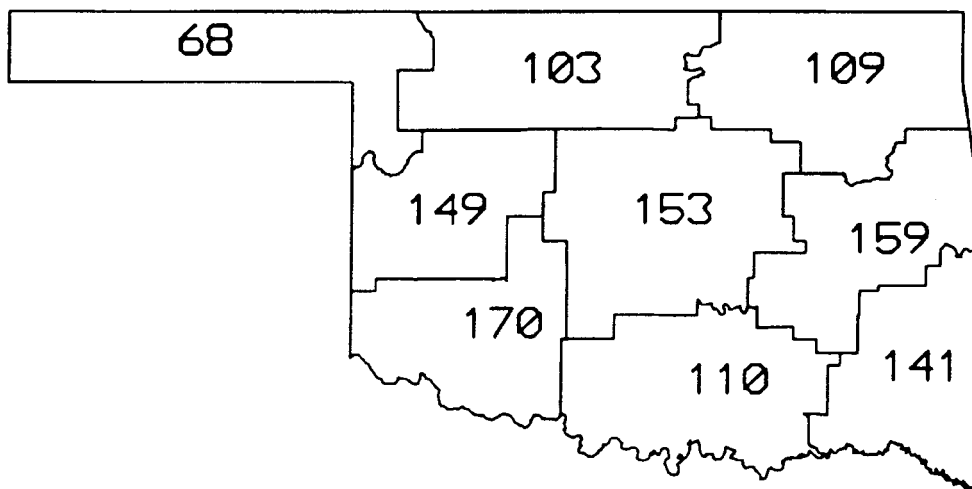
### 1992 and 1993 STATEWIDE PRECIPITATION Monthly Totals



### CD Averaged Precipitation 1993 January through April Totals



### CD PERCENT OF NORMAL PRECIPITATION



APRIL 1993

EXTREME VALUES OF TEMPERATURE AND PRECIPITATION IN EACH CLIMATE DIVISION  
APRIL, 1993

CD	MAX			MIN			24-HOUR			MONTHLY	
	TEMP	DATE	LOCATION	TEMP	DATE	LOCATION	PRECIP	DATE	LOCATION	PRECIP	LOCATION
1	91	19	BUFFALO	25	2	BUFFALO	1.10	29	GAGE FAA APT	1.91	GAGE FAA APT
2	90	23	ALVA	23	2	FREEDOM	3.19	30	MEDFORD	6.05	PERRY
	90	24	FREEDOM								
3	85	10	MANNFORD	24	2	PRYOR	1.97	29	PAWNEE	5.83	KANSAS
4	90	18	ERICK	28	2	HAMMON	3.83	29	CORDELL	5.67	CORDELL
	90	23	REYDON								
5	89	12	BLANCHARD	27	2	STILLWATER	6.70	14	CHANDLER	10.97	CHANDLER
	89	12	CHICKASHA								
	89	12	GUTHRIE								
6	87	19	MCALESTER	23	2	TAHLEQUAH	2.90	14	WETUMKA	8.65	CLAYTON
7	91	18	HOLLIS	22	2	WALTERS	4.08	29	SEDAN	6.03	SEDAN
8	90	24	HEALDTON	27	2	MARLOW	4.08	14	ADA	8.08	DAISY
	90	13	WAURIKA DAM								
9	84	10	ANTLERS	27	1	POTEAU	2.37	15	BENGAL	8.76	SPIRO
	84	10	POTEAU								
	84	10	WILBURTON								

TABLE OF 1992/1993 COMPARISONS

Station	April Temperature (F)		April Precipitation (in.)	
	1992	1993	1992	1993
Arnett	56.3	51.2	1.59	0.80
Enid	58.7	55.7	2.63	3.52
Mutual	56.8	52.5	1.88	1.92
Tulsa	62.2	56.7	5.03	4.60
Elk City	60.7	57.0	1.49	1.86
Oklahoma City	61.3	56.2	3.64	2.51
McAlester	62.7	60.3	4.83	5.10
Altus Irr Sta	62.8	59.5	2.36	3.39
Durant	62.0	58.0	2.43	4.21
Ada	61.6	57.5	5.15	7.13
Antlers	62.4	59.3	2.66	5.36

EXTREMES

Variable	Station	Division	Observation	Date
Minimum temperature (F)	Freedom	2	23	2
	Tahlequah	6	23	2
Maximum temperature (F)	Buffalo	1	91	19
	Hollis	7	91	18
Maximum 24-hour precipitation	Stillwater	5	5.50"	29

APRIL 1993 SUMMARY FOR NORTHWEST DIVISION (CD1)

NAME	ID	CD	DEV					HEAT		DEV		COOL		DEV		TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN DAY	DEG DAY	FROM NORM	DEG DAY	DEG DAY	FROM NORM	DEG DAY	FROM NORM						
ARNETT	332	1	51.2	28	*****	87.	24	30.	2	388.5	*****	3.0	*****	.804	28	*****	.65	4		
BEAVER	593	1	52.3	30	-3.5	88.	24	26.	17	389.5	95.5	9.0	-9.0	2.092	30	.54	1.04	29		
BOISE CITY 2 E	908	1	53.9	30	-1.3	83.	23	27.	15	337.5	31.5	3.5	-8.5	1.021	30	-.16	.90	3		
BUFFALO	1243	1	56.2	30	-3.5	91.	19	25.	2	285.0	77.0	19.5	-29.5	1.450	30	-.90	.45	28		
FARGO	3070	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.460	30	-.55	.54	29		
GAGE FAA APT	3407	1	55.5	30	-3.2	89.	23	27.	2	294.5	73.5	11.0	-21.0	1.915	30	.04	1.10	29		
GATE	3489	1	53.4	30	-3.8	87.	24	28.	2	359.5	95.5	11.5	-18.5	.843	30	-.99	.25	4		
GOODWELL RES ST	3628	1	52.2	30	-2.3	86.	24	28.	3	386.0	59.0	.5	-11.5	.642	30	-.59	.62	4		
GUYMON	3835	1	53.2	26	*****	88.	23	27.	22	318.0	*****	10.5	*****	.311	28	*****	.30	4		
HOOKER	4298	1	52.6	30	-3.8	87.	24	29.	17	374.0	97.0	2.5	-16.5	.192	30	-1.19	.17	4		
KENTON	4766	1	52.2	27	*****	82.	23	27.	15	347.0	*****	2.5	*****	.002	30	-1.21	.00	27		
LAVERNE	5045	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.154	29	*****	.51	29		
OPTIMA LAKE	6740	1	53.2	30	*****	88.	24	27.	16	367.0	*****	12.0	*****	.364	30	*****	.19	3		
REGNIER	7534	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.910	30	-.18	.48	3		
TURPIN 4 SSE	9017	1	52.7	29	*****	86.	24	28.	16	363.0	*****	5.0	*****	.070	30	*****	.04	28		

APRIL 1993 SUMMARY FOR NORTH CENTRAL DIVISION (CD2)

NAME	ID	CD	DEV					HEAT		DEV		COOL		DEV		TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN DAY	DEG DAY	FROM NORM	DEG DAY	DEG DAY	FROM NORM	DEG DAY	FROM NORM						
ALVA	193	2	55.4	30	*****	82.	26	29.	2	290.0	*****	1.5	*****	1.910	30	*****	.65	4		
VANCE AFB	302	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.233	30	*****	1.05	15		
BILLINGS	755	2	52.3	30	-5.8	82.	13	25.	2	380.5	144.5	.0	-29.0	3.040	30	-.05	1.05	15		
BLACKWELL 2E	818	2	54.7	29	-4.0	77.	27	26.	2	297.5	79.5	.0	-29.0	3.080	30	.11	1.36	29		
BRAMAN	1075	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.780	29	*****	1.25	29		
CEDARDALE	1620	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.211	31	*****	.51	29		
CHEROKEE	1724	2	55.9	30	-4.2	79.	26	29.	2	277.5	89.5	4.0	-37.0	1.230	30	-1.15	.80	29		
ENID	2912	2	55.7	30	-4.8	80.	12	28.	2	285.5	108.5	7.0	-35.0	3.520	30	.65	1.22	15		
FT SUPPLY DAM	3304	2	52.8	30	-4.4	88.	24	29.	16	371.0	109.0	5.5	-22.5	1.042	30	-.70	.27	17		
FREEDOM	3358	2	52.6	30	-7.2	90.	24	23.	2	381.0	183.0	8.5	-33.5	1.750	30	-.42	.52	4		
GREAT SALT PLNS	3740	2	53.8	30	-4.6	79.	27	28.	2	335.5	105.5	.5	-31.5	1.540	30	-1.12	.49	28		
HARDY	3909	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.344	30	*****	1.05	28		
HELENA 1 SSE	4019	2	52.5	30	-4.6	78.	27	26.	2	374.5	116.5	.0	-21.0	2.221	30	-.26	1.32	28		
JEFFERSON	4573	2	56.2	30	-3.5	80.	26	26.	2	266.5	66.5	3.5	-37.5	3.680	30	.92	1.91	30		
LAMONT	5013	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.000	30	*****	1.43	29		
MEDFORD	5768	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.360	29	*****	3.19	30		
MORRISON	6065	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.080	30	*****	2.90	29		
MUTUAL	6139	2	52.5	30	-4.6	81.	24	29.	16	374.5	111.5	.0	-26.0	1.920	30	-.51	.90	29		
NEWKIRK	6278	2	54.5	30	-5.1	78.	27	24.	2	317.0	116.0	2.5	-36.5	3.380	30	.29	1.38	29		
ORIENTA	6751	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.290	30	-1.32	.68	29		
PERRY	7012	2	57.0	30	-4.4	80.	26	28.	2	253.5	92.5	13.5	-39.5	6.051	30	3.35	3.00	29		
PONCA CITY FAA	7201	2	56.7	30	-2.4	80.	27	28.	2	264.0	52.0	14.0	-21.0	3.663	30	.84	1.37	29		
RED ROCK 1 NNE	7505	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.290	30	2.53	2.58	29		
WAYNOKA	9404	2	54.5	30	-5.5	85.	23	26.	2	323.5	127.5	8.5	-37.5	1.020	30	-1.07	.39	29		
WOODWARD	9760	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.982	31	-1.07	.45	29		

**APRIL 1993 SUMMARY FOR NORTHEAST DIVISION (CD3)**

NAME	ID	CD	DEV						HEAT		DEV		COOL		DEV		TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN DAY	TEMP DAY	DEG DAY	FROM NORM	DEG DAY	FROM NORM	DEG DAY	FROM NORM	MAX 24-HR						
BARNSDALL	535	3	55.8	30	-5.3	82.	10	25.	2	286.0	123.0	10.5	-35.5	3.623	30	.28	.98	18			
BARTLESVILLE 2W	548	3	56.5	30	-4.8	83.	10	25.	2	263.5	102.5	10.0	-40.0	3.262	30	-.13	.84	29			
BIXBY	782	3	54.7	29	-4.7	82.	13	29.	2	307.5	117.5	7.5	-14.5	5.240	29	*****	1.40	29			
BURBANK	1256	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.523	30	.76	1.28	28			
CHELSEA 4 S	1717	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.350	30	*****	1.02	18			
CLAREMORE	1828	3	53.3	30	-5.7	80.	13	28.	2	357.0	155.0	5.0	-17.0	4.440	30	.89	.93	15			
CLEVELAND 5 WSW	1902	3	57.7	28	*****	82.	13	32.	2	220.0	*****	15.0	*****	4.870	30	*****	1.40	4			
FORAKER	3250	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.090	30	-1.03	.62	18			
HOLLOW	4258	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.482	30	.86	1.29	15			
HOMINY	4289	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.762	30	.69	.82	5			
HULAH DAM	4393	3	53.4	29	-5.3	82.	11	25.	2	341.5	127.5	4.5	-20.5	2.011	29	*****	.70	18			
JAY TOWER	4567	3	52.8	30	*****	80.	11	28.	2	367.0	*****	2.0	*****	3.770	30	*****	1.10	15			
KANSAS 1 ESE	4672	3	55.1	30	-5.4	79.	10	26.	2	305.0	134.0	7.0	-29.0	5.828	30	1.55	1.77	25			
KEYSTONE DAM	4812	3	54.6	28	*****	81.	13	27.	2	295.5	*****	4.0	*****	4.173	29	*****	1.02	15			
LENAPAH	5118	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.610	29	*****	.90	15			
MANNFORD 6 NW	5522	3	58.1	30	-3.9	85.	10	26.	2	235.0	87.0	28.5	-29.5	4.420	30	1.13	1.06	5			
MARAMEC	5540	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	5.210	30	2.16	1.56	29			
MIAMI	5855	3	54.2	29	-4.5	82.	23	28.	2	314.0	106.0	.0	-19.0	1.180	24	*****	.70	18			
NOWATA	6485	3	55.5	30	-4.8	80.	12	28.	2	293.0	108.0	6.5	-37.5	3.330	30	-.31	.76	14			
ONETA 1 WNW	6713	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.560	30	*****	.80	15			
PAWHUSKA	6935	3	56.1	30	-4.5	80.	10	26.	2	276.5	100.5	10.0	-34.0	3.760	30	.42	1.02	29			
PAWNEE	6940	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.850	30	1.74	1.97	29			
PRYOR 6 N	7309	3	52.7	30	-6.1	79.	11	24.	2	369.0	156.0	.5	-26.5	3.992	30	.08	1.18	15			
RALSTON	7390	3	56.7	30	-4.3	80.	12	26.	2	260.5	90.5	10.0	-37.0	2.883	30	-.28	1.20	29			
RAMONA 4 N	7394	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.131	30	*****	1.64	25			
SKIATOOK	8258	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.700	30	-.75	.64	18			
SPAVINAW	8380	3	57.2	30	-4.4	78.	27	28.	2	257.5	107.5	23.5	-24.5	3.244	30	-.75	1.07	15			
TULSA WSO APT	8992	3	56.7	30	-4.8	83.	10	28.	2	269.0	118.0	21.0	-25.0	4.602	30	.88	.95	15			
UPPER SPAVINAW	9101	3	57.9	27	*****	84.	10	36.	6	222.0	*****	31.5	*****	4.964	28	*****	1.28	5			
VINITA 2 N	9203	3	56.1	30	-3.4	78.	10	25.	2	279.0	85.0	11.5	-17.5	2.801	30	-1.03	.91	15			
WAGONER	9247	3	57.8	30	-4.0	81.	12	29.	2	241.0	103.0	24.0	-18.0	4.411	29	*****	1.04	15			
WANN	9298	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.430	30	*****	1.00	4			
WYONONA	9792	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.304	30	*****	.99	5			

**APRIL 1993 SUMMARY FOR WEST CENTRAL DIVISION (CD4)**

NAME	ID	CD	DEV						HEAT		DEV		COOL		DEV		TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN DAY	TEMP DAY	DEG DAY	FROM NORM	DEG DAY	FROM NORM	DEG DAY	FROM NORM	MAX 24-HR						
CANTON DAM	1445	4	52.9	30	-5.3	79.	19	29.	2	365.0	128.0	1.5	-31.5	2.942	29	*****	.98	29			
CHEYENNE	1738	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	1.930	30	-.09	1.19	29			
CLINTON	1909	4	56.5	30	-4.5	83.	12	30.	2	260.0	89.0	5.0	-46.0	2.782	30	.47	1.33	29			
COLONY	2039	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.820	30	*****	.95	29			
CORDELL	2125	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	5.672	30	3.64	3.83	29			
ELK CITY 1 E	2849	4	57.0	29	-3.3	85.	12	32.	2	242.5	64.5	10.0	-27.0	1.861	29	*****	.76	29			
ERICK 4 E	2944	4	57.5	30	-2.7	90.	18	30.	2	239.0	58.0	13.5	-23.5	1.970	30	-.07	.81	29			
GEARY	3497	4	59.3	30	-.9	87.	12	35.	2	195.0	7.0	25.0	-19.0	3.940	30	1.53	1.93	29			
HAMMON 1 NNE	3871	4	52.8	30	-5.7	84.	19	28.	2	366.5	136.5	.0	-35.0	2.391	30	.43	.86	29			
LEEDEY	5090	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.320	31	1.08	2.48	28			
MACKIE 4 NNW	5463	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.730	30	*****	1.42	29			
MORAVIA 2 NNE	6035	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.810	30	1.80	2.08	29			
OKEENE	6629	4	55.8	30	-5.2	80.	18	29.	2	280.5	108.5	3.0	-46.0	2.830	30	.45	1.36	29			
RETROP	7565	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.630	30	*****	2.00	29			
REYDON	7579	4	59.2	30	.1	90.	23	34.	2	204.0	-15.0	30.5	-11.5	2.321	30	.30	.85	14			
SAYRE	7952	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	1.360	30	-.56	.55	29			
TALOGA	8708	4	54.7	30	-4.4	80.	18	28.	2	313.5	104.5	4.0	-28.0	3.583	30	1.22	2.15	29			
THOMAS	8815	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.930	30	*****	1.68	29			
VICI	9172	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.820	30	2.35	2.00	30			
WATONGA	9364	4	55.8	30	-4.2	82.	18	29.	2	281.0	92.0	6.0	-33.0	3.711	30	1.31	1.90	29			
WEATHERFORD	9422	4	55.0	30	-3.7	85.	13	29.	2	308.5	91.5	8.0	-20.0	3.011	30	.89	1.67	29			

APRIL 1993 SUMMARY FOR CENTRAL DIVISION (CD5)

NAME	ID	CD	DEV					HEAT		DEV		COOL		DEV		TOT	NUM	DEV	MAX	24-HR	DAY
			MEAN	NUM	FROM	MAX	MIN	DEG	FROM	DEG	FROM	DEG	FROM	DEG	FROM						
			TEMP	OBS	NORM	TEMP	DAY	TEMP	DAY	DAY	NORM	DAY	NORM	DAY	NORM	PPT	OBS	NORM			
AMBER	200	5	****	0	****	****	0	****	0	****	****	****	****	****	3.570	30	****	1.78	29		
ARCADIA	288	5	****	0	****	****	0	****	0	****	****	****	****	****	3.450	30	****	1.65	30		
TINKER AFB	325	5	****	0	****	****	0	****	0	****	****	****	****	****	2.293	30	****	.84	29		
BLANCHARD 2 SSW	830	5	58.8	30	-3.4	89.	12	30.	2	215.0	74.0	28.5	-28.5	2.891	30	-	.22	1.35	29		
BRISTOW	1144	5	58.1	30	-4.1	84.	10	28.	2	227.5	83.5	21.0	-39.0	7.780	30	4.45	4.17	29			
CHANDLER	1684	5	58.9	29	-3.2	86.	10	29.	2	203.0	62.0	26.0	-28.0	4.520	30	1.33	2.10	29			
CHICKASHA EX ST	1750	5	57.8	30	-4.7	89.	12	30.	2	239.0	104.0	24.5	-35.5	4.590	30	1.84	2.28	29			
COX CITY 1 E	2196	5	****	0	****	****	0	****	0	****	****	****	****	2.750	30	****	.88	14			
CRESCENT	2242	5	****	0	****	****	0	****	0	****	****	****	****	5.420	30	****	2.31	29			
CUSHING	2318	5	55.2	30	-4.9	83.	13	32.	2	303.5	123.5	9.0	-24.0	5.561	30	2.25	3.30	29			
EL RENO 1 N	2818	5	57.4	30	-3.2	87.	12	35.	16	246.5	69.5	18.0	-27.0	4.070	30	1.50	1.72	29			
GUTHRIE	3821	5	59.3	30	-2.5	89.	12	28.	2	208.0	56.0	37.5	-18.5	7.201	30	4.54	3.87	29			
HENNESSEY 4 ESE	4055	5	54.6	27	****	77.	22	28.	2	282.0	****	.0	****	4.831	27	****	2.00	29			
INGALLS	4489	5	****	0	****	****	0	****	0	****	****	****	****	7.242	30	****	4.57	29			
KINGFISHER 2 SE	4861	5	56.3	30	-4.8	86.	12	28.	2	273.0	99.0	11.0	-46.0	3.951	30	1.34	1.55	29			
KONAWA	4915	5	****	0	****	****	0	****	0	****	****	****	****	4.850	30	.77	1.12	29			
MARSHALL	5589	5	****	0	****	****	0	****	0	****	****	****	****	6.010	30	3.45	3.83	29			
MEEKER 4 W	5779	5	57.4	30	-4.2	83.	24	29.	2	247.5	89.5	19.5	-36.5	3.410	30	.15	1.47	28			
MULHALL	6110	5	****	0	****	****	0	****	0	****	****	****	****	6.940	30	****	3.50	29			
NORMAN 3 S	6386	5	57.2	30	-5.3	88.	12	30.	2	257.5	129.5	22.5	-30.5	2.891	30	-.34	1.46	29			
OILTON 2 SE	6616	5	****	0	****	****	0	****	0	****	****	****	****	6.530	30	****	3.57	28			
OKEMAH	6638	5	59.0	30	-2.9	85.	10	33.	2	205.5	68.5	26.0	-18.0	4.982	30	1.06	1.70	29			
OKLAHOMA CTY WS	6661	5	56.2	30	-4.3	86.	12	31.	2	274.5	98.5	9.0	-29.0	2.505	30	-.26	1.09	14			
PERKINS	7003	5	****	0	****	****	0	****	0	****	****	****	****	7.490	30	4.57	4.86	29			
PIEDMONT	7068	5	****	0	****	****	0	****	0	****	****	****	****	5.210	30	****	2.60	29			
PRAGUE	7264	5	****	0	****	****	0	****	0	****	****	****	****	4.190	30	.49	1.20	4			
PURCELL 5 SW	7327	5	58.8	30	-3.6	86.	12	28.	2	217.0	85.0	31.0	-23.0	3.201	30	-.41	.95	29			
SEMINOLE	8042	5	59.7	30	-3.9	86.	11	31.	2	194.5	88.5	36.0	-28.0	4.180	30	.36	1.05	29			
SHAWNEE	8110	5	****	0	****	****	0	****	0	****	****	****	****	3.070	30	-.91	.78	14			
STELLA	8479	5	****	0	****	****	0	****	0	****	****	****	****	2.750	30	****	.77	29			
STILLWATER 2 W	8501	5	55.9	30	-3.4	86.	13	27.	2	282.0	78.0	9.0	-24.0	8.300	30	5.38	5.50	29			
STROUD 1 N	8563	5	****	0	****	****	0	****	0	****	****	****	****	6.121	30	****	3.25	29			
TECUMSEH	8751	5	****	0	****	****	0	****	0	****	****	****	****	2.750	30	****	.65	14			
TROUSDALE	8960	5	****	0	****	****	0	****	0	****	****	****	****	3.080	30	****	.62	14			
UNION CITY 1 SE	9086	5	****	0	****	****	0	****	0	****	****	****	****	3.321	30	.46	1.48	29			
WELTY 1 SSE	9479	5	****	0	****	****	0	****	0	****	****	****	****	6.390	30	****	2.60	29			
WEWOKA	9575	5	****	0	****	****	0	****	0	****	****	****	****	5.070	30	1.36	1.51	29			

APRIL 1993 SUMMARY FOR EAST CENTRAL DIVISION (CD6)

NAME	ID	CD	DEV					HEAT		DEV		COOL		DEV		TOT	NUM	DEV	MAX	24-HR	DAY	
			MEAN	NUM	FROM	MAX	MIN	DEG	FROM	DEG	FROM	DEG	FROM	DEG	FROM							FROM
			TEMP	OBS	NORM	TEMP	DAY	TEMP	DAY	DAY	NORM	DAY	NORM	DAY	NORM	PPT	OBS	NORM				
ASHLAND	364	6	****	0	****	****	0	****	0	****	****	****	****	****	6.941	30	****	1.80	4			
BEGGS	631	6	****	0	****	****	0	****	0	****	****	****	****	****	5.860	30	****	2.50	29			
BOYNTON	1027	6	****	0	****	****	0	****	0	****	****	****	****	****	4.882	30	****	1.34	29			
CALVIN	1391	6	****	0	****	****	0	****	0	****	****	****	****	****	5.842	30	1.64	1.40	14			
CHECOTAH	1711	6	****	0	****	****	0	****	0	****	****	****	****	****	6.853	30	2.73	2.55	29			
CLAYTON 14 WNW	1858	6	****	0	****	****	0	****	0	****	****	****	****	****	8.650	30	****	2.85	14			
DEWAR 2 NE	2485	6	****	0	****	****	0	****	0	****	****	****	****	****	6.060	30	2.04	2.36	29			
DUSTIN	2690	6	****	0	****	****	0	****	0	****	****	****	****	****	6.450	30	****	1.66	29			
EUFULA	2993	6	58.9	30	-4.4	83.	11	33.	2	212.0	96.0	29.0	-36.0	5.390	29	****	1.80	14				
HANNA	3884	6	58.8	30	-3.6	83.	12	31.	2	217.0	91.0	30.5	-17.5	6.481	30	2.39	1.62	4				
HARTSHORNE	3946	6	****	0	****	****	0	****	0	****	****	****	****	7.460	30	****	1.96	14				
HASKELL	3956	6	****	0	****	****	0	****	0	****	****	****	****	6.440	30	2.79	1.98	29				
HOLDENVILLE	4235	6	59.0	23	****	85.	10	29.	2	158.0	****	20.5	****	7.430	30	3.44	2.39	14				
LAKE EUFULA	4975	6	56.5	28	****	85.	13	33.	2	253.0	****	15.0	****	7.032	29	****	2.32	29				
LYONS 2 N	5437	6	****	0	****	****	0	****	0	****	****	****	****	6.551	30	1.78	2.65	14				
MARBLE CITY	5546	6	****	0	****	****	0	****	0	****	****	****	****	7.622	30	****	1.85	15				
MCALESTER FAA	5664	6	60.3	30	-1.6	87.	19	32.	2	193.5	51.5	53.5	4.5	5.102	30	1.00	1.11	4				
MCCURTAIN 1 SE	5693	6	59.1	30	-3.9	85.	10	31.	2	214.5	100.5	36.5	-17.5	8.580	30	4.04	2.20	15				
MUSKOGEE	6130	6	58.2	30	-3.8	82.	12	30.	2	236.0	104.0	31.5	-10.5	5.321	30	1.24	1.63	28				
OKMULGEE W W	6670	6	54.8	30	-5.4	83.	11	30.	2	307.0	135.0	2.5	-25.5	7.232	30	3.04	3.42	28				
OKTAHA 2 NE	6678	6	****	0	****	****	0	****	0	****	****	****	****	5.110	30	****	1.42	29				
QUINTON	7372	6	****	0	****	****	0	****	0	****	****	****	****	6.671	30	2.60	1.86	4				
SALLISAW 2 NE	7862	6	57.6	30	-4.7	85.	11	26.	2	251.0	120.0	29.5	-20.5	7.933	30	3.54	2.87	14				
SCIPIO	7979	6	****	0	****	****	0	****	0	****	****	****	****	7.020	30	****	2.55	14				
SCRAPER	7993	6	****	0	****	****	0	****	0	****	****	****	****	3.910	30	****	.88	5				
SHORT	8170	6	****	0	****	****	0	****	0	****	****	****	****	8.382	30	****	2.73	15				
STILWELL 1 NE	8506	6	55.7	30	-4.6	81.	10	28.	2	292.0	117.0	12.0	-22.0	7.510	30	3.01	1.74	15				
TAHLEQUAH	8677	6	56.3	30	-4.8	81.	11	23.	2	279.5	117.5	17.5	-27.5	5.410	30	1.25	1.40	4				
WEBBERS FALLS	9445	6	55.1	30	-5.2	85.	11	28.	2	311.0	137.0	14.5	-18.5	7.690	30	3.49	1.78	29				
WETUMKA 3 NE	9571	6	****	0	****	****	0	****	0	****	****	****	****	7.840	30	3.60	2.90	14				



APRIL 1993 SUMMARY FOR SOUTHWEST DIVISION (CD7)

NAME	ID	CD	DEV				HEAT				COOL				DEV			
			MEAN	NUM	FROM	MAX	MIN	DAY	DEG	FROM	DEG	FROM	TOT	NUM	FROM	MAX	DAY	
ALTUS IRR STA	179	7	59.5	30	-3.8	90.	12	33.	2	190.0	67.0	25.0	-47.0	3.390	30	1.47	1.78	29
ALTUS DAM	184	7	59.2	30	-2.3	88.	19	35.	2	216.5	60.5	41.0	-7.0	5.250	30	3.34	3.18	29
ANADARKO	224	7	58.1	26	*****	87.	12	28.	2	197.5	*****	18.0	*****	3.660	30	1.20	1.52	29
APACHE	260	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.530	30	1.93	2.00	29
ALTUS AFB	447	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.832	29	*****	1.35	29
CARNEGIE 2 ENE	1504	7	58.4	30	-3.2	87.	12	27.	2	218.0	64.0	20.0	-32.0	5.570	30	3.21	2.87	29
CHATTANOOGA	1706	7	59.9	28	*****	86.	12	31.	2	167.0	*****	25.0	*****	2.070	28	*****	1.72	14
DUNCAN 11 W	2668	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.221	30	*****	1.15	13
FREDERICK	3353	7	56.7	30	-5.6	87.	13	34.	3	261.0	125.0	13.0	-42.0	3.160	30	.86	1.80	29
GRANDFIELD 4 NW	3709	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.850	30	1.45	1.90	14
HEADRICK	3998	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.420	30	*****	1.05	20
HOBART FAA APT	4204	7	57.9	28	*****	88.	12	32.	2	209.0	*****	11.0	*****	4.072	29	*****	1.73	29
HOLLIS	4249	7	59.0	30	-3.9	91.	18	32.	2	189.5	58.5	11.0	-57.0	3.030	30	1.05	1.68	28
LAWTON	5063	7	57.7	30	-4.2	87.	13	34.	2	240.0	101.0	21.0	-25.0	3.121	30	.69	1.73	14
FORT SILL	5068	7	58.6	30	*****	88.	12	33.	2	210.5	*****	18.5	*****	3.374	30	*****	2.14	14
LOOKEBA 2 ENE	5329	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.371	30	.91	1.13	15
MANGUM RES STA	5509	7	57.7	30	-5.2	86.	12	33.	9	226.0	95.0	7.0	-61.0	4.730	30	2.94	1.73	29
RANDLETT 9 E	7403	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.611	30	*****	1.66	29
ROOSEVELT	7727	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.820	30	1.46	1.83	29
SEDAN	8016	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	6.031	30	*****	4.08	29
SNYDER	8299	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.341	30	.09	.88	16
VINSON 3 WNW	9212	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.060	29	*****	1.52	29
WALTERS	9278	7	60.3	30	-3.2	89.	12	34.	2	178.0	57.0	36.0	-40.0	2.400	30	-.48	1.37	14
WICHITA MT WLR	9629	7	54.9	27	*****	85.	19	28.	2	280.5	*****	7.5	*****	3.531	27	*****	1.70	15
WILLOW	9668	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.961	30	*****	1.51	29

APRIL 1993 SUMMARY FOR SOUTH CENTRAL DIVISION (CD8)

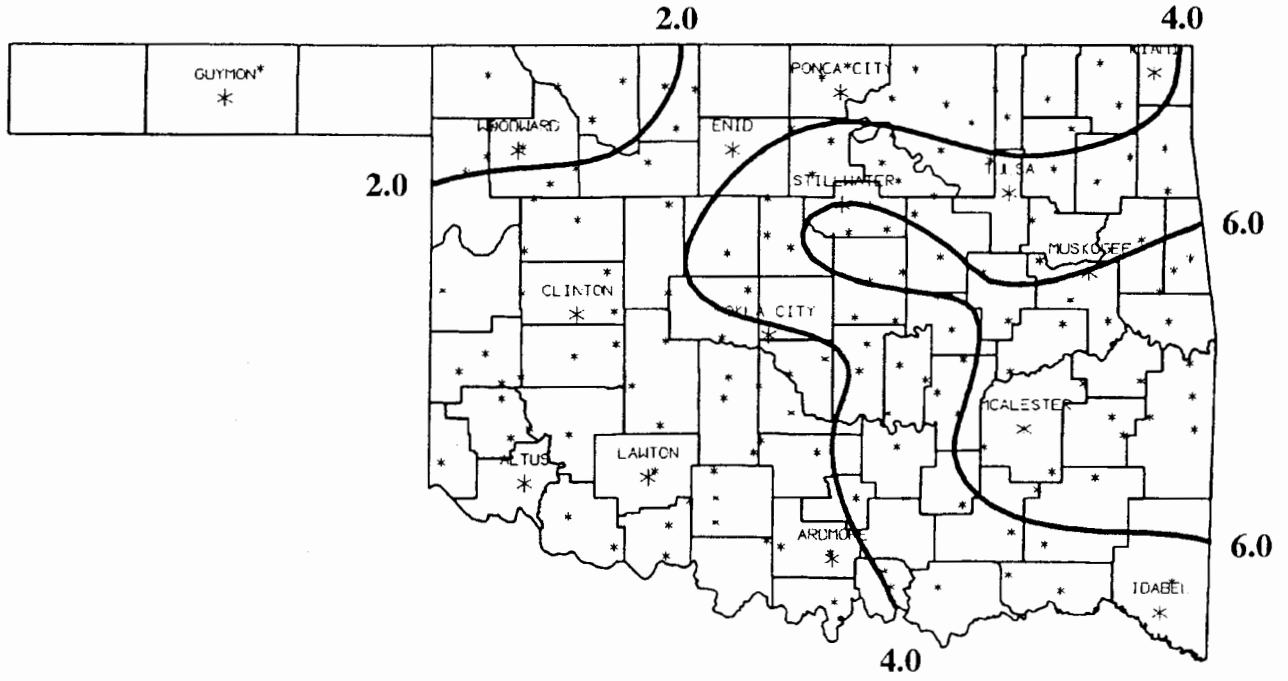
NAME	ID	CD	DEV				HEAT				COOL				DEV			
			MEAN	NUM	FROM	MAX	MIN	DAY	DEG	FROM	DEG	FROM	TOT	NUM	FROM	MAX	DAY	
ADA	17	8	57.5	30	-4.9	86.	10	30.	2	239.5	107.5	14.5	-39.5	7.131	30	3.64	4.08	14
ALLEN	147	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.920	30	*****	1.60	4
ARDMORE	292	8	61.0	29	-3.8	89.	11	33.	2	165.0	69.0	49.5	-40.5	3.830	30	.30	1.10	14
ATOKA DAM	394	8	57.5	22	*****	85.	12	31.	2	190.5	*****	24.5	*****	5.980	22	*****	1.90	26
BOKCHITO	917	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.820	30	*****	1.32	29
CANEY	1437	8	60.6	30	*****	82.	26	34.	2	176.5	*****	44.5	*****	3.610	30	*****	1.67	14
CENTRAHOMA	1648	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	6.300	30	*****	1.70	14
CHICKASAW NRA	1745	8	56.9	30	-4.7	88.	11	28.	2	263.0	118.0	20.5	-22.5	4.170	30	.58	1.45	14
COLEMAN	2011	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.940	30	*****	1.35	4
COMANCHE	2054	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.090	30	.11	1.25	14
DAISY 4 ENE	2354	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	8.081	30	3.03	2.25	14
DUNCAN	2660	8	57.8	30	-4.7	88.	13	33.	2	238.0	111.0	21.5	-30.5	2.750	30	-.24	1.17	14
DURANT USDA	2678	8	58.0	30	-4.2	84.	20	31.	2	226.5	87.5	17.0	-38.0	4.210	30	-.03	1.43	29
ELMORE CITY	2872	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.030	29	*****	1.85	14
FARRIS 3 WNW	3083	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	7.140	30	2.77	2.00	9
GRADY	3688	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.050	30	*****	.65	4
HEALDTON	4001	8	60.4	30	-2.8	90.	24	29.	2	187.5	68.5	50.0	-15.0	3.920	30	.48	1.75	4
HENNEPIN	4052	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.670	30	*****	2.22	14
KETCHUM RANCH	4780	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.230	30	*****	1.20	4
KINGSTON	4865	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.120	30	.24	1.28	4
LEHIGH	5108	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	7.075	30	*****	2.30	14
LINDSAY 2 W	5216	8	58.5	30	-3.9	86.	12	30.	2	219.5	82.5	25.5	-33.5	2.991	30	-.36	.83	14
LOCO 6 SE	5247	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.590	30	*****	1.19	29
MADILL	5468	8	60.7	30	-2.9	87.	10	31.	2	173.0	71.0	43.5	-16.5	3.630	30	-.37	1.10	13
MARIETTA	5563	8	61.5	30	-2.0	89.	10	33.	2	155.5	52.5	52.0	-9.0	3.221	30	-.39	1.64	29
MARLOW 1 WSW	5581	8	59.1	30	-3.2	88.	12	27.	2	210.0	77.0	32.0	-20.0	2.930	30	.01	1.46	14
MCGEE CREEK DAM	5713	8	57.6	28	*****	86.	10	27.	22	220.0	*****	13.5	*****	5.050	30	*****	1.25	13
PAULS VALLEY	6926	8	59.9	30	-3.3	87.	24	28.	2	189.5	67.5	36.5	-31.5	3.000	30	-.45	.90	14
PONTOTOC	7214	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.670	30	-.15	1.45	13
TISHOMINGO NWLR	8884	8	58.8	24	*****	84.	19	33.	2	173.5	*****	25.5	*****	4.550	26	*****	1.79	5
TUSSY	9032	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.710	30	*****	1.32	14
WAURIKA	9395	8	61.6	30	-2.5	90.	12	33.	2	154.0	44.0	53.0	-30.0	1.951	30	-.99	1.30	29
WAURIKA DAM	9399	8	57.3	25	*****	90.	13	34.	2	209.0	*****	17.5	*****	2.261	25	*****	.88	14

**APRIL 1993 SUMMARY FOR SOUTHEAST DIVISION (CD9)**

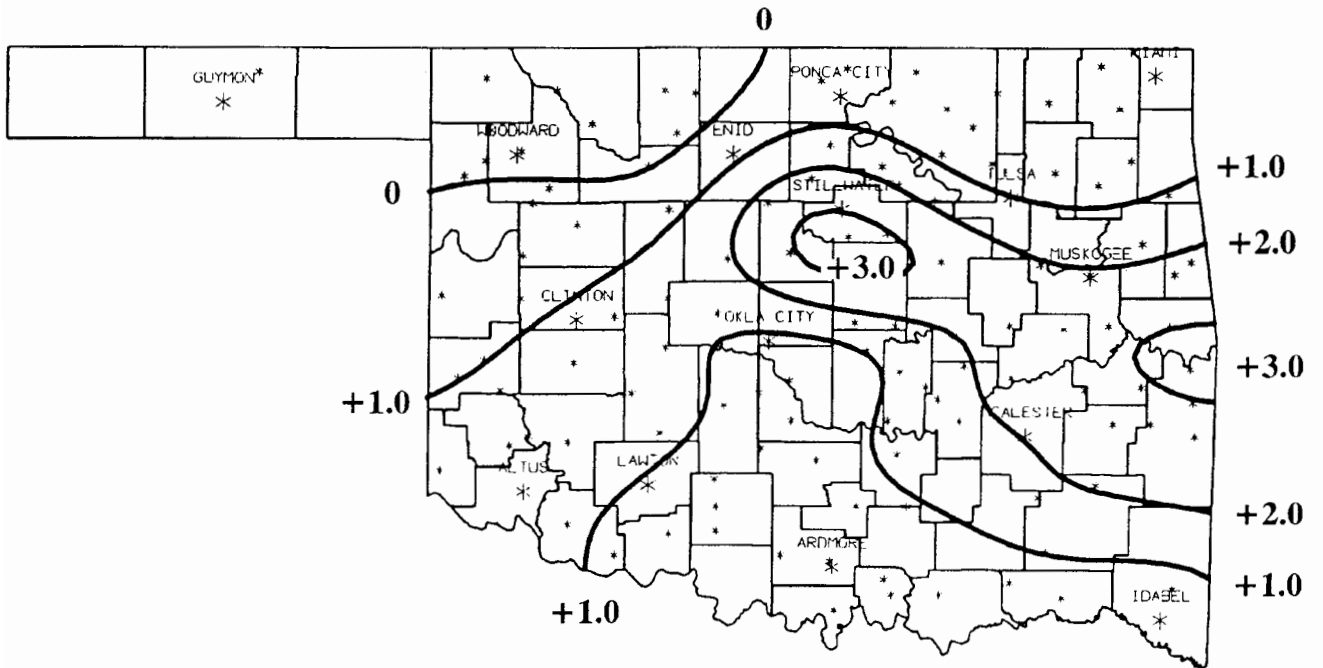
NAME	ID	CD	DEV						HEAT		DEV		COOL		DEV		TOT	NUM	FROM	MAX	24-HR	DAY
			MEAN	NUM	FROM	MAX	MIN	DAY	DEG	FROM	DEG	FROM	DEG	FROM	DEG	FROM						
ANTLERS	256	9	59.3	30	-3.6	84.	10	33.	22	200.0	91.0	30.5	-15.5	5.360	30	1.04	2.11	14				
BATTIEST 1 SSW	567	9	55.0	30	*****	79.	10	29.	22	307.0	*****	7.0	*****	7.030	30	*****	2.20	15				
BEAR MT TWR	584	9	56.1	21	*****	84.	11	37.	16	203.5	*****	17.5	*****	4.361	25	*****	1.25	15				
BENGAL	670	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.260	30	*****	2.37	15				
BOSWELL 4 NNW	980	9	59.0	30	-3.8	83.	19	32.	2	208.5	93.5	29.5	-19.5	4.355	30	.45	1.45	29				
BROKEN BOW 1 N	1162	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.210	30	-.30	1.04	29				
BROKEN BOW DAM	1168	9	57.2	23	*****	85.	11	34.	21	186.0	*****	5.5	*****	4.870	30	.22	1.43	14				
CARNASAW TWR	1499	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.040	30	.15	1.14	15				
CARTER TWR	1544	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.010	30	-.67	1.26	15				
FANSHAWE	3065	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.510	30	2.90	2.20	15				
HEAVENER 1 SE	4008	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.360	30	2.89	2.30	15				
HEE MT TWR	4017	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.440	30	1.71	1.64	15				
HUGO	4384	9	60.8	30	-3.3	82.	11	35.	2	161.0	71.0	35.5	-27.5	4.332	30	.16	1.22	14				
IDABEL	4451	9	57.9	30	-4.1	85.	11	34.	2	228.5	97.5	16.0	-25.0	6.322	30	1.90	1.57	20				
POTEAU	7246	9	57.0	30	-5.9	84.	10	27.	2	248.0	135.0	7.5	-42.5	6.770	30	2.33	1.87	28				
SMITHVILLE 1 W	8285	9	55.8	30	-4.8	89.	19	30.	16	290.5	132.5	16.0	-10.0	6.801	30	2.06	1.70	25				
SPIRO	8416	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.760	30	4.40	2.23	29				
TUSKAHOMA	9023	9	58.3	30	-4.6	83.	11	29.	2	227.0	108.0	27.0	-29.0	6.970	30	2.25	1.98	15				
VALLIANT 3 W	9118	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.101	31	-.24	1.14	15				
WILBURTON 9 ENE	9634	9	57.8	30	-4.2	84.	10	27.	2	239.0	100.0	24.0	-25.0	5.872	30	1.17	1.74	14				

**APRIL 1993 CLIMATE DIVISION SUMMARY**

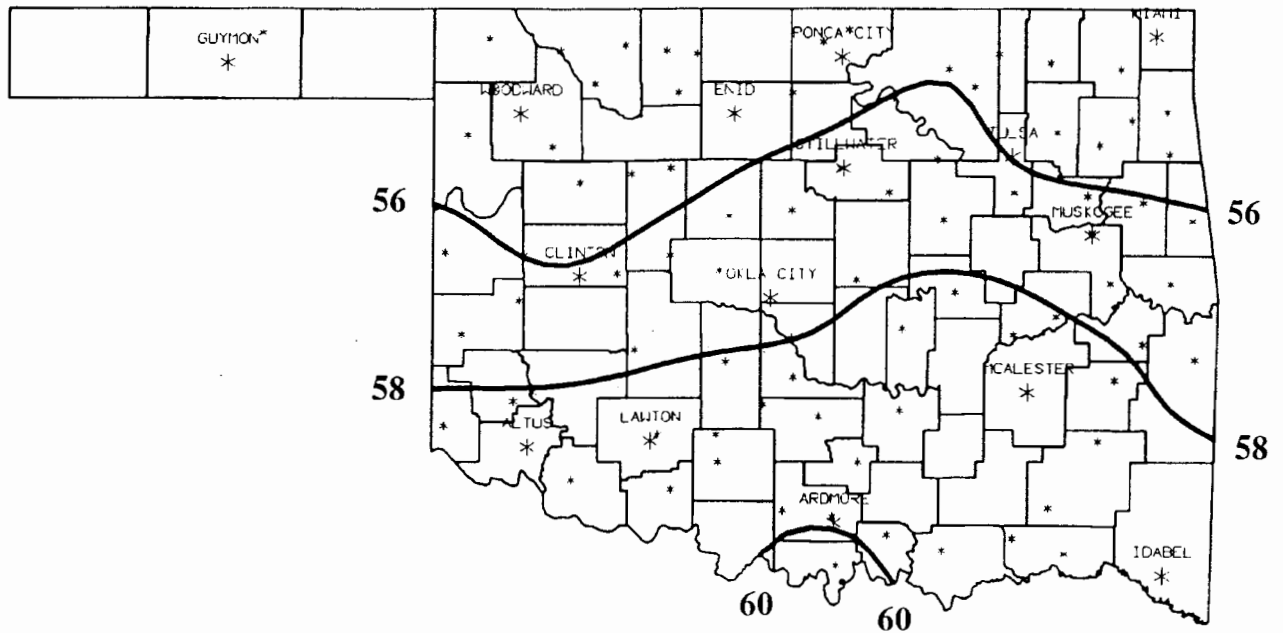
CLIMATE	MEAN	NUM	DEV			HEAT		DEV		COOL		DEV		TOT	NUM	FROM	MAX	24-HR	DAY
			FROM	MAX	MIN	DEGREE	FROM	DEGREE	FROM	DEGREE	FROM	DEGREE							
1	53.5	9	-2.9	91.0	19	25.0	2	350.7	71.4	8.3	-14.3	.91	12	-.68	1.10	29			
2	54.5	15	-4.6	90.0	24	23.0	2	319.5	106.5	4.6	-31.6	2.67	23	.10	3.19	30			
3	55.4	17	-4.9	85.0	10	24.0	2	295.4	117.5	10.7	-27.1	3.85	26	.34	1.97	29			
4	56.0	11	-3.8	90.0	23	28.0	2	277.8	82.0	9.7	-29.9	3.19	19	1.01	3.83	29			
5	57.7	15	-3.8	89.0	12	27.0	2	239.6	86.8	21.9	-28.0	4.68	36	1.48	5.50	29			
6	57.5	10	-4.2	87.0	19	23.0	2	251.4	108.4	25.7	-18.8	6.69	28	2.50	3.42	28			
7	58.6	9	-3.6	91.0	18	27.0	2	214.4	70.9	21.4	-36.2	3.69	20	1.41	4.08	29			
8	59.5	13	-3.4	90.0	13	27.0	22	199.8	77.2	35.4	-25.5	4.13	29	.43	4.08	14			
9	57.9	9	-4.6	89.0	19	27.0	2	234.4	112.3	21.4	-25.4	5.97	19	1.45	2.37	15			



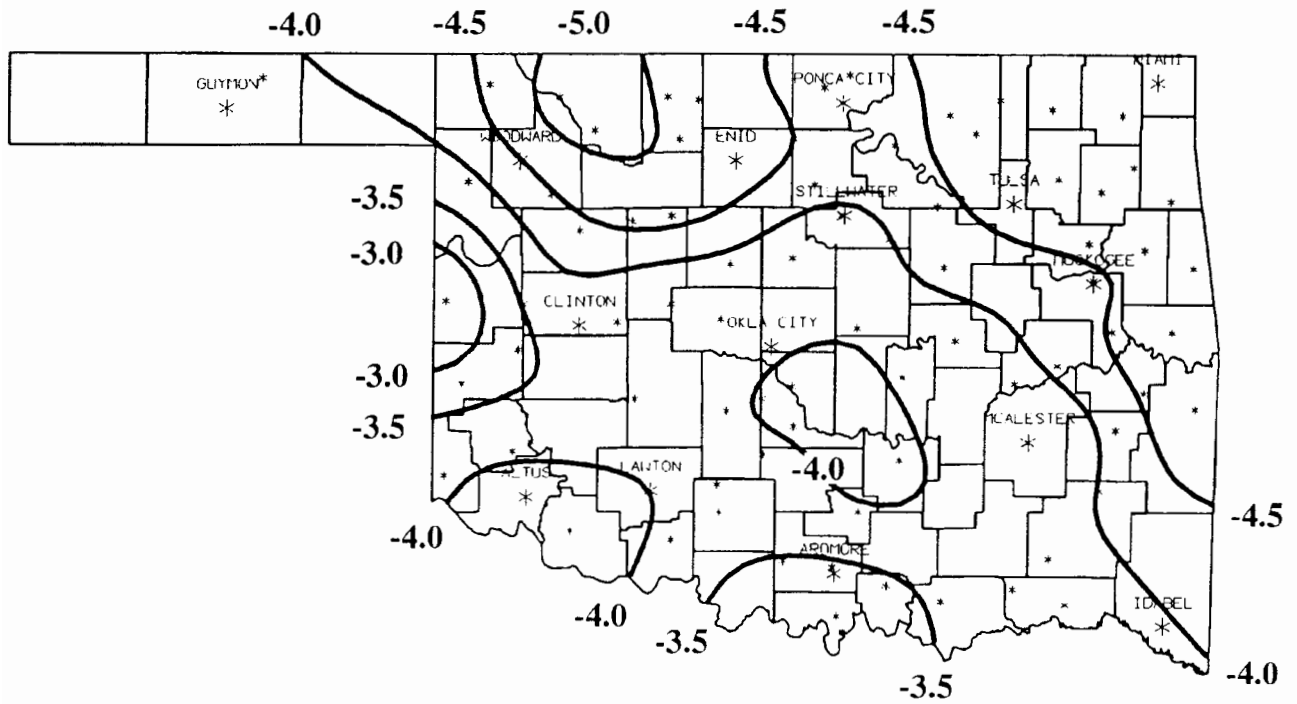
APRIL 1993 TOTAL PRECIPITATION  
(Inches)



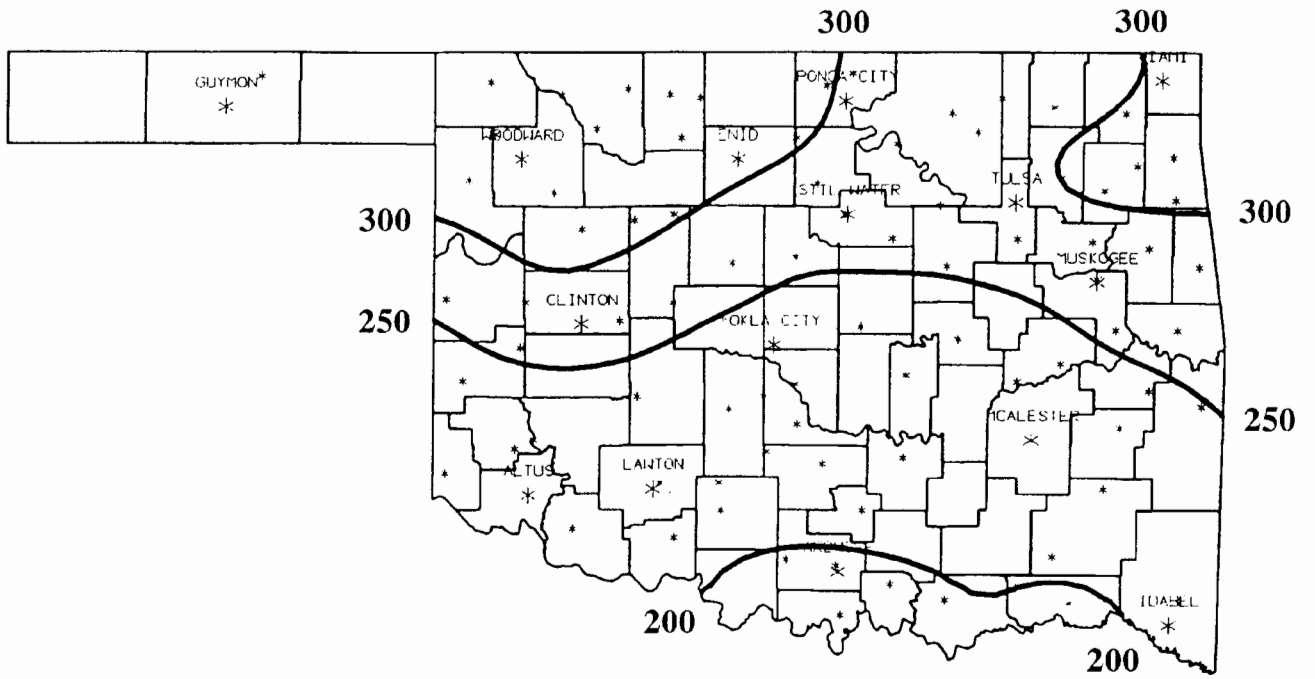
APRIL 1993 DEVIATION FROM NORMAL PRECIPITATION  
(Inches)



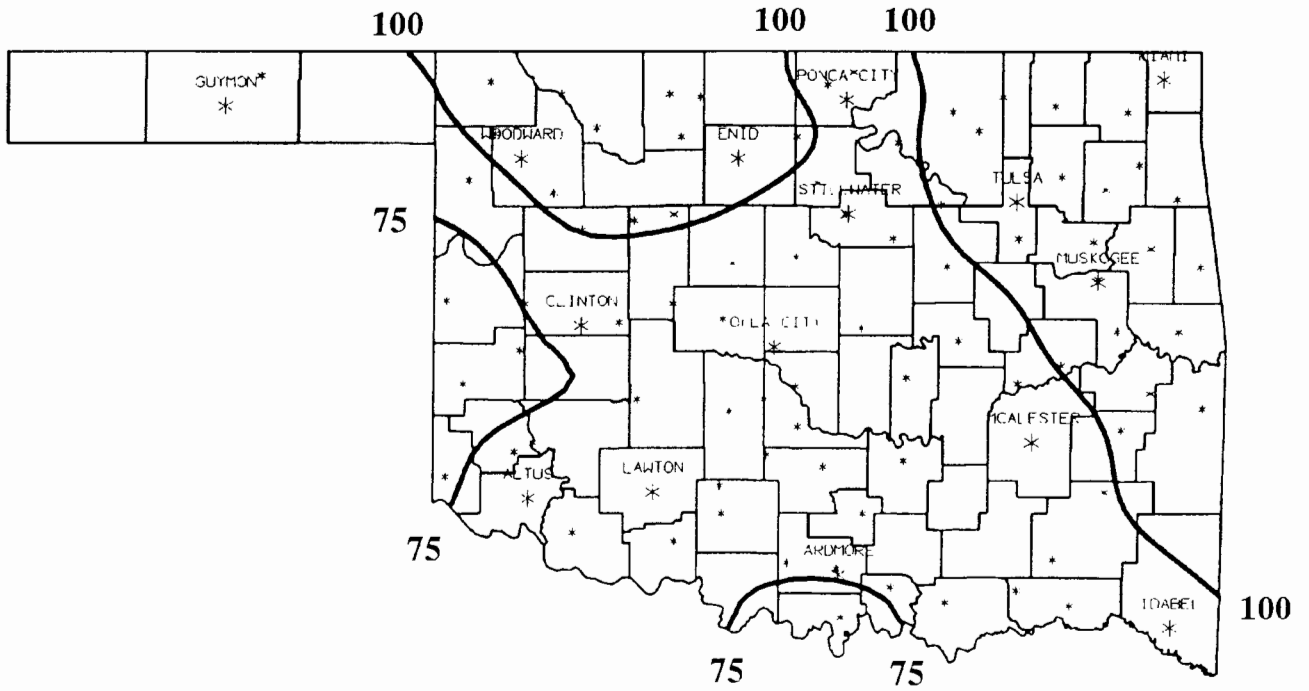
APRIL 1993 AVERAGE MONTHLY TEMPERATURES  
(Degrees F)



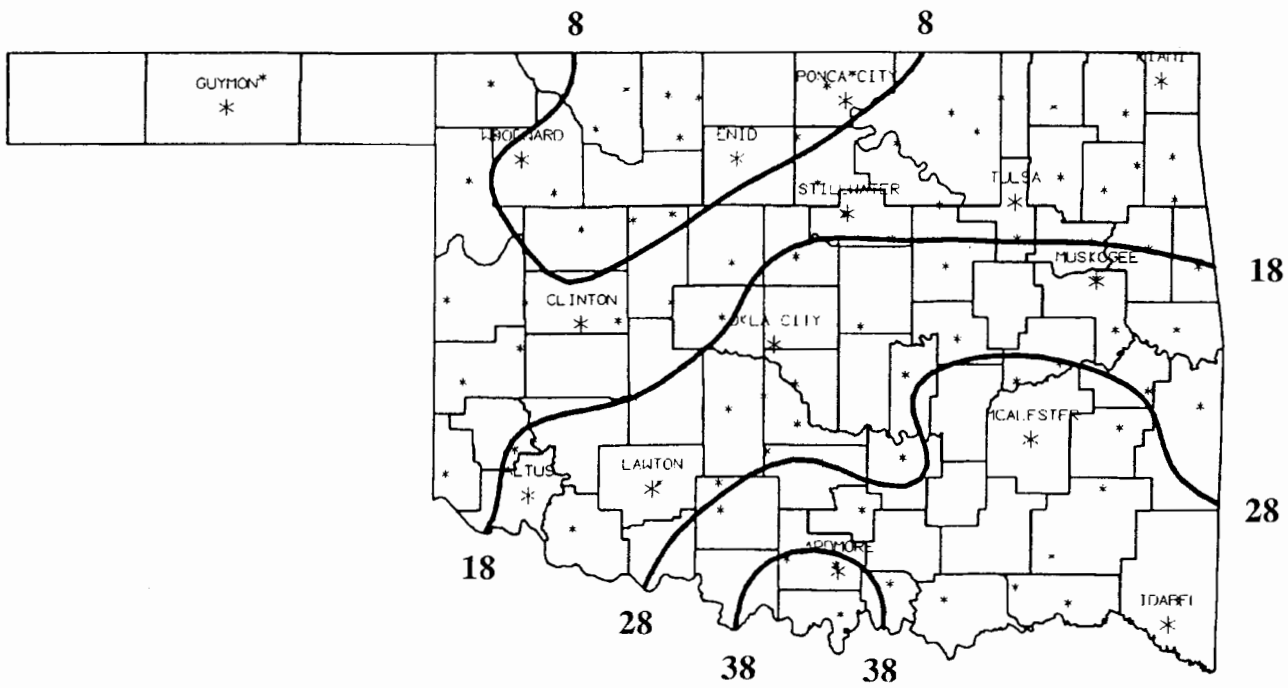
APRIL 1993 DEVIATION FROM NORMAL TEMPERATURES  
(Degrees F)



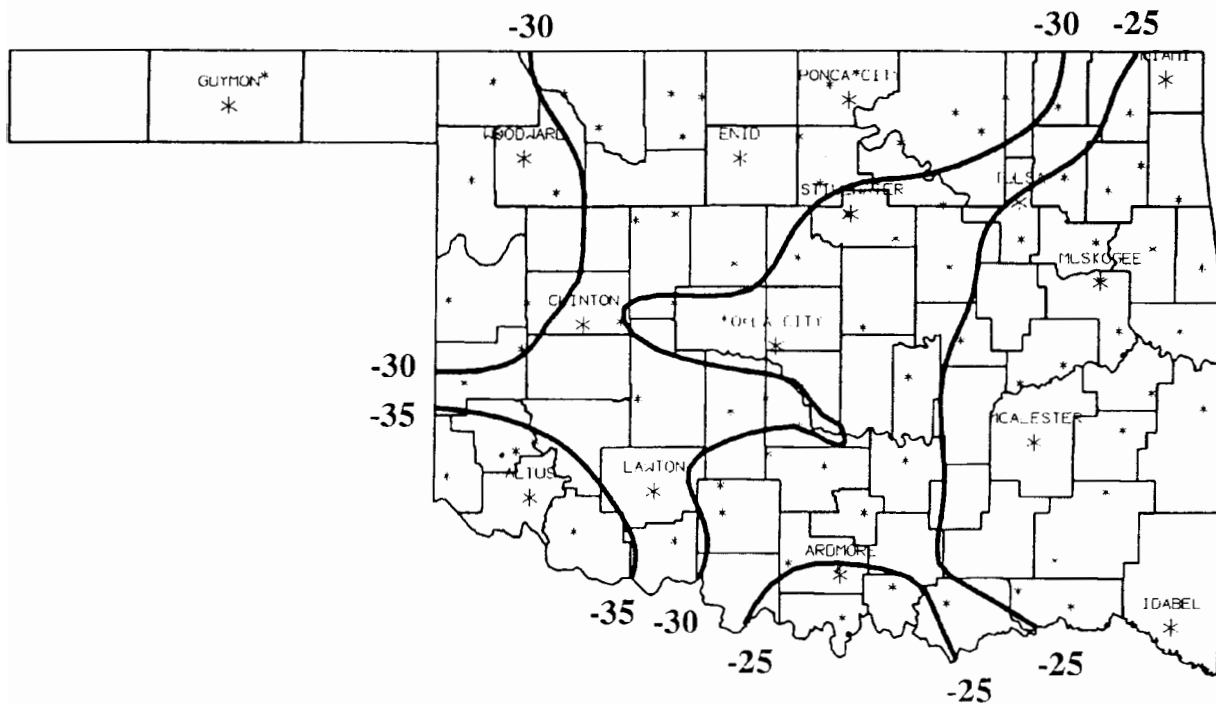
APRIL 1993 HEATING DEGREE DAYS



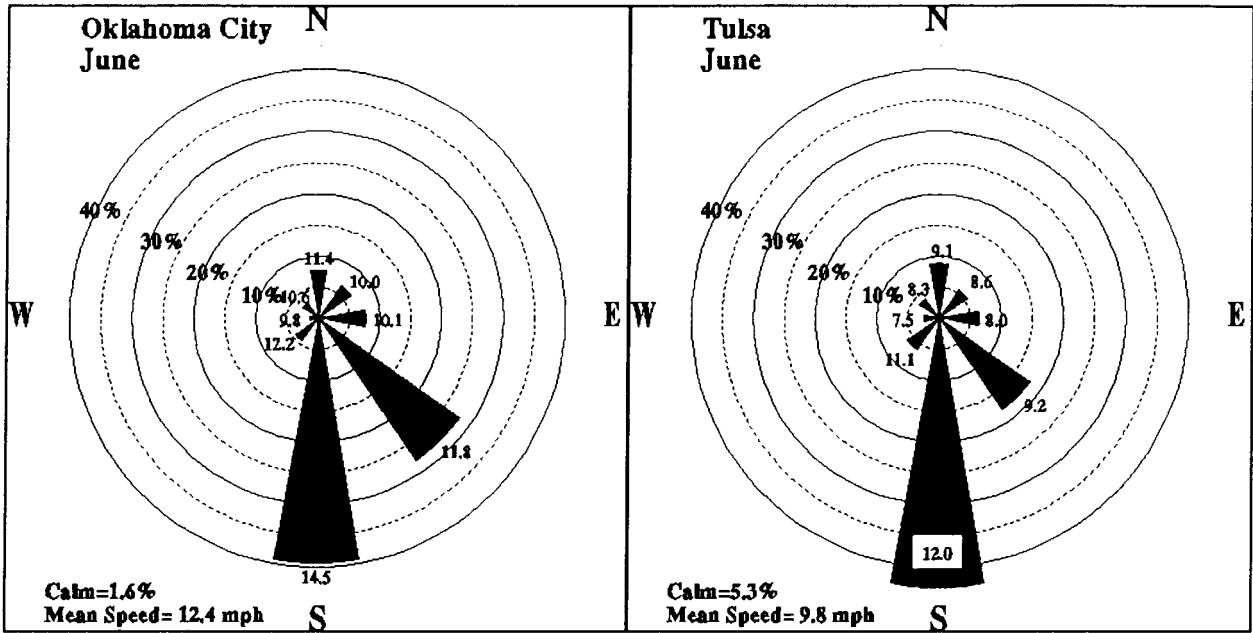
APRIL 1993 DEVIATION FROM NORMAL HEATING DEGREE DAYS



APRIL 1993 COOLING DEGREE DAYS



APRIL 1993 DEVIATION FROM NORMAL COOLING DEGREE DAYS



June Wind Roses for Oklahoma City and Tulsa. Percents represent the frequency of winds from each direction. The numbers at the ends of the bars indicate the average wind speed (miles per hour) from that direction.

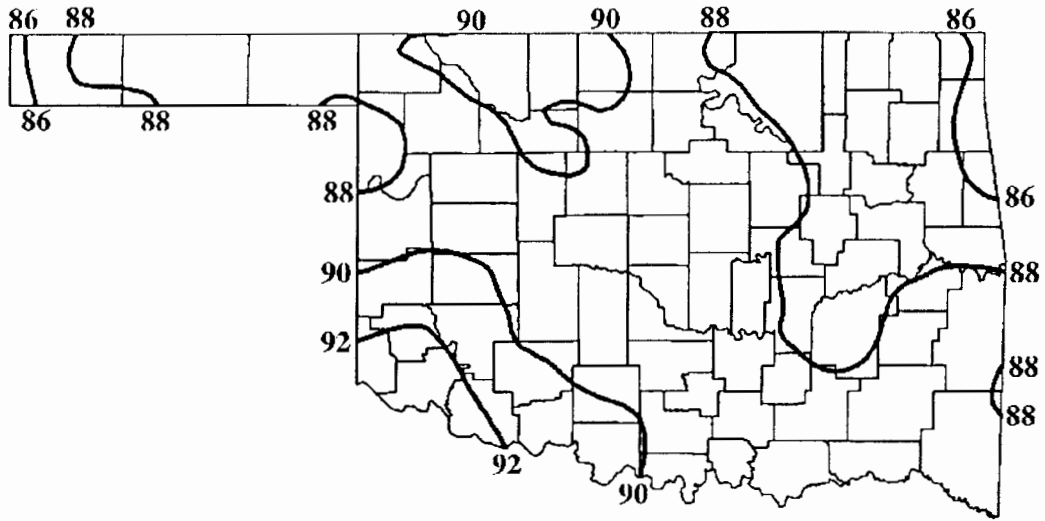
JUNE 1993 SUNRISE AND SUNSET

OKLAHOMA CITY

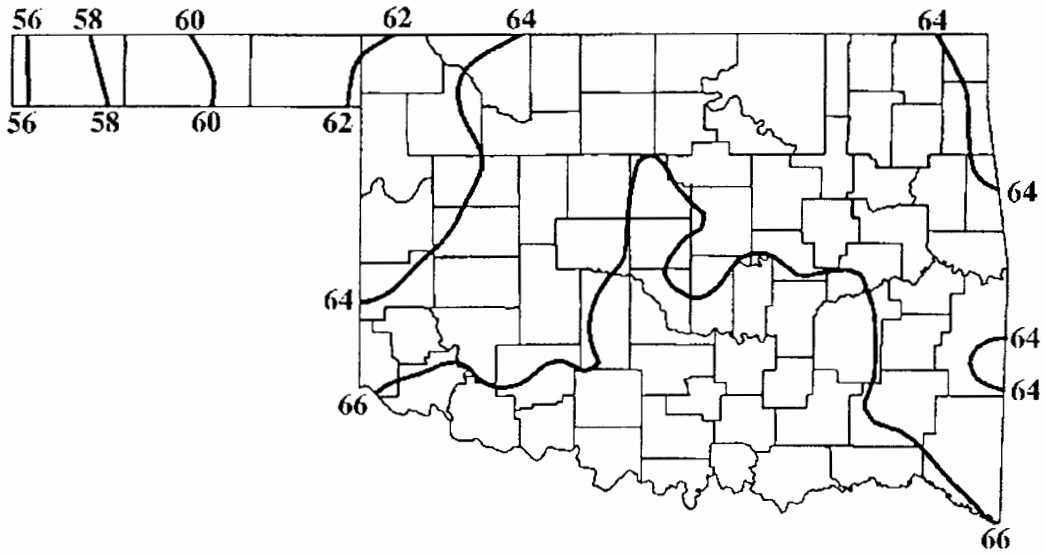
TULSA

DATE	SUNRISE	SUNSET	DAYLIGHT
93 6 1	6:19AM	8:37PM CDT	14 hrs 19 mins
93 6 2	6:18AM	8:38PM CDT	14 hrs 19 mins
93 6 3	6:18AM	8:38PM CDT	14 hrs 20 mins
93 6 4	6:18AM	8:39PM CDT	14 hrs 21 mins
93 6 5	6:18AM	8:40PM CDT	14 hrs 22 mins
93 6 6	6:18AM	8:40PM CDT	14 hrs 23 mins
93 6 7	6:17AM	8:41PM CDT	14 hrs 23 mins
93 6 8	6:17AM	8:41PM CDT	14 hrs 24 mins
93 6 9	6:17AM	8:42PM CDT	14 hrs 24 mins
93 6 10	6:17AM	8:42PM CDT	14 hrs 25 mins
93 6 11	6:17AM	8:43PM CDT	14 hrs 26 mins
93 6 12	6:17AM	8:43PM CDT	14 hrs 26 mins
93 6 13	6:17AM	8:43PM CDT	14 hrs 26 mins
93 6 14	6:17AM	8:44PM CDT	14 hrs 27 mins
93 6 15	6:17AM	8:44PM CDT	14 hrs 27 mins
93 6 16	6:17AM	8:45PM CDT	14 hrs 28 mins
93 6 17	6:17AM	8:45PM CDT	14 hrs 28 mins
93 6 18	6:17AM	8:45PM CDT	14 hrs 28 mins
93 6 19	6:17AM	8:46PM CDT	14 hrs 28 mins
93 6 20	6:18AM	8:46PM CDT	14 hrs 28 mins
93 6 21	6:18AM	8:46PM CDT	14 hrs 28 mins
93 6 22	6:18AM	8:46PM CDT	14 hrs 28 mins
93 6 23	6:18AM	8:46PM CDT	14 hrs 28 mins
93 6 24	6:18AM	8:47PM CDT	14 hrs 28 mins
93 6 25	6:19AM	8:47PM CDT	14 hrs 28 mins
93 6 26	6:19AM	8:47PM CDT	14 hrs 28 mins
93 6 27	6:19AM	8:47PM CDT	14 hrs 28 mins
93 6 28	6:20AM	8:47PM CDT	14 hrs 28 mins
93 6 29	6:20AM	8:47PM CDT	14 hrs 27 mins
93 6 30	6:20AM	8:47PM CDT	14 hrs 27 mins

DATE	SUNRISE	SUNSET	DAYLIGHT
93 6 1	6:10AM	8:32PM CDT	14 hrs 23 mins
93 6 2	6:10AM	8:33PM CDT	14 hrs 23 mins
93 6 3	6: 9AM	8:34PM CDT	14 hrs 24 mins
93 6 4	6: 9AM	8:34PM CDT	14 hrs 25 mins
93 6 5	6: 9AM	8:35PM CDT	14 hrs 26 mins
93 6 6	6: 9AM	8:35PM CDT	14 hrs 27 mins
93 6 7	6: 8AM	8:36PM CDT	14 hrs 27 mins
93 6 8	6: 8AM	8:36PM CDT	14 hrs 28 mins
93 6 9	6: 8AM	8:37PM CDT	14 hrs 29 mins
93 6 10	6: 8AM	8:37PM CDT	14 hrs 29 mins
93 6 11	6: 8AM	8:38PM CDT	14 hrs 30 mins
93 6 12	6: 8AM	8:38PM CDT	14 hrs 30 mins
93 6 13	6: 8AM	8:39PM CDT	14 hrs 31 mins
93 6 14	6: 8AM	8:39PM CDT	14 hrs 31 mins
93 6 15	6: 8AM	8:40PM CDT	14 hrs 31 mins
93 6 16	6: 8AM	8:40PM CDT	14 hrs 32 mins
93 6 17	6: 8AM	8:40PM CDT	14 hrs 32 mins
93 6 18	6: 8AM	8:41PM CDT	14 hrs 32 mins
93 6 19	6: 8AM	8:41PM CDT	14 hrs 32 mins
93 6 20	6: 9AM	8:41PM CDT	14 hrs 33 mins
93 6 21	6: 9AM	8:41PM CDT	14 hrs 33 mins
93 6 22	6: 9AM	8:42PM CDT	14 hrs 33 mins
93 6 23	6: 9AM	8:42PM CDT	14 hrs 33 mins
93 6 24	6: 9AM	8:42PM CDT	14 hrs 33 mins
93 6 25	6:10AM	8:42PM CDT	14 hrs 32 mins
93 6 26	6:10AM	8:42PM CDT	14 hrs 32 mins
93 6 27	6:10AM	8:42PM CDT	14 hrs 32 mins
93 6 28	6:11AM	8:43PM CDT	14 hrs 32 mins
93 6 29	6:11AM	8:43PM CDT	14 hrs 32 mins
93 6 30	6:11AM	8:43PM CDT	14 hrs 31 mins

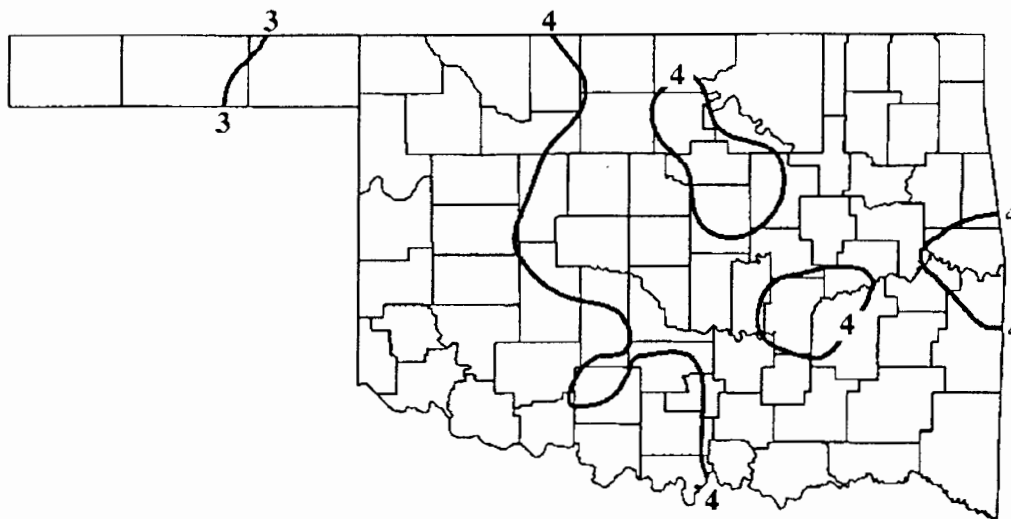


June Normal Daily Maximum Temperatures (°F)



June Normal Daily Minimum Temperatures (°F)





June Normal Monthly Precipitation (inches)

90-DAY NATIONAL WEATHER SERVICE OUTLOOK

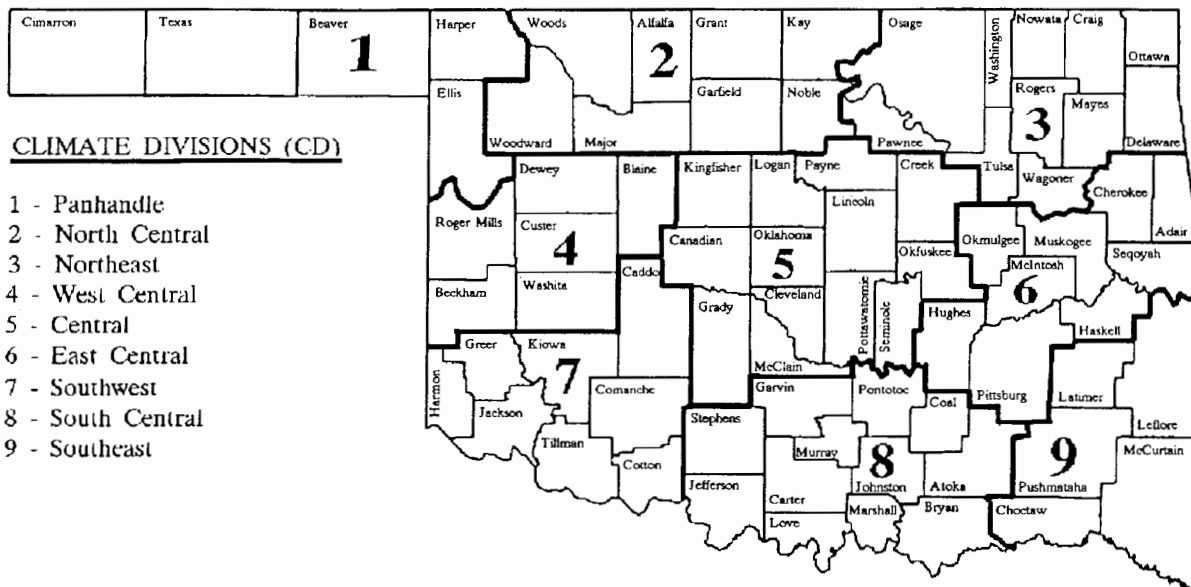
(MAY 1993 - JULY 1993)

Precipitation - Above Normal in Panhandle  
and Southwest Half of State

Near Normal Elsewhere

Temperature - Below Normal Statewide

# OKLAHOMA



## CLIMATE DIVISIONS (CD)

- 1 - Panhandle
- 2 - North Central
- 3 - Northeast
- 4 - West Central
- 5 - Central
- 6 - East Central
- 7 - Southwest
- 8 - South Central
- 9 - Southeast

## EXPLANATION OF TABLES

Two kinds of tables appear in this summary. The first is a set of tables containing all reporting stations grouped by climate division. The figure above shows the locations of the climate divisions. Each table contains the following information for each station:

- Station Name:
- Station Identification Number: These are usually assigned by the National Climatic Data Center.
- Climate Division: See the figure above.
- Number of Temperature Observations: These are the actual number of temperature reports recorded at the station during the current month. Missing observations may result in artificially high or low mean monthly temperatures.
- Deviation from Normal: The deviation of the observed mean monthly temperature from the monthly station normal. A positive value indicates the month was warmer than normal. A negative value indicates the month was cooler than normal. Normal monthly temperatures may be calculated by subtracting the deviation from the observed temperature.
- Maximum Daily Maximum: The maximum daily maximum temperature observed during the current month and year and the day which it occurred.
- Minimum Daily Minimum: The minimum daily minimum temperature observed during the current month and year and the day which it occurred.
- Heating Degree Days: HDD are calculated each day of the month for which there is a temperature report and the average temperature for the day exceeds 65 degrees. Daily values are summed to arrive at a monthly total. They are a qualitative measure of how much heat was required to maintain a comfortable indoor temperature. Missing observations may result in an artificially high or low value. For February 1984 HDD would be calculated as:

$$\sum_{i=1}^{29} 65 - ((TMAX_i + TMIN_i) / 2)$$

Deviation from Normal Heating Degree Days: A positive value indicates higher than normal heating requirements for the month as a whole. A negative value indicates lower than normal heating requirements for the month as a whole. Normal HDD may be calculated by subtracting the deviation from observed HDD.

Cooling Degree Days: CDD are calculated each day of the month for which there is a temperature report and the average temperature for the day is less than 65 degrees. Daily values are summed to give a monthly total. They are a proxy measure of how much cooling was required to maintain a comfortable indoor temperature. Missing observations may result in an artificially high or low value. For June, CDD would be calculated as:

$$\sum_{i=1}^{30} ((TMAX_i + TMIN_i) / 2) - 65$$

Deviation from Normal Cooling Degree Days: A positive value indicates higher than normal cooling requirements for the month as a whole. A negative value indicates lower than normal cooling requirements for the month as a whole. Normal cooling degree days may be found by subtracting the deviation from the observed cooling degree days.

Total Precipitation: Often incorrectly referred to as mean precipitation, this value is the sum of all precipitation reported during the month at a station. If snow occurred, it is to be melted and its water equivalent recorded.

Number of Precipitation Observations: The number of days a rain or no-rain observation was reported. Missing observations frequently result in artificially low total precipitation values.

Deviation from Normal Precipitation: A positive value indicates more rain than normal was received. A negative value indicates less than was expected rainfall was received. Normal rainfall may be calculated by subtracting the deviation from monthly total.

Maximum 24-Hour Report and Day: The maximum amount of precipitation recorded during the station's 24-hour observation period for the current month and year and the day on which it was recorded.

The second set of tables contain similar information but are the average or extreme over all the stations reporting in each climate division.

The data on this calendar are for Oklahoma City.  
 Normal values are calculated for the period  
 1961-1990. Extremes are found for the period  
 of record (1891-present).

OKLAHOMA CITY CLIMATE CALENDAR

June 1993

Normal 1	Actual	Normal 2	Actual	Normal 3	Actual	Normal 4	Actual	Normal 5	Actual	Normal 6	Actual	Normal 7	Actual
80.7 max 67.7 min .25 ppt 0 hdd 7 cdd Highest Max 99-1913 Lowest Max 58-1903 Lowest Min 48-1982 Highest Min 75-1943 Greatest ppt 3.37-1962	81.5 max 62.1 min .24 ppt 1 hdd 7 cdd Highest Max 97-1910 Lowest Max 56-1919 Lowest Min 6-1917 Highest Min 74-1980 Greatest ppt 1.66-1973	81.5 max 61.9 min .23 ppt 7 hdd 0 cdd Highest Max 96-1959 Lowest Max 64-1919 Lowest Min 49-1919 Highest Min 75-1925 Greatest ppt 6.75-1932	82.8 max 62.6 min .21 ppt 0 hdd 8 cdd Highest Max 95-1913 Lowest Max 62-1928 Lowest Min 47-1954 Highest Min 75-1911 Greatest ppt 3.90-1904	83.8 max 63.6 min .11 ppt 0 hdd 9 cdd Highest Max 99-1917 Lowest Max 66-1892 Lowest Min 48-1919 Highest Min 75-1980 Greatest ppt 1.48-1927	85.2 max 64.0 min .09 ppt 10 hdd 10 cdd Highest Max 102-1911 Lowest Max 69-1983 Lowest Min 52-1917 Highest Min 75-1990 Greatest ppt 3.01-1941	86.6 max 64.9 min .11 ppt 0 hdd 11 cdd Highest Max 100-1911 Lowest Max 66-1891 Lowest Min 51-1963 Highest Min 78-1980 Greatest ppt 1.44-1908	87.2 max 66.4 min .18 ppt 0 hdd 12 cdd Highest Max 100-1988 Lowest Max 64-1913 Lowest Min 52-1915 Highest Min 76-1964 Greatest ppt 2.50-1974	87.0 max 66.3 min .10 ppt 12 hdd 12 cdd Highest Max 104-1953 Lowest Max 72-1903 Lowest Min 50-1896 Highest Min 78-1958 Greatest ppt 4.74-1944	87.0 max 66.3 min .10 ppt 12 hdd 12 cdd Highest Max 104-1953 Lowest Max 72-1903 Lowest Min 50-1896 Highest Min 78-1958 Greatest ppt 4.74-1944	87.4 max 67.2 min .15 ppt 0 hdd 12 cdd Highest Max 101-1924 Lowest Max 70-1927 Lowest Min 52-1906 Highest Min 78-1958 Greatest ppt 4.56-1989	87.4 max 67.2 min .15 ppt 0 hdd 12 cdd Highest Max 101-1924 Lowest Max 70-1927 Lowest Min 52-1906 Highest Min 78-1958 Greatest ppt 4.56-1989	88.5 max 67.2 min .18 ppt 0 hdd 13 cdd Highest Max 106-1953 Lowest Max 63-1927 Lowest Min 51-1947 Highest Min 78-1953 Greatest ppt 3.95-1930	88.5 max 67.2 min .18 ppt 0 hdd 13 cdd Highest Max 106-1953 Lowest Max 63-1927 Lowest Min 51-1947 Highest Min 78-1953 Greatest ppt 3.95-1930
87.8 max 66.5 min .10 ppt 0 hdd 12 cdd Highest Max 105-1959 Lowest Max 71-1908 Lowest Min 55-1969 Highest Min 79-1953 Greatest ppt 3.01-1930	86.7 max 66.3 min .18 ppt 12 hdd 12 cdd Highest Max 106-1911 Lowest Max 70-1961 Lowest Min 50-1917 Highest Min 77-1953 Greatest ppt 3.59-1955	87.9 max 66.5 min .07 ppt 0 hdd 12 cdd Highest Max 102-1924 Lowest Max 69-1969 Lowest Min 53-1912 Highest Min 78-1990 Greatest ppt 1.85-1975	88.8 max 67.8 min .06 ppt 0 hdd 13 cdd Highest Max 101-1936 Lowest Max 68-1912 Lowest Min 53-1912 Highest Min 78-1924 Greatest ppt .93-1957	89.4 max 67.6 min .09 ppt 0 hdd 14 cdd Highest Max 101-1953 Lowest Max 70-1920 Lowest Min 55-1926 Highest Min 80-1953 Greatest ppt 1.68-1987	89.8 max 67.6 min .22 ppt 0 hdd 14 cdd Highest Max 105-1953 Lowest Max 73-1905 Lowest Min 51-1976 Highest Min 77-1990 Greatest ppt 2.28-1958	89.8 max 68.4 min .25 ppt 0 hdd 14 cdd Highest Max 104-1953 Lowest Max 69-1902 Lowest Min 55-1906 Highest Min 79-1953 Greatest ppt 3.28-1948	89.8 max 67.6 min .09 ppt 0 hdd 14 cdd Highest Max 101-1936 Lowest Max 68-1912 Lowest Min 53-1912 Highest Min 78-1924 Greatest ppt .93-1957	89.5 max 68.3 min .11 ppt 0 hdd 14 cdd Highest Max 104-1918 Lowest Max 69-1904 Lowest Min 51-1974 Highest Min 81-1935 Greatest ppt 1.70-1985	89.5 max 68.3 min .11 ppt 0 hdd 14 cdd Highest Max 104-1918 Lowest Max 69-1904 Lowest Min 51-1974 Highest Min 81-1935 Greatest ppt 1.70-1985	91.0 max 68.3 min .04 ppt 0 hdd 15 cdd Highest Max 103-1980 Lowest Max 75-1904 Lowest Min 52-1974 Highest Min 78-1947 Greatest ppt 2.19-1907	91.0 max 68.3 min .04 ppt 0 hdd 15 cdd Highest Max 103-1980 Lowest Max 75-1904 Lowest Min 52-1974 Highest Min 78-1947 Greatest ppt 2.19-1907	91.3 max 68.9 min .14 ppt 0 hdd 15 cdd Highest Max 105-1980 Lowest Max 78-1923 Lowest Min 56-1974 Highest Min 78-1986 Greatest ppt 3.10-1988	91.3 max 68.9 min .14 ppt 0 hdd 15 cdd Highest Max 105-1980 Lowest Max 78-1923 Lowest Min 56-1974 Highest Min 78-1986 Greatest ppt 3.10-1988
90.0 max 68.2 min .16 ppt 0 hdd 14 cdd Highest Max 107-1926 Lowest Max 73-1912 Lowest Min 50-1902 Highest Min 79-1936 Greatest ppt 2.38-1957	88.3 max 67.8 min .20 ppt 0 hdd 13 cdd Highest Max 101-1934 Lowest Max 68-1921 Lowest Min 58-1958 Highest Min 77-1934 Greatest ppt 2.79-1908	88.4 max 68.3 min .14 ppt 0 hdd 13 cdd Highest Max 104-1911 Lowest Max 74-1909 Lowest Min 54-1957 Highest Min 78-1959 Greatest ppt 2.06-1948	88.7 max 68.3 min .21 ppt 0 hdd 14 cdd Highest Max 105-1980 Lowest Max 68-1967 Lowest Min 51-1974 Highest Min 82-1911 Greatest ppt 2.29-1960	89.5 max 68.3 min .11 ppt 0 hdd 14 cdd Highest Max 104-1918 Lowest Max 69-1904 Lowest Min 51-1974 Highest Min 81-1935 Greatest ppt 1.70-1985	91.0 max 68.3 min .04 ppt 0 hdd 15 cdd Highest Max 103-1980 Lowest Max 75-1904 Lowest Min 52-1974 Highest Min 78-1947 Greatest ppt 2.19-1907	91.3 max 68.9 min .14 ppt 0 hdd 15 cdd Highest Max 105-1980 Lowest Max 78-1923 Lowest Min 56-1974 Highest Min 78-1986 Greatest ppt 3.10-1988	91.8 max 69.7 min .06 ppt 0 hdd 16 cdd Highest Max 103-1925 Lowest Max 76-1908 Lowest Min 54-1923 Highest Min 78-1947 Greatest ppt 2.00-1987	91.8 max 69.7 min .06 ppt 0 hdd 16 cdd Highest Max 103-1925 Lowest Max 76-1908 Lowest Min 54-1923 Highest Min 78-1947 Greatest ppt 2.00-1987					

JUNE AVERAGES

TEMPERATURE : 76.9°F  
 PRECIPITATION : 4.36"  
 HEATING DEGREE DAYS : 1  
 COOLING DEGREE DAYS : 362

The data on this calendar are for Tulsa. Normal values are calculated for the period 1948-1991. Temperature extremes are for the period 1905-1992; precipitation extremes are for the period 1948-1992.

TULSA CLIMATE CALENDAR

June 1993

Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual								
82.0 max 62.0 min 2.21 ppt 0 hdd 7 cdd	98-1934 Highest Max 71-1957 Lowest Max 51-1982 Lowest Min 77-1980 Highest Min 2.89-1963 Greatest ppt	84.0 max 64.0 min .16 ppt 0 hdd 10 cdd	102-1911 Highest Max 71-1982 Lowest Max 49-1954 Lowest Min 75-1980 Highest Min 2.87-1985 Greatest ppt	84.0 max 65.0 min .24 ppt 0 hdd 10 cdd	102-1911 Highest Max 73-1985 Lowest Max 49-1919 Lowest Min 78-1980 Highest Min 3.11-1952 Greatest ppt	88.0 max 68.0 min .21 ppt 0 hdd 13 cdd	104-1911 Highest Max 75-1971 Lowest Max 52-1915 Lowest Min 79-1984 Highest Min 4.90-1974 Greatest ppt	88.0 max 68.0 min .07 ppt 0 hdd 13 cdd	101-1911 Highest Max 73-1985 Lowest Max 49-1919 Lowest Min 78-1980 Highest Min 3.11-1952 Greatest ppt	88.0 max 68.0 min .11 ppt 0 hdd 13 cdd	100-1924 Highest Max 75-1975 Lowest Max 51-1955 Lowest Min 77-1958 Highest Min 2.07-1967 Greatest ppt	89.0 max 69.0 min .24 ppt 0 hdd 15 cdd	107-1918 Highest Max 74-1978 Lowest Max 53-1976 Lowest Min 77-1964 Highest Min 1.45-1978 Greatest ppt	89.0 max 69.0 min .09 ppt 0 hdd 15 cdd	107-1918 Highest Max 77-1961 Lowest Max 53-1976 Lowest Min 77-1964 Highest Min 1.45-1978 Greatest ppt	90.0 max 70.0 min .15 ppt 0 hdd 15 cdd	105-1933 Highest Max 70-1967 Lowest Max 52-1974 Lowest Min 80-1980 Highest Min 1.98-1967 Greatest ppt	90.0 max 69.0 min .09 ppt 0 hdd 15 cdd	106-1925 Highest Max 72-1980 Lowest Max 52-1960 Lowest Min 79-1980 Highest Min 3.97-1980 Greatest ppt	90.0 max 69.0 min .14 ppt 0 hdd 15 cdd	106-1936 Highest Max 80-1965 Lowest Max 56-1935 Lowest Min 77-1984 Highest Min 1.87-1985 Greatest ppt	91.0 max 70.0 min .17 ppt 0 hdd 16 cdd	106-1925 Highest Max 78-1985 Lowest Max 53-1968 Lowest Min 80-1980 Highest Min 1.15-1956 Greatest ppt	91.0 max 71.0 min .06 ppt 0 hdd 17 cdd	105-1925 Highest Max 78-1973 Lowest Max 57-1923 Lowest Min 80-1980 Highest Min 1.97-1992 Greatest ppt	91.0 max 72.0 min .14 ppt 0 hdd 17 cdd	107-1925 Highest Max 76-1951 Lowest Max 57-1943 Lowest Min 80-1980 Highest Min 2.78-1951 Greatest ppt

JUNE AVERAGES

TEMPERATURE : 77.7°F  
 PRECIPITATION : 4.53"  
 HEATING DEGREE DAYS : 0  
 COOLING DEGREE DAYS : 391