

OKLAHOMA MONTHLY SUMMARY MAY 1993

TABLE OF CONTENTS

May 1993 Oklahoma Summary.....	2
Table of May 1992/1993 Comparisons.....	5
May 1993 Data Summary Tables.....	6
May 1993 State Map Summary.....	11
July Climatological Normals.....	15
90-Day National Weather Service Outlook.....	17
Explanation of Tables and Maps.....	18
July 1993 Oklahoma City Climate Calendar.....	20
July 1993 Tulsa Climate Calendar.....	21

MONTHLY SUMMARY FOR MAY 1993

Extremely heavy rains and resultant widespread flooding during the Mother's Day weekend produced the most dramatic weather story in May, a month that was notable for its violent weather. Wet, cool weather dominated Oklahoma during most of the month. The statewide averaged precipitation for the month was 7.72 inches, 2.86 inches above normal and the 10th highest May total since 1892. Temperatures averaged 66.6 degrees, 2.1 degrees below normal. Through the first five months of 1993, Oklahoma precipitation reporting stations had received an average of 19.54 inches (5.79 inches above normal). The year-to-date temperature average of 49.6 degrees is 2.1 degrees below normal. Thus far, 1993 ranks as the 6th wettest and 11 coolest year on record. The months of March, April and May represent the state's 12th wettest and 10th coolest spring. Spring precipitation total was 14.43 inches (3.67 inches above normal). The average temperature was 57.3 degrees (2.7 degrees below normal).

Thunderstorms associated with a cold front and an associated low pressure center developed on the afternoon of the 1st, producing tornadoes in Woodward and Harper Counties, wind damage in Lawton and large hail in several areas of western Oklahoma. Large hail was reported later that same evening in the northeast near Claremore. Over 5 inches of rain fell on Drumright overnight with resulting flash flooding causing extensive damage to the downtown area. Heavy thunderstorms continued in eastern Oklahoma through the 2nd.

A slow-moving trough of low pressure in the upper atmosphere and a related surface frontal system moved through the state from the 5th through the 10th, generating widespread very strong thunderstorms that produced several tornadoes and inundated much of the state. Two large tornadoes were reported in rural Texas County on the 5th, destroying a farm house and killing some cattle. Minor flooding was reported overnight in Okmulgee County. A brief tornado was reported in the vicinity of Lone Grove on the 6th. Ardmore reported 5.2 inches of rain and a state highway was closed north of Healdton after 6 to 7 inches of water covered the roadway. Large hail was reported in Carter, Marshall and Bryan Counties. Madill reported 5.03 inches of precipitation.

Heavy rains on the 8th led to local flooding in several small watersheds and overburdened the already strained stream systems of central Oklahoma. Several creeks in Oklahoma City flooded in response to 7 inches of rain in the southern portions of the city, forcing evacuation of nearly 1000 homes. Flood waters forced evacuation of about 300 residents of Guthrie and Kingfisher. Cottonwood Creek in Guthrie reached a record flood stage. The Cimarron river overflowed its banks in Kingfisher, Logan and Payne Counties. Other tributary streams such as Black Bear Creek near Pawnee overflowed in response to the high level of the Cimarron.

Daily precipitation amounts reported the morning of the 9th included 6.97 inches at Piedmont, 6.56 inches at Lookeba and 6.55 inches at Guthrie. Ardmore received 6.48 inches between 5PM on the 8th and 5PM on the 9th. The Bryan County communities of Durant (7.5 inches) and Bokchito (7 inches) reported heavy precipitation for the 24-hour period ending the morning of the 10th. Bird Creek flooded portions of Skiatook and Sperry as a result of heavy rains in Osage County, including over 6 inches at Hominy and Barnsdall.

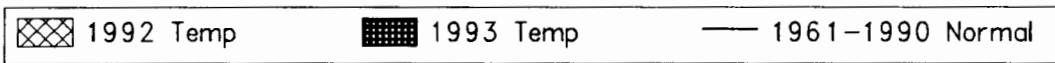
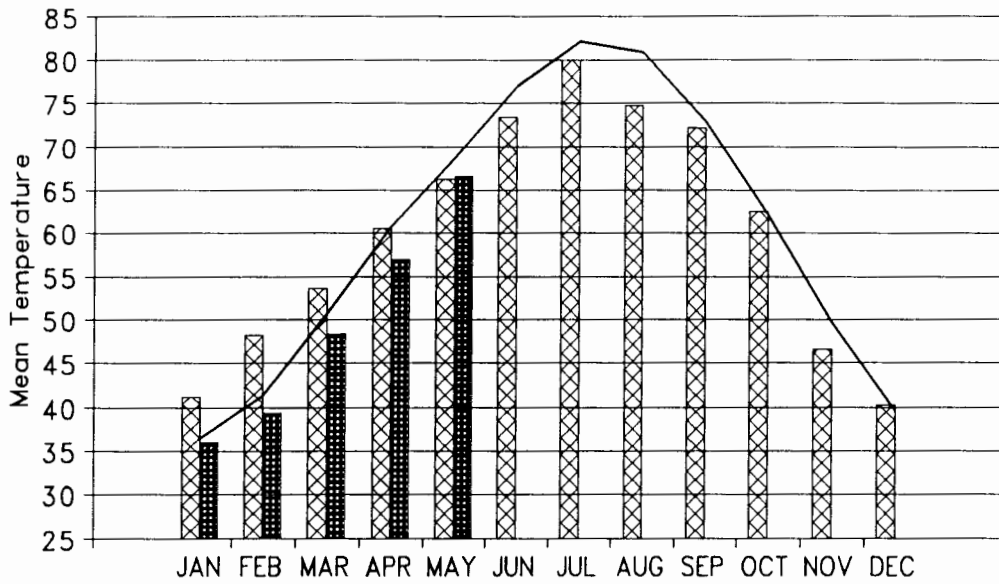
Flooding was reported along the Cimarron, Deep Fork, Neosho, Illinois, Arkansas, Poteau, Caney, North Canadian, Chikaskia, Salt Fork of the Arkansas, North Fork of the Red and Washita Rivers. Local flooding was reported in Bryan County. More than 2700 single family dwellings, mobile homes and apartments were damaged in the weekend flooding. The Federal Emergency Management Agency declared 13 Oklahoma counties to be flood disaster areas. There were five weather-related deaths, all drownings, over the weekend.

The weather for the remainder of the month was more typical of May and much less dramatic. Thunderstorms on the 17th caused considerable wind damage, including hangar doors blown open by 94-mile-per-hour winds at Altus and several roofs blown off of buildings in Nowata. Newkirk, Canton Dam and Leedey all reported over two inches of rain.

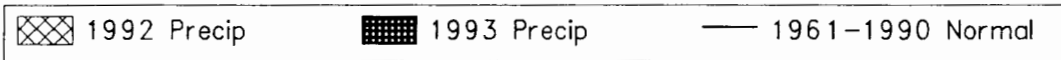
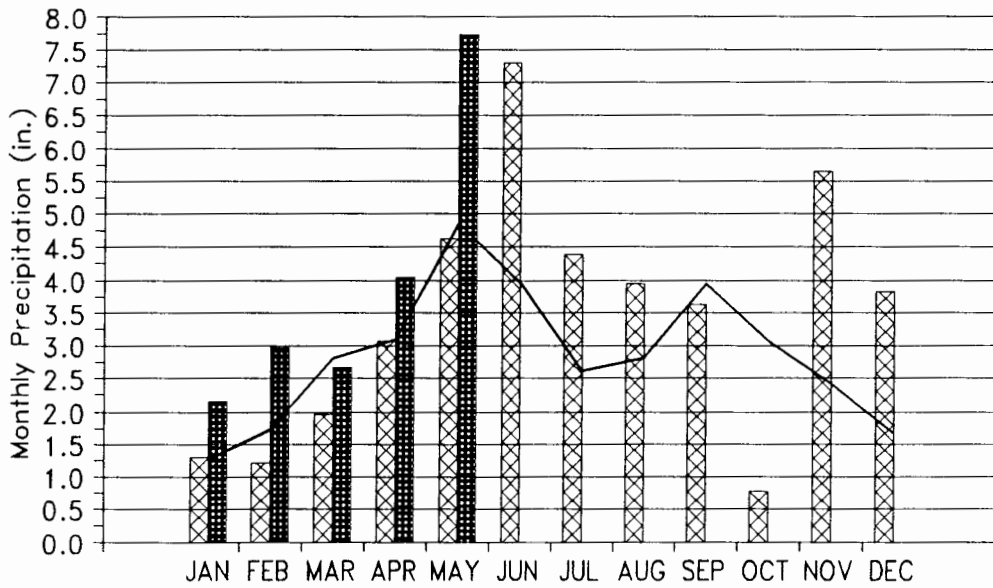
Locally heavy rains and local flooding were reported on the 23rd in Cleveland, McClain and Jefferson Counties. Waurika, Madill, Healdton, Atoka Dam, Lehigh, Norman and Blanchard all reported more than 2 inches of rain. Thunderstorms pounded the state again Memorial Day weekend, although severe weather was minimal. Hardy, Ralston and Upper Spavinaw each reported daily rainfall amounts in excess of two inches. Large hail was reported in Roger Mills County on the 29th, a tornado was spotted east of Jay on the 30th and one and one-half inch hail was reported near Boise City on the 31st.

Howard L. Johnson

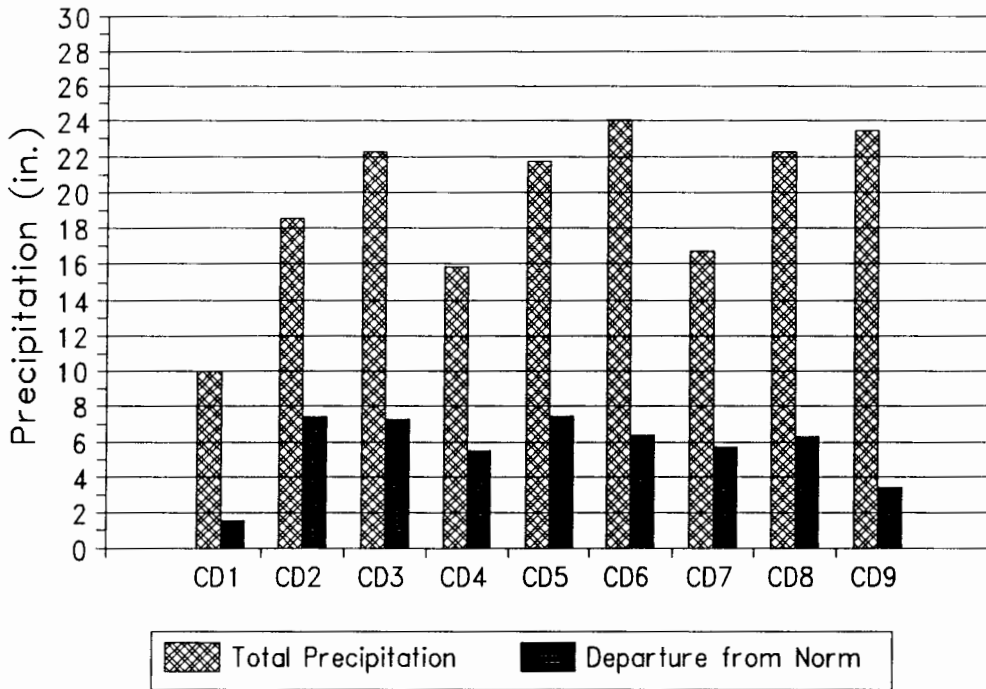
1992 and 1993 STATEWIDE TEMPERATURES Monthly Averages



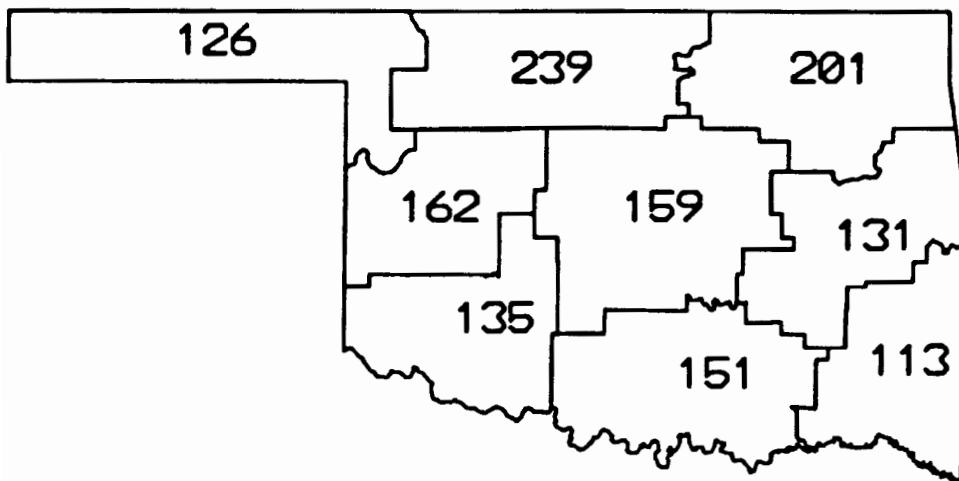
1992 and 1993 STATEWIDE PRECIPITATION Monthly Totals



CD Averaged Precipitation 1993 January through May Totals



CD PERCENT OF NORMAL PRECIPITATION



MAY 1993

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

CD	MAX			MIN			24-HOUR			MONTHLY	
	TEMP	DATE	LOCATION	TEMP	DATE	LOCATION	PRECIP	DATE	LOCATION	PRECIP	LOCATION
1	94	27	BUFFALO	33	2	KENTON	2.10	8	ARNETT	6.09	GAGE FAA APT
2	91	30	ALVA	39	3	FT SUPPLY	4.85	9	MORRISON	14.81	GREAT SALT PLAIN
3	90	2	UPPER SPAVIN	42	14	CLAREMORE	5.65	8	CLEVELAND	14.13	WYNONA
	90	5	UPPER SPAVIN	42	14	JAY TOWER					
				42	15	PRYOR					
				42	14	UPPER SPAVIN					
4	91	30	REYDON	38	3	ERICK	4.93	9	WEATHERFORD	11.51	GEARY
	91	31	WEATHERFORD								
5	91	30	GUTHRIE	43	14	BRISTOW	6.97	9	PIEDMONT	11.92	GUTHRIE
	91	31	GUTHRIE	43	14	PURCELL					
6	89	15	MCALESTER	40	14	STILWELL	5.33	9	MUSKOGEE	8.91	TAHLEQUAH
	89	30	MCCURTAIN								
7	92	31	ALTUS DAM	41	3	HOLLIS	6.56	9	LOOKEBA	11.93	LOOKEBA
	92	30	CHATTANOOGA	41	3	MANGUM					
	92	30	HOLLIS								
8	90	17	DURANT	42	14	CHICKASAW	7.50	10	DURANT	13.91	ARDMORE
	90	17	WAURIKA DAM								
9	89	17	IDABEL	42	14	WILBURTON	6.20	10	BOSWELL	10.81	FANSHAW

TABLE OF 1992/1993 COMPARISONS

Station	May Temperature (°F)		May Precipitation (in.)	
	1992	1993	1992	1993
Arnett	63.1	63.1	6.50	6.05
Enid	65.7	66.7	3.63	9.20
Mutual	66.0	63.5	3.36	8.58
Tulsa	67.5	66.6	4.24	7.00
Elk City	65.6	67.1	2.58	5.10
Oklahoma City	66.5	66.0	4.88	10.90
McAlester	66.9	69.4	5.05	4.99
Altus Irr Sta	68.1	68.8	5.62	7.87
Durant	67.8	67.5	7.50	11.33
Ada	66.2	66.6	7.80	3.68
Antlers	67.7	68.8	4.27	0.82

EXTREMES

Variable	Station	Division	Observation	Date
Minimum temperature (°F)	Kenton	1	33	02
Maximum temperature (°F)	Buffalo	1	94	27
Maximum 24-hour precipitation	Durant	8	7.50"	10

MAY 1993 SUMMARY FOR NORTHWEST DIVISION (CD1)

NAME	ID	CD	DEV					MIN	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	DAY											
ARNETT	332	1	63.1	31	-2.6	87.	31	40.	3	116.5	30.5	58.5	-49.5	6.050	31	1.92	2.10	8
BEAVER	593	1	64.5	31	-.4	90.	29	37.	4	89.0	-9.0	74.0	-21.0	3.360	31	.32	1.92	1
BOISE CITY 2 E	908	1	62.6	31	-.7	89.	28	35.	1	111.5	-8.5	38.0	-30.0	3.421	31	.84	.70	9
BUFFALO	1243	1	67.2	31	-1.0	94.	27	39.	3	66.0	9.0	134.5	-21.5	4.050	31	-.31	1.25	1
FARGO	3070	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.540	31	1.85	1.53	2
GAGE FAA APT	3407	1	65.0	31	-2.2	91.	30	37.	3	86.5	21.5	85.5	-47.5	6.088	31	2.74	2.07	1
GATE	3489	1	65.4	31	-.9	93.	28	40.	3	92.0	5.0	105.5	-21.5	2.963	31	-.07	1.41	1
GOODWELL RES ST	3628	1	62.5	31	-.7	89.	28	35.	4	123.5	-2.5	44.5	-26.5	2.391	31	-.72	.40	1
GUYMON	3835	1	65.6	25	*****	92.	27	37.	3	65.5	*****	79.5	*****	2.820	26	*****	.89	1
HOOVER	4298	1	63.8	31	-1.3	91.	28	40.	3	110.0	16.0	72.0	-25.0	2.512	31	-.45	.70	2
KENTON	4766	1	63.2	29	*****	88.	27	33.	2	86.0	*****	35.0	*****	1.580	30	*****	.96	24
LAVERNE	5045	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.202	31	-.09	1.42	1
OPTIMA LAKE	6740	1	64.5	31	*****	92.	28	37.	3	111.5	*****	95.0	*****	2.804	31	*****	1.47	1
REGNIER	7534	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.271	31	1.02	1.10	24
TURPIN 4 SSE	9017	1	64.1	31	*****	91.	28	40.	3	105.0	*****	77.0	*****	3.391	31	*****	1.26	1

MAY 1993 SUMMARY FOR NORTH CENTRAL DIVISION (CD2)

NAME	ID	CD	DEV					MIN	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	DAY											
ALVA	193	2	66.5	31	*****	91.	30	46.	4	60.5	*****	105.5	*****	11.160	31	*****	2.45	1
VANCE AFB	302	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	10.384	31	*****	3.26	9
BILLINGS	755	2	64.1	31	-3.5	85.	31	44.	14	101.5	37.5	73.0	-72.0	11.484	31	6.97	3.20	8
BLACKWELL 2E	818	2	64.8	31	-2.7	85.	30	44.	20	76.5	20.5	71.5	-62.5	11.060	31	6.32	2.45	8
BRAMAN	1075	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.354	31	*****	1.51	10
CEDARDALE	1620	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.865	30	*****	2.00	9
CHEROKEE	1724	2	66.5	28	*****	90.	30	47.	10	58.5	*****	100.5	*****	14.420	31	10.53	2.97	1
ENID	2912	2	66.7	31	-2.4	87.	31	47.	20	58.0	28.0	110.0	-47.0	9.200	31	4.40	2.70	9
FT SUPPLY DAM	3304	2	64.4	31	-1.5	89.	31	39.	3	101.5	26.5	82.0	-21.0	4.763	31	1.07	1.64	2
FREEDOM	3358	2	63.8	31	-4.9	89.	31	40.	14	115.0	75.0	76.5	-78.5	6.832	31	3.35	1.92	1
GREAT SALT PLNS	3740	2	64.7	31	-3.1	90.	31	45.	1	87.5	30.5	78.0	-65.0	14.812	31	10.96	3.58	1
HARDY	3909	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	10.732	31	*****	2.34	29
HELENA 1 SSE	4019	2	63.9	31	-2.6	89.	31	46.	20	95.5	17.5	60.0	-65.0	11.123	31	7.10	3.00	9
JEFFERSON	4573	2	68.1	27	*****	89.	30	46.	20	25.5	*****	109.0	*****	8.372	31	3.85	2.55	3
LAMONT	5013	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.811	31	*****	1.72	9
MEDFORD	5768	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	10.632	31	*****	2.07	8
MORRISON	6065	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.940	31	*****	4.85	9
MUTUAL	6139	2	63.5	31	-2.5	88.	31	43.	3	107.5	26.5	60.5	-51.5	8.580	31	4.56	2.07	2
NEWKIRK	6278	2	65.2	31	-2.9	85.	30	43.	19	78.0	28.0	85.0	-61.0	13.271	31	8.38	2.97	8
ORIENTA	6751	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	10.680	31	6.90	2.80	9
PERRY	7012	2	67.8	31	-1.4	89.	30	49.	19	41.5	4.5	127.0	-40.0	8.341	31	3.07	3.92	9
PONCA CITY FAA	7201	2	66.6	31	-1.2	88.	30	46.	20	60.0	-8.0	109.0	-46.0	12.384	31	7.82	3.47	8
RED ROCK 1 NNE	7505	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.300	31	3.69	3.38	9
WAYNOKA	9404	2	65.6	31	-3.3	89.	30	42.	3	72.0	34.0	89.5	-69.5	12.270	31	8.17	2.71	1
WOODWARD	9760	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.031	31	-.93	1.31	8

MAY 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	DEG DAY	FROM NORM	DEG DAY	FROM NORM	DEG DAY	FROM NORM	DEG DAY						
BARNSDALL	535	3	65.7	31	-2.9	84.	15	43.	14	65.0	32.0	86.0	-59.0	12.718	31	7.92	4.94	9		
BARTLESVILLE 2W	548	3	66.5	31	-2.2	86.	15	45.	20	52.0	17.0	98.0	-51.0	9.512	31	5.11	3.55	9		
BIXBY	782	3	65.3	31	-2.3	87.	31	44.	15	72.0	22.0	81.5	-49.5	7.540	31	2.54	2.60	9		
BURBANK	1256	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.261	31	4.53	2.59	8		
CHELSEA 4 S	1717	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.830	31	*****	4.14	9		
CLAREMORE	1828	3	65.1	31	-1.9	84.	16	42.	14	79.0	12.0	82.0	-47.0	11.450	31	6.81	4.73	9		
CLEVELAND 5 WSW	1902	3	68.0	12	*****	85.	30	45.	22	11.0	*****	47.0	*****	13.780	31	*****	5.65	8		
FORAKER	3250	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	12.111	31	7.01	2.62	30		
HOLLOW	4258	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	12.312	31	7.29	3.12	9		
HOMINY	4289	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	11.942	31	7.39	4.84	9		
HULAH DAM	4393	3	65.6	29	*****	85.	16	46.	19	66.5	*****	85.0	*****	10.310	31	5.77	4.23	9		
JAY TOWER	4567	3	65.4	31	*****	86.	16	42.	14	75.0	*****	86.0	*****	8.640	31	*****	3.00	9		
KANSAS 1 ESE	4672	3	64.8	31	-2.4	82.	15	43.	14	68.5	14.5	62.0	-60.0	7.337	31	1.95	3.05	9		
KEYSTONE DAM	4812	3	65.1	30	-2.2	83.	31	43.	14	79.0	23.0	82.0	-45.0	6.814	31	1.82	2.60	9		
LENAPAH	5118	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	10.400	31	*****	3.75	9		
MANNFORD 6 NW	5522	3	65.3	29	*****	85.	30	45.	14	63.0	*****	73.0	*****	8.590	31	3.77	3.88	8		
MARAMEC	5540	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	13.650	31	8.86	5.48	9		
MIAMI	5855	3	65.4	31	-1.3	84.	16	45.	15	52.0	-22.0	65.0	-61.0	9.820	31	4.81	3.36	9		
NOWATA	6485	3	65.4	30	-2.7	84.	16	45.	15	58.5	9.5	71.5	-73.5	7.702	31	3.22	1.69	10		
ONETA 1 WNW	6713	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.320	31	*****	3.16	9		
PAWHUSKA	6935	3	66.0	31	-2.0	84.	31	44.	19	60.5	14.5	92.0	-47.0	12.561	31	7.72	4.40	9		
PAWNEE	6940	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.980	31	5.08	4.20	9		
PRYOR 6 N	7309	3	65.2	26	*****	88.	5	42.	15	67.0	*****	71.0	*****	7.482	31	2.81	3.60	9		
RALSTON	7390	3	66.3	31	-2.5	86.	30	45.	14	55.5	15.5	94.5	-63.5	10.012	31	5.25	3.22	9		
RAMONA 4 N	7394	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.582	31	*****	4.40	9		
SKIATOOK	8258	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.310	31	2.62	3.08	9		
SPAVINAW	8380	3	67.2	31	-1.5	85.	16	45.	14	48.0	7.0	116.0	-40.0	8.292	31	3.52	3.13	9		
TULSA WSO APT	8992	3	66.6	31	-2.7	84.	30	46.	14	53.5	12.5	102.5	-71.5	7.006	31	1.41	2.96	9		
UPPER SPAVINAW	9101	3	65.3	31	*****	90.	5	42.	14	84.0	*****	94.0	*****	8.733	31	*****	2.75	9		
VINITA 2 N	9203	3	65.4	29	*****	83.	15	42.	14	46.5	*****	58.0	*****	9.111	31	4.00	2.95	9		
WAGONER	9247	3	67.1	31	-1.9	83.	31	45.	14	55.0	21.0	120.5	-37.5	7.980	31	3.03	3.81	9		
WANN	9298	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	12.001	31	*****	3.53	9		
WYONONA	9792	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	14.133	31	*****	4.85	9		

MAY 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	DEG DAY	FROM NORM	DEG DAY	FROM NORM	DEG DAY	FROM NORM	DEG DAY						
CANTON DAM	1445	4	64.2	31	-3.2	86.	31	46.	10	92.5	38.5	68.0	-60.0	9.971	31	5.63	2.80	9		
CHEYENNE	1738	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.510	31	-.52	1.69	11		
CLINTON	1909	4	67.0	31	-2.5	89.	30	41.	3	47.0	17.0	110.0	-60.0	6.942	31	2.01	3.15	9		
COLONY	2039	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.513	31	*****	4.50	9		
CORDELL	2125	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.032	31	2.34	3.58	9		
ELK CITY 1 E	2849	4	67.1	30	-1.5	89.	31	43.	3	51.0	24.0	114.5	-24.5	5.103	31	.53	1.16	8		
ERICK 4 E	2944	4	67.1	31	-1.2	89.	30	38.	3	47.0	7.0	112.0	-30.0	5.370	31	1.28	1.42	8		
GEARY	3497	4	69.1	31	.8	90.	30	53.	14	27.5	-10.5	154.5	14.5	11.510	31	7.01	4.67	9		
HAMMON 1 NNE	3871	4	63.5	30	-3.4	86.	18	41.	3	103.0	41.0	57.0	-64.0	5.571	30	*****	1.26	2		
LEEDEY	5090	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.250	31	2.83	2.06	18		
MACKIE 4 NNW	5463	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.800	31	*****	1.98	18		
MORAVIA 2 NNE	6035	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.321	31	1.65	3.01	9		
OKEENE	6629	4	66.4	31	-2.9	88.	30	46.	14	52.0	22.0	95.5	-67.5	8.540	31	4.10	2.25	9		
RETROP	7565	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.790	31	*****	4.35	9		
REYDON	7579	4	70.0	31	3.0	91.	30	46.	3	23.5	-37.5	177.0	54.0	4.910	31	.98	1.41	2		
SAYRE	7952	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.710	31	2.38	1.75	9		
SWEETWATER 2 E	8652	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.300	31	*****	.85	22		
TALOGA	8708	4	65.3	31	-2.3	90.	30	43.	10	72.5	21.5	82.0	-50.0	8.473	31	3.73	3.65	9		
THOMAS	8815	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.960	31	*****	3.08	9		
VICI	9172	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.930	31	2.52	1.76	2		
WATONGA	9364	4	65.7	31	-2.7	87.	30	46.	14	64.0	28.0	86.5	-55.5	8.870	31	4.25	3.02	9		
WEATHERFORD	9422	4	66.0	31	-2.3	91.	31	46.	3	62.5	25.5	94.0	-45.0	9.031	31	4.42	4.93	9		

MAY 1993 SUMMARY FOR SOUTHWEST DIVISION (CD7)

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 TEMP	DAY	DEG DAY	FROM NORM	DEG DAY	FROM NORM	DEG DAY	FROM NORM						
ALTUS IRR STA	179	7	68.8	31	-2.8	91.	30	42.	3	34.5	22.5	153.0	-63.0	7.870	31	3.64	2.03	9		
ALTUS DAM	184	7	67.9	31	-2.2	92.	31	42.	3	56.0	35.0	145.0	-34.0	6.990	31	2.58	3.48	9		
ANADARKO	224	7	66.7	29	*****	88.	31	46.	14	39.5	*****	88.0	*****	5.362	30	*****	2.30	9		
APACHE	260	7	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	5.130	31	.12	2.00	9		
ALTUS AFB	447	7	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	7.845	31	*****	2.67	9		
CARNEGIE 2 ENE	1504	7	68.0	30	-1.8	91.	30	46.	19	27.5	10.5	118.5	-47.5	6.611	30	*****	2.63	9		
CHATTANOOGA	1706	7	69.5	29	*****	92.	30	45.	3	22.5	*****	152.5	*****	4.042	29	*****	2.12	9		
DUNCAN 11 W	2668	7	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	5.164	31	*****	2.17	8		
FREDERICK	3353	7	67.1	31	-3.2	89.	31	45.	3	53.5	34.5	118.0	-65.0	4.780	31	.48	2.10	2		
GRANDFIELD 4	NW3709	7	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	3.180	31	-1.23	2.20	9		
HEADRICK	3998	7	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	5.702	31	*****	2.02	9		
HOBART FAA APT	4204	7	66.9	31	-3.0	89.	30	42.	3	51.5	28.5	109.0	-66.0	8.913	31	4.41	4.08	9		
HOLLIS	4249	7	69.0	31	-2.2	92.	30	41.	3	32.0	15.0	156.5	-52.5	4.482	31	.96	1.87	9		
LAWTON	5063	7	68.1	31	-1.9	90.	31	49.	14	39.0	24.0	136.5	-33.5	4.321	31	-.60	1.57	9		
FORT SILL	5068	7	68.0	31	*****	89.	30	50.	14	33.5	*****	125.5	*****	5.905	31	*****	1.81	23		
LOOKEBA 2 ENE	5329	7	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	11.930	31	7.12	6.56	9		
MANGUM RES STA	5509	7	67.1	31	-4.3	90.	30	41.	3	39.0	25.0	104.5	-108.5	5.840	31	1.59	2.71	9		
RANDLETT 9 E	7403	7	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	6.771	31	*****	3.78	9		
ROOSEVELT	7727	7	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	6.800	31	1.95	2.68	9		
SEDAN	8016	7	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	7.230	31	*****	3.62	9		
SNYDER	8299	7	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	4.063	31	-.62	1.93	9		
VINSON 3 WNW	9212	7	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	5.260	31	1.29	1.40	9		
WALTERS	9278	7	68.8	31	-2.7	90.	30	48.	3	23.0	14.0	139.5	-71.5	2.920	31	-2.20	.86	3		
WICHITA MT WLR	9629	7	65.3	30	-2.9	89.	31	43.	14	75.5	43.5	85.5	-45.5	5.552	31	.57	1.72	9		
WILLOW	9668	7	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	8.941	31	*****	4.14	9		

MAY 1993 SUMMARY FOR SOUTH CENTRAL DIVISION (CD8)

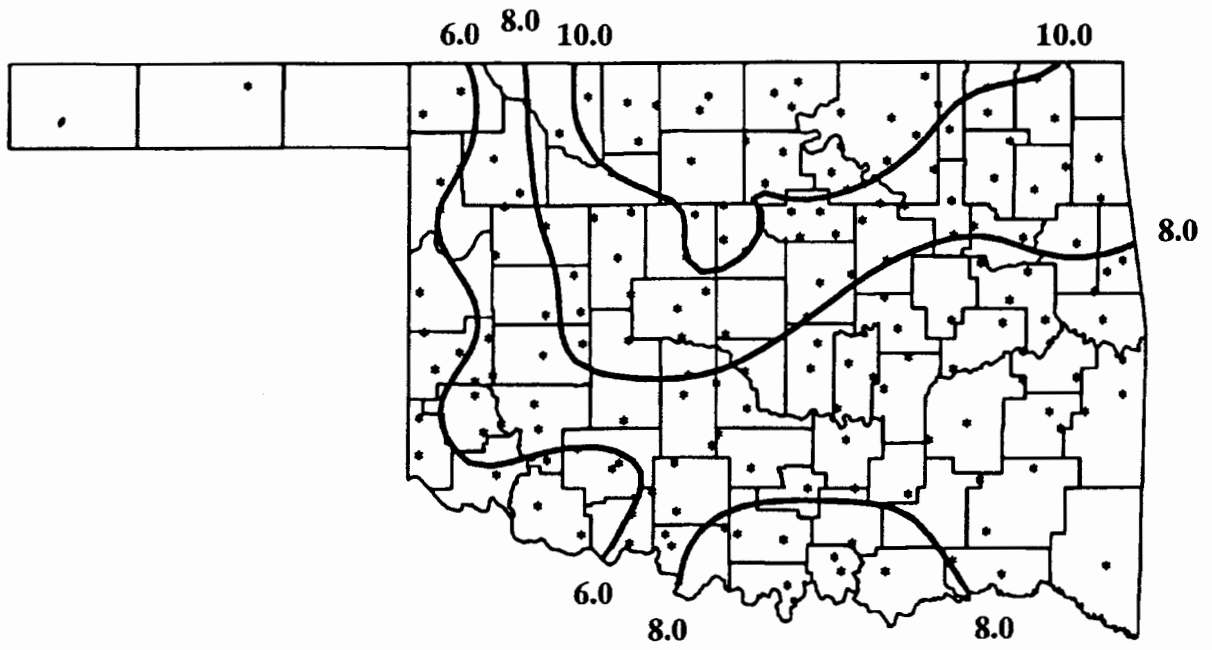
NAME	ID	CD	DEV					HEAT		DEV		COOL		DEV		TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN TEMP	DAY	DEG DAY	FROM NORM	DEG DAY	FROM NORM	DEG DAY	FROM NORM						
ADA	17	8	66.6	31	-3.0	85.	17	46.	14	38.5	18.5	89.5	-73.5	3.683	31	-1.94	1.78	9		
ALLEN	147	8	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	5.110	31	*****	1.76	10		
ARDMORE	292	8	68.6	30	-3.4	87.	16	49.	10	23.0	18.0	129.5	-92.5	13.912	31	8.93	6.48	9		
ATOKA DAM	394	8	67.4	21	*****	89.	17	49.	14	27.0	*****	77.5	*****	8.153	23	*****	3.98	10		
BOKCHITO	917	8	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	8.330	31	*****	7.00	10		
CANEY	1437	8	69.9	31	*****	85.	30	55.	3	15.5	*****	167.0	*****	8.880	31	*****	4.20	9		
CENTRAHOMA	1648	8	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	7.250	31	*****	3.00	9		
CHICKASAW NRA	1745	8	66.3	31	-2.7	85.	18	42.	14	61.5	43.5	100.5	-41.5	5.551	31	-.20	2.92	9		
COLEMAN	2011	8	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	7.390	31	*****	4.25	9		
COMANCHE	2054	8	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	6.710	31	1.70	3.02	9		
DAISY 4 ENE	2354	8	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	8.762	31	1.85	3.42	10		
DUNCAN	2660	8	66.2	22	*****	85.	31	47.	10	32.5	*****	59.5	*****	5.463	30	*****	2.26	9		
DURANT USDA	2678	8	67.5	31	-2.2	90.	17	48.	4	38.5	18.5	116.5	-49.5	11.330	31	5.75	7.50	10		
ELMORE CITY	2872	8	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	4.427	31	*****	1.55	8		
FARRIS 3 WNW	3083	8	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	8.500	31	3.13	4.73	10		
GRADY	3688	8	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	4.610	31	*****	1.74	9		
HEALDTON	4001	8	69.4	23	*****	89.	16	45.	13	10.5	*****	112.5	*****	11.872	31	6.78	4.51	9		
KETCHUM RANCH	4780	8	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	5.610	31	*****	2.65	9		
KINGSTON	4865	8	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	9.230	31	3.94	3.40	10		
LEHIGH	5108	8	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	8.954	31	*****	3.15	10		
LINDSAY 2 W	5216	8	67.7	31	-2.3	87.	30	46.	4	29.5	15.5	114.5	-54.5	6.913	31	1.47	3.87	9		
LOCO 6 SE	5247	8	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	7.940	31	*****	3.60	9		
MADILL	5468	8	68.3	31	-2.6	88.	15	46.	14	23.0	14.0	126.0	-65.0	9.021	31	3.67	5.03	8		
MARIETTA	5563	8	69.3	31	-1.4	89.	16	51.	14	17.5	6.5	149.5	-38.5	8.532	31	3.60	5.50	9		
MARLOW 1 WSW	5581	8	66.4	31	-3.1	87.	31	43.	10	47.0	31.0	90.5	-65.5	7.300	31	2.15	3.58	9		
MC GEE CREEK DAM	5713	8	68.1	31	*****	89.	16	48.	14	36.5	*****	132.0	*****	8.334	31	*****	4.69	10		
PAULS VALLEY	6926	8	68.3	31	-2.3	87.	30	44.	14	26.0	9.0	127.5	-63.5	5.191	31	-.55	2.10	10		
PONTOTOC	7214	8	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	7.260	31	1.55	3.90	8		
TISHOMINGO NWLR	8884	8	67.6	20	*****	89.	4	49.	10	20.0	*****	71.5	*****	10.481	31	5.44	5.70	9		
TUSSY	9032	8	*****	0	*****	*****	0	*****	0	*****	*****	*****	*****	5.550	31	*****	2.19	9		
WAURIKA	9395	8	69.1	31	-2.6	89.	16	48.	10	15.0	7.0	141.0	-75.0	9.031	31	4.63	4.48	9		
WAURIKA DAM	9399	8	68.2	31	*****	90.	17	48.	10	35.0	*****	133.0	*****	9.760	31	*****	4.58	9		

MAY 1993 SUMMARY FOR SOUTHEAST DIVISION (CD9)

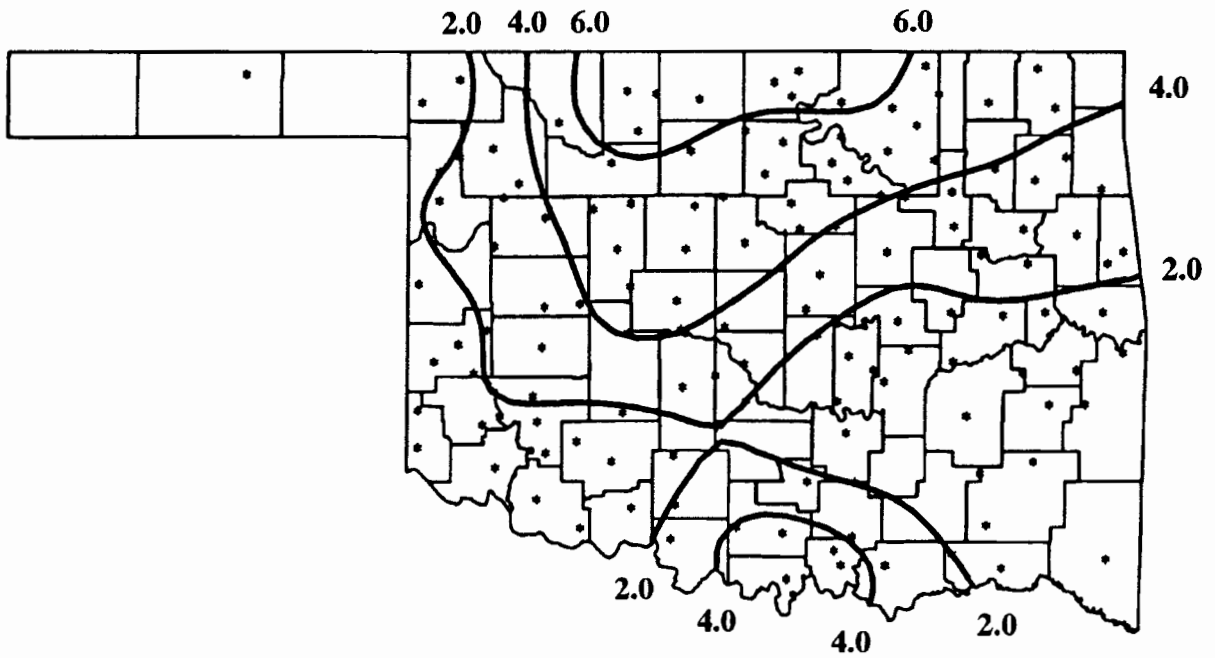
NAME	ID CD	DEV				HEAT			DEV			COOL			DEV			TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
		MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN TEMP	DEG DAY	FROM NORM	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	DEV FROM NORM	MAX 24-HR	DAY								
ANTLERS	256 9	68.8	31	-.9	86.	26	46.	14	30.0	14.0	146.5	-14.5	.820	31	-5.38	.45	18					
BATTIEST 1 SSW	567 9	66.3	25	*****	83.	30	45.	21	32.5	*****	66.0	*****	7.412	31	*****	3.39	10					
BEAR MT TWR	584 9	66.5	22	*****	85.	17	50.	2	29.5	*****	62.0	*****	5.031	30	*****	2.52	10					
BENGAL	670 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.400	31	*****	3.15	10					
BOSWELL 4 NNW	980 9	68.2	31	-1.7	87.	15	47.	14	32.5	18.5	132.5	-33.5	10.017	31	4.35	6.20	10					
BROKEN BOW 1 N	1162 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.870	31	.55	3.36	10					
BROKEN BOW DAM	1168 9	66.9	31	-2.1	88.	18	50.	27	31.5	3.5	90.5	-61.5	5.680	27	*****	2.85	10					
CARNASAW TWR	1499 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.012	31	-.78	3.40	10					
CARTER TWR	1544 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.730	14	*****	1.14	24					
FANSHAWE	3065 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	10.810	31	4.18	4.02	3					
HEAVENER 1 SE	4008 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	10.612	31	4.11	3.68	10					
HEE MT TWR	4017 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.680	31	.97	2.92	10					
HUGO	4384 9	69.1	31	-1.9	87.	30	51.	16	17.5	7.5	146.0	-50.0	6.803	31	.82	4.36	10					
IDABEL	4451 9	68.5	31	-1.2	89.	17	50.	14	23.5	4.5	133.0	-31.0	8.042	31	2.14	3.59	10					
JADIE TOWER	4560 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.810	31	*****	2.03	24					
POTEAU W W	7254 9	67.6	31	*****	87.	15	43.	14	32.0	*****	113.0	*****	5.852	31	*****	3.53	9					
SMITHVILLE 1 W	8285 9	66.2	22	*****	83.	30	44.	21	33.5	*****	59.0	*****	7.606	31	.64	3.50	10					
SPIRO	8416 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.690	31	-.03	2.45	10					
TUSKAHOMA	9023 9	68.0	31	-1.7	85.	30	43.	14	37.0	21.0	131.0	-31.0	8.271	31	1.57	3.97	10					
VALLIANT 3 W	9118 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.310	31	.13	3.33	10					
WILBURTON 9 ENE9634	9	68.1	31	-.8	88.	30	42.	14	36.0	-2.0	131.0	-28.0	5.782	31	-.31	2.63	9					

MAY 1993 CLIMATE DIVISION SUMMARY

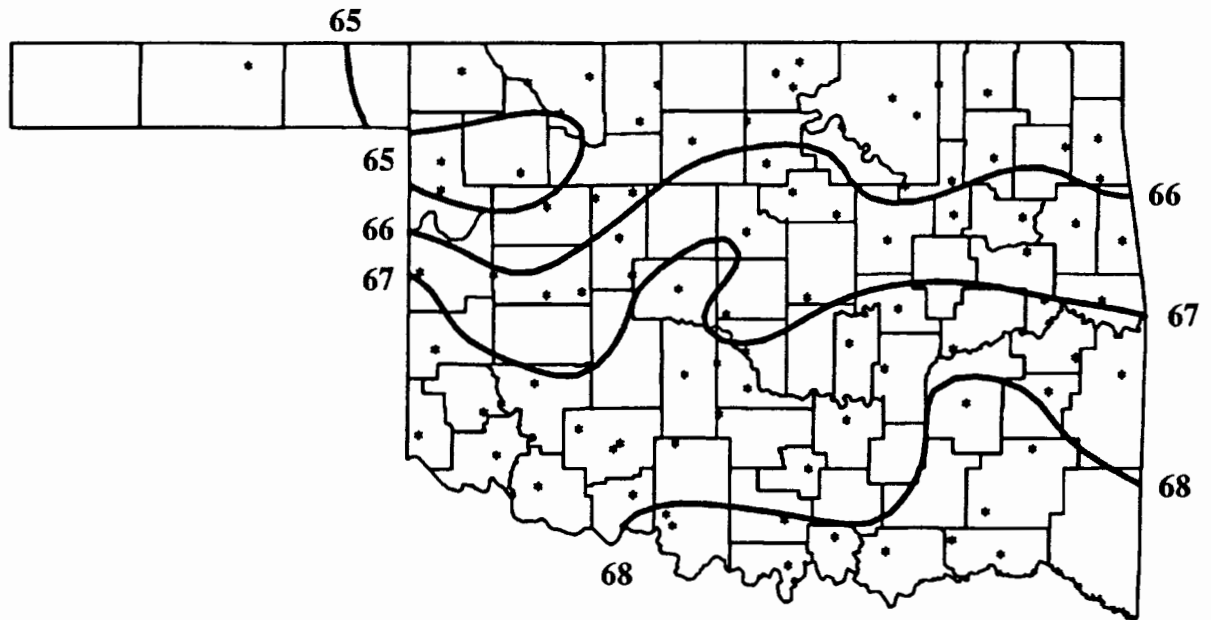
CLIMATE DIV	MEAN TEMP	NUM STA	DEV				HEAT			DEV			COOL			DEV		
			FROM NORM	MAX TEMP	MIN TEMP	DAY	DEGREE DAYS	FROM NORM	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM STA	DEV FROM NORM	MAX 24-HR	DAY		
1	64.3	10	-.9	94.0	27	33.0	2	101.2	5.9	78.4	-21.0	3.77	13	.58	2.10	8		
2	65.2	13	-2.8	91.0	30	39.0	3	81.2	28.0	86.7	-57.5	9.96	24	5.68	4.85	9		
3	65.8	15	-2.1	90.0	5	42.0	14	63.8	12.7	88.9	-51.5	9.79	33	4.94	5.65	8		
4	66.5	11	-1.8	91.0	31	38.0	3	58.4	17.6	104.6	-37.7	6.99	21	2.55	4.93	9		
5	67.0	14	-2.1	91.0	31	43.0	14	46.1	18.9	109.0	-47.5	8.32	35	3.08	6.97	9		
6	67.4	11	-1.5	89.0	30	40.0	14	47.0	13.8	123.0	-33.3	7.10	30	1.52	5.33	9		
7	67.7	11	-2.6	92.0	30	41.0	3	42.3	24.8	126.5	-57.0	6.16	22	1.60	6.56	9		
8	68.0	13	-2.3	90.0	17	42.0	14	31.3	16.8	124.4	-54.0	7.85	30	2.49	7.50	10		
9	68.2	8	-1.3	89.0	17	42.0	14	30.0	7.7	127.9	-32.1	7.10	18	.74	6.20	10		



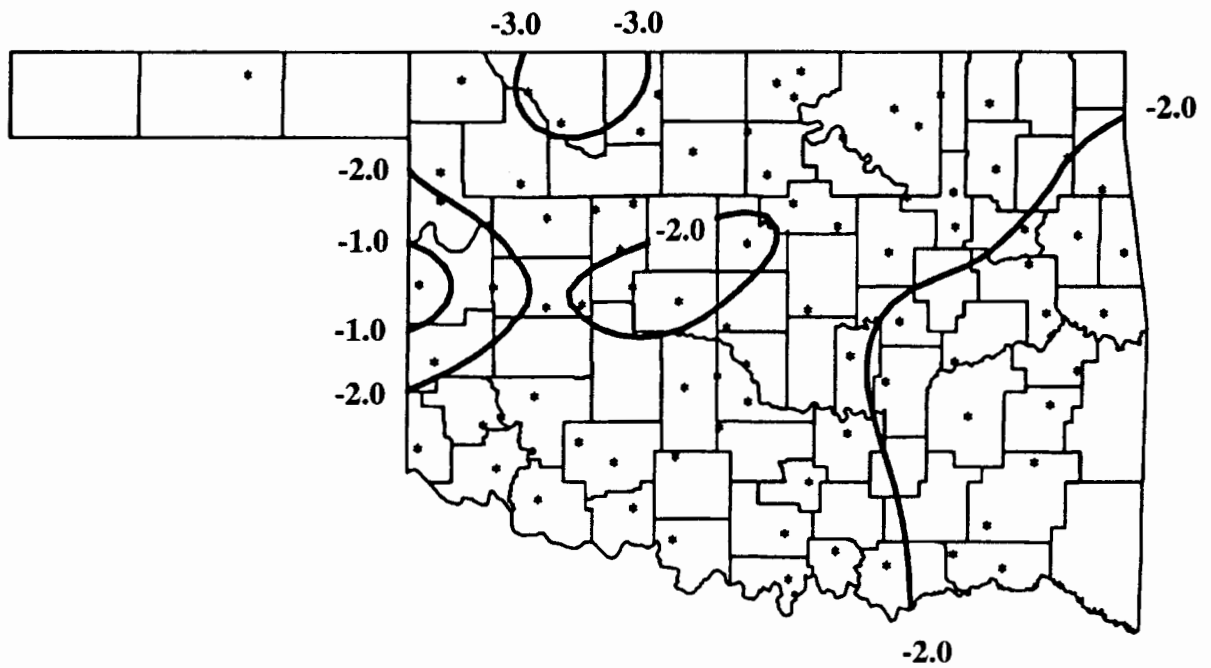
**MAY 1993 TOTAL PRECIPITATION
(Inches)**



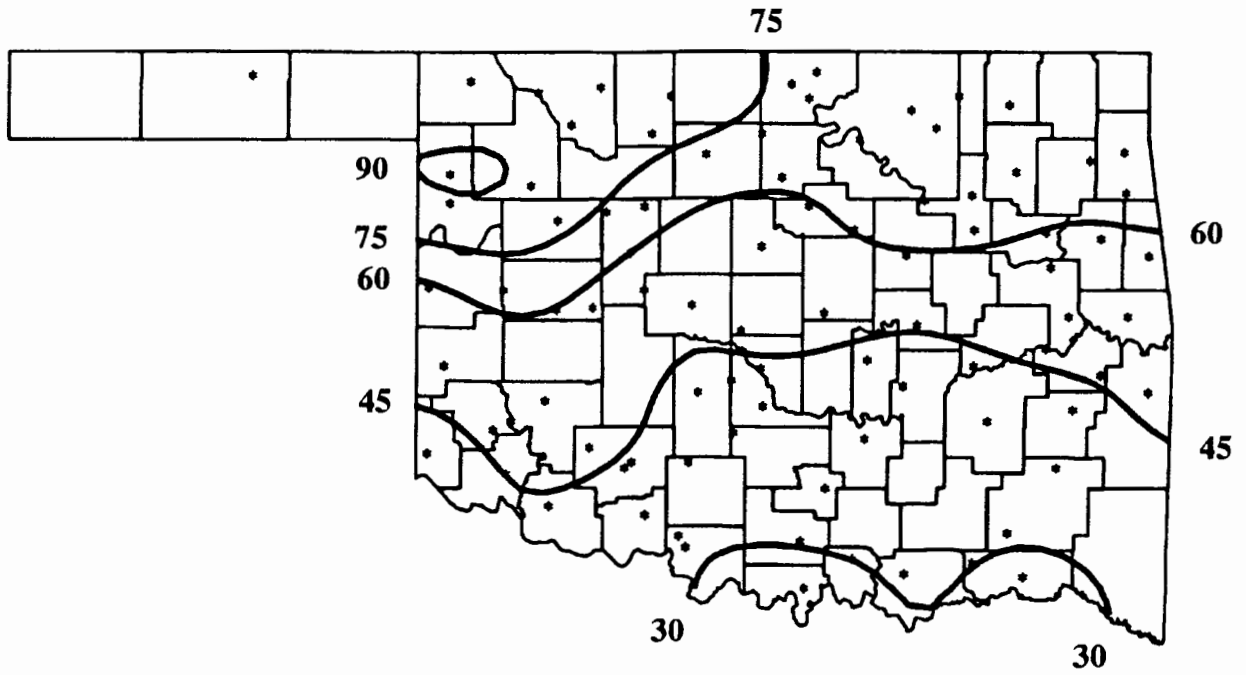
**MAY 1993 DEVIATION FROM NORMAL PRECIPITATION
(Inches)**



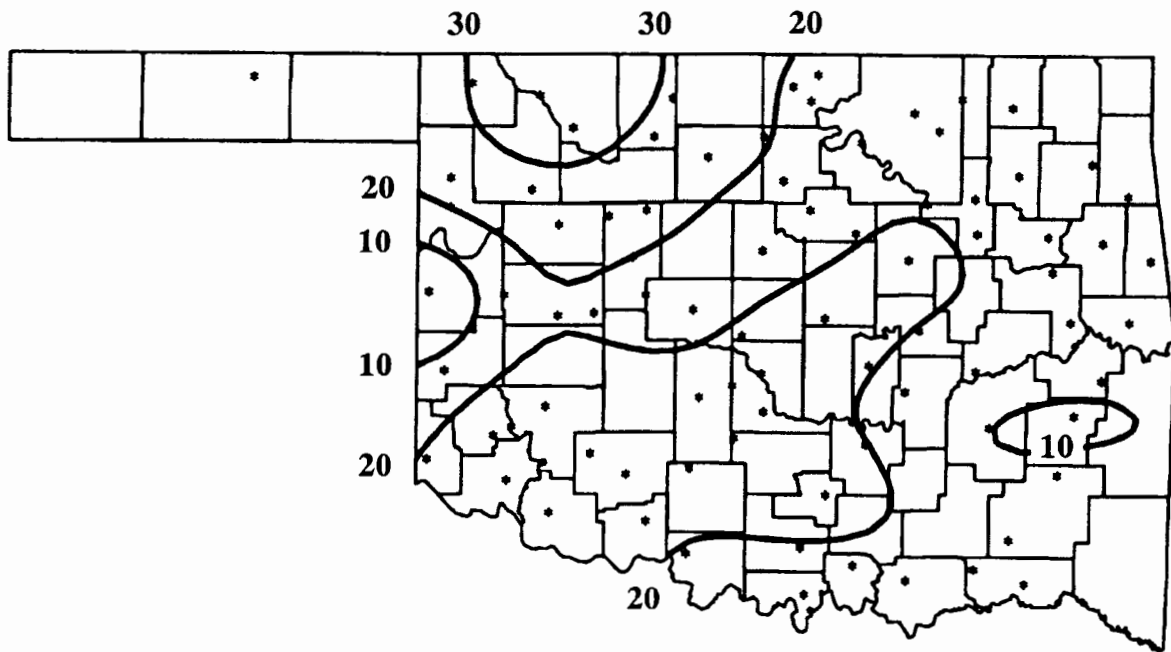
**MAY 1993 AVERAGE MONTHLY TEMPERATURES
(Degrees F)**



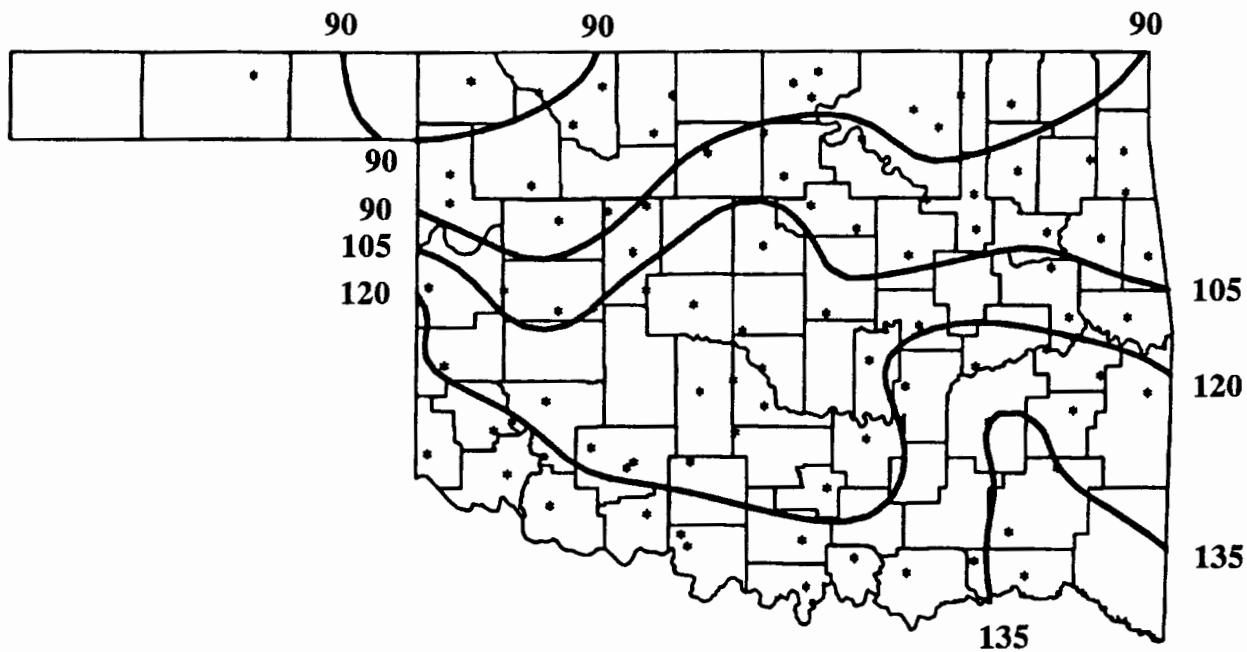
**MAY 1993 DEVIATION FROM NORMAL TEMPERATURES
(Degrees F)**



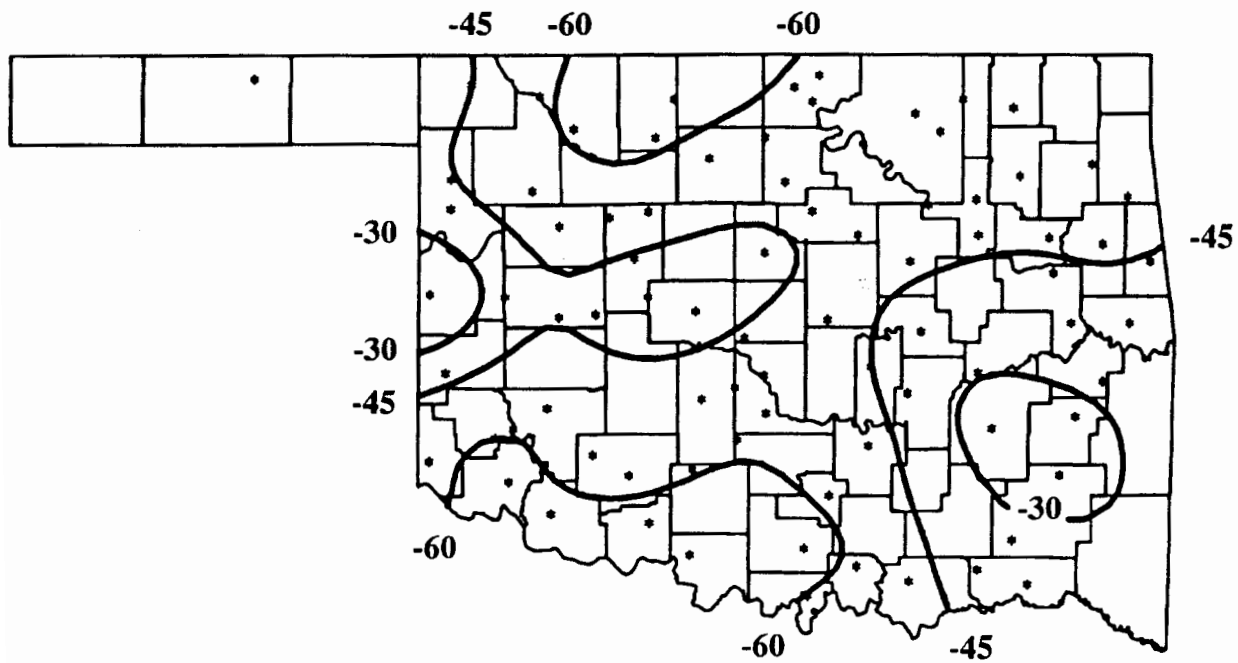
MAY 1993 HEATING DEGREE DAYS



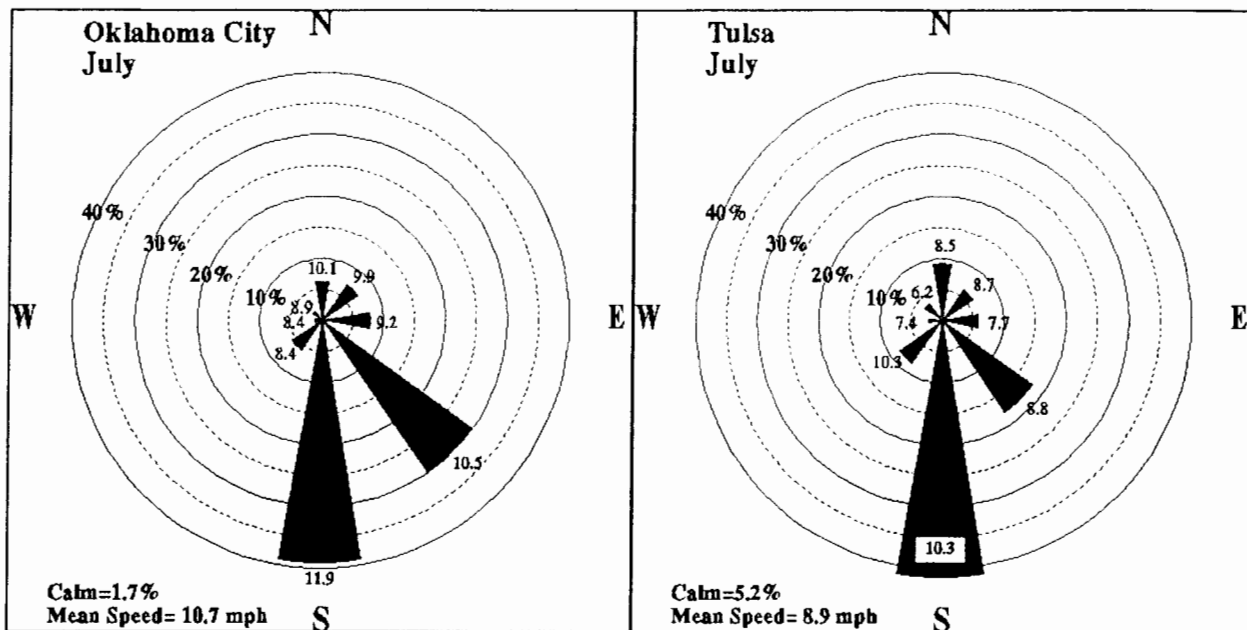
MAY 1993 DEVIATION FROM NORMAL HEATING DEGREE DAYS



MAY 1993 COOLING DEGREE DAYS



MAY 1993 DEVIATION FROM NORMAL COOLING DEGREE DAYS



July 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.

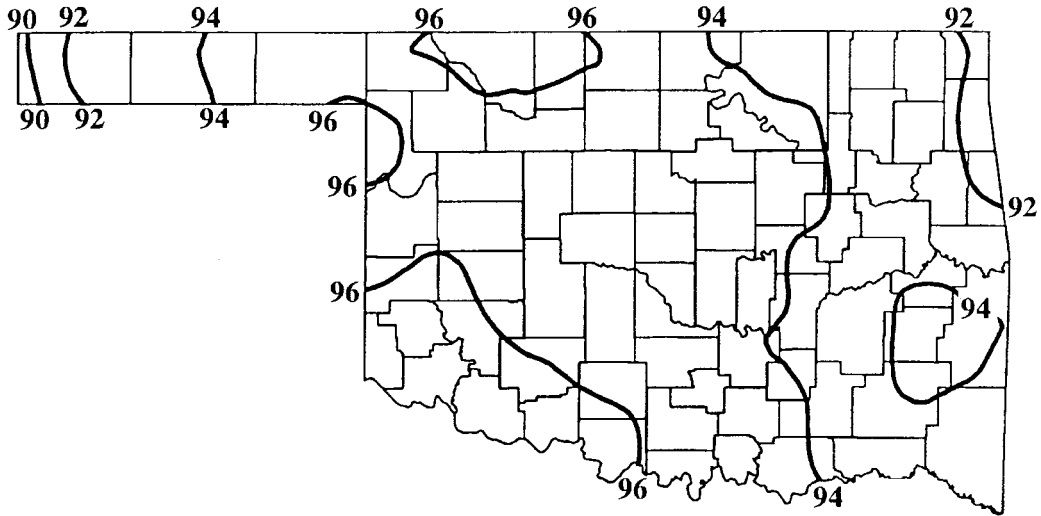
JULY 1993 SUNRISE AND SUNSET

OKLAHOMA CITY

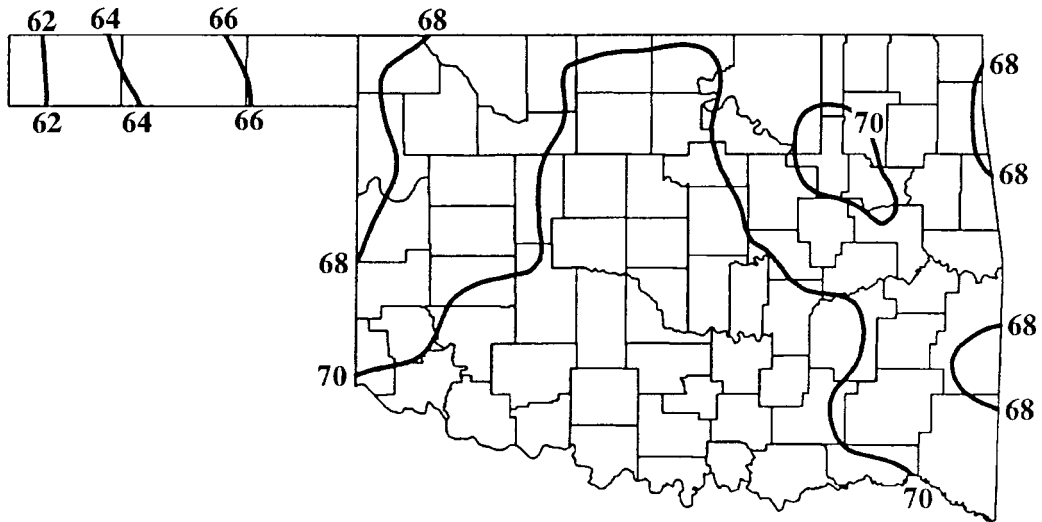
DATE	SUNRISE	SUNSET	DAYLIGHT
93 7 1	6:21AM	8:47PM CDT	14 hrs 27 mins
93 7 2	6:21AM	8:47PM CDT	14 hrs 26 mins
93 7 3	6:22AM	8:47PM CDT	14 hrs 26 mins
93 7 4	6:22AM	8:47PM CDT	14 hrs 25 mins
93 7 5	6:22AM	8:47PM CDT	14 hrs 25 mins
93 7 6	6:23AM	8:47PM CDT	14 hrs 24 mins
93 7 7	6:23AM	8:47PM CDT	14 hrs 23 mins
93 7 8	6:24AM	8:47PM CDT	14 hrs 23 mins
93 7 9	6:24AM	8:46PM CDT	14 hrs 22 mins
93 7 10	6:25AM	8:46PM CDT	14 hrs 21 mins
93 7 11	6:25AM	8:46PM CDT	14 hrs 20 mins
93 7 12	6:26AM	8:46PM CDT	14 hrs 20 mins
93 7 13	6:27AM	8:45PM CDT	14 hrs 19 mins
93 7 14	6:27AM	8:45PM CDT	14 hrs 18 mins
93 7 15	6:28AM	8:45PM CDT	14 hrs 17 mins
93 7 16	6:28AM	8:44PM CDT	14 hrs 16 mins
93 7 17	6:29AM	8:44PM CDT	14 hrs 15 mins
93 7 18	6:30AM	8:43PM CDT	14 hrs 14 mins
93 7 19	6:30AM	8:43PM CDT	14 hrs 13 mins
93 7 20	6:31AM	8:42PM CDT	14 hrs 12 mins
93 7 21	6:32AM	8:42PM CDT	14 hrs 10 mins
93 7 22	6:32AM	8:41PM CDT	14 hrs 9 mins
93 7 23	6:33AM	8:41PM CDT	14 hrs 8 mins
93 7 24	6:34AM	8:40PM CDT	14 hrs 7 mins
93 7 25	6:34AM	8:40PM CDT	14 hrs 5 mins
93 7 26	6:35AM	8:39PM CDT	14 hrs 4 mins
93 7 27	6:36AM	8:38PM CDT	14 hrs 3 mins
93 7 28	6:36AM	8:38PM CDT	14 hrs 1 mins
93 7 29	6:37AM	8:37PM CDT	14 hrs 0 mins
93 7 30	6:38AM	8:36PM CDT	13 hrs 58 mins
93 7 31	6:38AM	8:35PM CDT	13 hrs 57 mins

TULSA

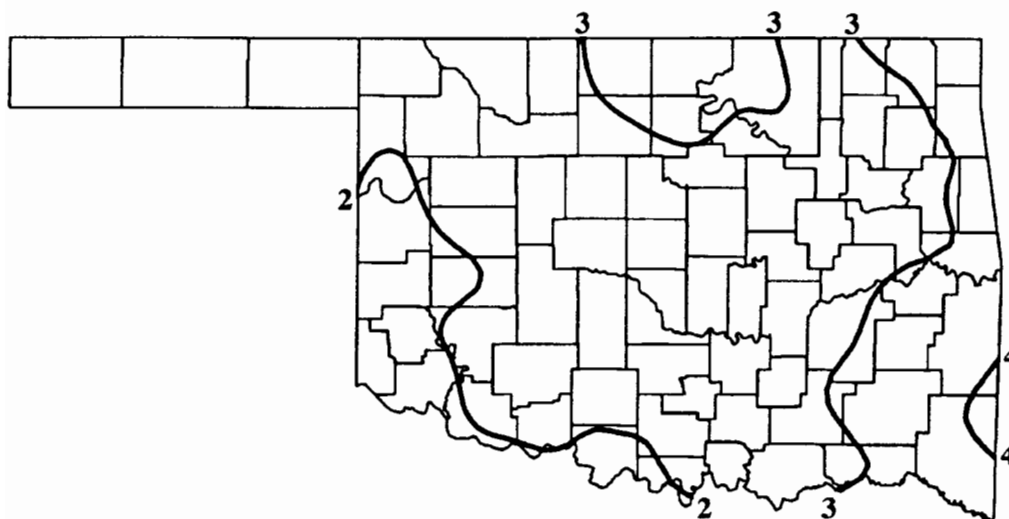
DATE	SUNRISE	SUNSET	DAYLIGHT
93 7 1	6:12AM	8:43PM CDT	14 hrs 31 mins
93 7 2	6:12AM	8:43PM CDT	14 hrs 30 mins
93 7 3	6:13AM	8:43PM CDT	14 hrs 30 mins
93 7 4	6:13AM	8:42PM CDT	14 hrs 29 mins
93 7 5	6:14AM	8:42PM CDT	14 hrs 29 mins
93 7 6	6:14AM	8:42PM CDT	14 hrs 28 mins
93 7 7	6:14AM	8:42PM CDT	14 hrs 28 mins
93 7 8	6:15AM	8:42PM CDT	14 hrs 27 mins
93 7 9	6:16AM	8:42PM CDT	14 hrs 26 mins
93 7 10	6:16AM	8:41PM CDT	14 hrs 25 mins
93 7 11	6:17AM	8:41PM CDT	14 hrs 25 mins
93 7 12	6:17AM	8:41PM CDT	14 hrs 24 mins
93 7 13	6:18AM	8:41PM CDT	14 hrs 23 mins
93 7 14	6:18AM	8:40PM CDT	14 hrs 22 mins
93 7 15	6:19AM	8:40PM CDT	14 hrs 21 mins
93 7 16	6:20AM	8:39PM CDT	14 hrs 20 mins
93 7 17	6:20AM	8:39PM CDT	14 hrs 19 mins
93 7 18	6:21AM	8:39PM CDT	14 hrs 18 mins
93 7 19	6:22AM	8:38PM CDT	14 hrs 17 mins
93 7 20	6:22AM	8:38PM CDT	14 hrs 15 mins
93 7 21	6:23AM	8:37PM CDT	14 hrs 14 mins
93 7 22	6:24AM	8:36PM CDT	14 hrs 13 mins
93 7 23	6:24AM	8:36PM CDT	14 hrs 12 mins
93 7 24	6:25AM	8:35PM CDT	14 hrs 10 mins
93 7 25	6:26AM	8:35PM CDT	14 hrs 9 mins
93 7 26	6:26AM	8:34PM CDT	14 hrs 8 mins
93 7 27	6:27AM	8:33PM CDT	14 hrs 6 mins
93 7 28	6:28AM	8:32PM CDT	14 hrs 5 mins
93 7 29	6:28AM	8:32PM CDT	14 hrs 3 mins
93 7 30	6:29AM	8:31PM CDT	14 hrs 2 mins
93 7 31	6:30AM	8:30PM CDT	14 hrs 0 mins



July Normal Daily Maximum Temperatures (°F)



July Normal Daily Minimum Temperatures (°F)



July Normal Monthly Precipitation (inches)

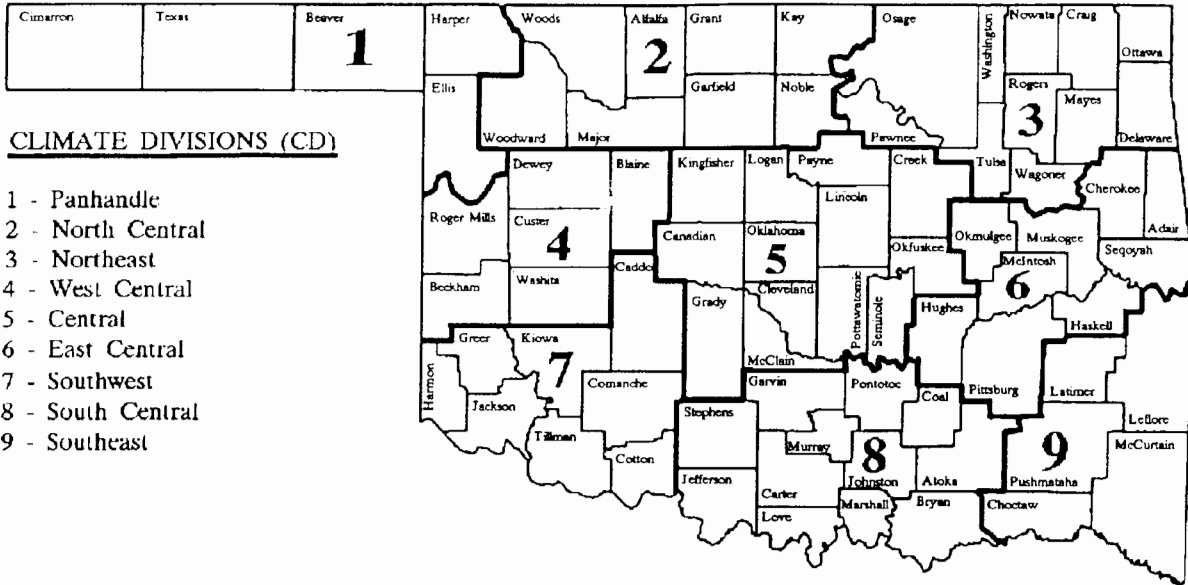
90-DAY NATIONAL WEATHER SERVICE OUTLOOK

(JUNE 1993 - AUGUST 1993)

Precipitation - Above Normal Statewide

**Temperature - Much Below Normal Northeast
Below Normal Elsewhere**

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

July 1993

Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual
92.3 max 69.5 min 1.9 ppt 0 hdd 15 cdd Highest Max 103-1917 Lowest Max 57-1951 Lowest Min 57-1951 Highest Min 96-1937 Greatest ppt 5.06-1913	92.5 max 70.3 min 0.8 ppt 0 hdd 16 cdd Highest Max 105-1980 Lowest Max 72-1924 Lowest Min 58-1924 Highest Min 78-1980 Greatest ppt 1.70-1922	91.3 max 70.0 min 0.7 ppt 0 hdd 16 cdd Highest Max 104-1931 Lowest Max 73-1915 Lowest Min 57-1924 Highest Min 80-1980 Greatest ppt 1.37-1900	91.4 max 69.5 min 1.0 ppt 0 hdd 15 cdd Highest Max 103-1911 Lowest Max 77-1958 Lowest Min 55-1915 Highest Min 80-1933 Greatest ppt 3.21-1979	92.0 max 69.9 min 0.7 ppt 0 hdd 16 cdd Highest Max 105-1953 Lowest Max 73-1958 Lowest Min 55-1972 Highest Min 80-1953 Greatest ppt 1.84-1929	92.5 max 70.3 min 0.6 ppt 0 hdd 16 cdd Highest Max 105-1970 Lowest Max 76-1960 Lowest Min 57-1952 Highest Min 78-1909 Greatest ppt 2.03-1895	93.1 max 70.5 min 0.4 ppt 0 hdd 17 cdd Highest Max 106-1964 Lowest Max 71-1905 Lowest Min 56-1891 Highest Min 80-1933 Greatest ppt 2.14-1898	93.4 max 70.4 min 0.5 ppt 0 hdd 17 cdd Highest Max 104-1933 Lowest Max 66-1895 Lowest Min 56-1905 Highest Min 80-1933 Greatest ppt 1.90-1945	92.9 max 70.7 min 0.8 ppt 0 hdd 17 cdd Highest Max 107-1933 Lowest Max 67-1895 Lowest Min 58-1905 Highest Min 81-1939 Greatest ppt 2.85-1906	92.6 max 69.9 min 1.2 ppt 0 hdd 16 cdd Highest Max 106-1954 Lowest Max 73-1953 Lowest Min 56-1975 Highest Min 81-1934 Greatest ppt 2.10-1965	92.8 max 70.6 min 0.6 ppt 0 hdd 17 cdd Highest Max 108-1936 Lowest Max 71-1891 Lowest Min 59-1967 Highest Min 82-1936 Greatest ppt 2.30-1921	93.2 max 70.9 min 0.15 ppt 0 hdd 17 cdd Highest Max 106-1980 Lowest Max 74-1967 Lowest Min 61-1891 Highest Min 79-1939 Greatest ppt 3.54-1900	93.5 max 71.4 min 0.6 ppt 0 hdd 17 cdd Highest Max 109-1936 Lowest Max 74-1953 Lowest Min 63-1898 Highest Min 82-1936 Greatest ppt 2.77-1916	93.3 max 70.9 min 0.5 ppt 0 hdd 17 cdd Highest Max 107-1936 Lowest Max 77-1944 Lowest Min 60-1970 Highest Min 78-1934 Greatest ppt 1.48-1897	93.7 max 71.3 min 0.25 ppt 0 hdd 18 cdd Highest Max 106-1978 Lowest Max 75-1959 Lowest Min 63-1911 Highest Min 79-1981 Greatest ppt 0.88-1978	93.7 max 70.8 min 0.20 ppt 0 hdd 17 cdd Highest Max 105-1986 Lowest Max 75-1959 Lowest Min 64-1900 Highest Min 78-1939 Greatest ppt 5.60-1981	92.7 max 70.7 min 0.14 ppt 0 hdd 17 cdd Highest Max 107-1939 Lowest Max 78-1970 Lowest Min 54-1970 Highest Min 80-1981 Greatest ppt 1.47-1950	92.7 max 70.8 min 0.20 ppt 0 hdd 17 cdd Highest Max 108-1986 Lowest Max 75-1981 Lowest Min 64-1900 Highest Min 80-1986 Greatest ppt 1.80-1963
JULY AVERAGES																	
TEMPERATURE : 81.8°F																	
PRECIPITATION : 2.84"																	
HEATING DEGREE DAYS : 0																	
COOLING DEGREE DAYS : 520																	

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

July 1993

Normal 1	Actual	Normal 2	Actual	Normal 3	Actual	Normal 4	Actual	Normal 5	Actual	Normal 6	Actual	Normal 7	Actual		
91.0 max 71.0 min .10 ppt 0 hdd 16 cdd Highest Max 106-1917 Lowest Max 73-1951 Lowest Min 57-1924 Highest Min 82-1980 Greatest ppt .90-1959		93.0 max 72.0 min .07 ppt 0 hdd 17 cdd Highest Max 105-1933 Lowest Max 78-1951 Lowest Min 54-1924 Highest Min 85-1980 Greatest ppt 1.41-1972		93.0 max 72.0 min .14 ppt 18 hdd 18 cdd Highest Max 107-1911 Lowest Max 81-1972 Lowest Min 54-1924 Highest Min 80-1983 Greatest ppt 1.89-1960		92.0 max 72.0 min .10 ppt 17 hdd 17 cdd Highest Max 108-1911 Lowest Max 76-1972 Lowest Min 56-1924 Highest Min 85-1980 Greatest ppt 1.30-1960		92.0 max 70.0 min .10 ppt 16 hdd 16 cdd Highest Max 108-1911 Lowest Max 77-1972 Lowest Min 53-1915 Highest Min 82-1990 Greatest ppt 1.55-1950		93.0 max 71.0 min .10 ppt 17 hdd 17 cdd Highest Max 105-1917 Lowest Max 78-1950 Lowest Min 55-1972 Highest Min 82-1980 Greatest ppt 1.52-1955		93.0 max 72.0 min .07 ppt 18 hdd 18 cdd Highest Max 105-1917 Lowest Max 79-1958 Lowest Min 58-1967 Highest Min 84-1980 Greatest ppt .97-1953		93.0 max 72.0 min .15 ppt 18 hdd 18 cdd Highest Max 111-1954 Lowest Max 77-1961 Lowest Min 54-1957 Highest Min 85-1954 Greatest ppt 1.35-1951	
Normal 8	Actual	Normal 9	Actual	Normal 10	Actual	Normal 11	Actual	Normal 12	Actual	Normal 13	Actual	Normal 14	Actual		
93.0 max 72.0 min .04 ppt 0 hdd 18 cdd Highest Max 106-1917 Lowest Max 81-1958 Lowest Min 61-1958 Highest Min 81-1980 Greatest ppt 60-1953		94.0 max 72.0 min .05 ppt 0 hdd 18 cdd Highest Max 107-1925 Lowest Max 73-1950 Lowest Min 59-1952 Highest Min 82-1980 Greatest ppt .85-1949		94.0 max 72.0 min .12 ppt 0 hdd 18 cdd Highest Max 105-1933 Lowest Max 75-1950 Lowest Min 59-1961 Highest Min 84-1980 Greatest ppt 1.17-1962		94.0 max 73.0 min .13 ppt 0 hdd 18 cdd Highest Max 109-1954 Lowest Max 66-1953 Lowest Min 59-1975 Highest Min 84-1980 Greatest ppt 1.35-1953		94.0 max 73.0 min .13 ppt 0 hdd 18 cdd Highest Max 107-1954 Lowest Max 72-1963 Lowest Min 59-1905 Highest Min 82-1969 Greatest ppt 2.30-1963		94.0 max 73.0 min .13 ppt 0 hdd 18 cdd Highest Max 109-1954 Lowest Max 66-1953 Lowest Min 59-1975 Highest Min 84-1980 Greatest ppt 1.35-1953		93.0 max 72.0 min .12 ppt 0 hdd 18 cdd Highest Max 111-1954 Lowest Max 76-1953 Lowest Min 54-1975 Highest Min 85-1980 Greatest ppt 1.57-1961		94.0 max 72.0 min .15 ppt 18 hdd 18 cdd Highest Max 112-1954 Lowest Max 77-1961 Lowest Min 54-1957 Highest Min 85-1954 Greatest ppt 1.35-1951	
Normal 15	Actual	Normal 16	Actual	Normal 17	Actual	Normal 18	Actual	Normal 19	Actual	Normal 20	Actual	Normal 21	Actual		
92.0 max 72.0 min .22 ppt 0 hdd 18 cdd Highest Max 111-1936 Lowest Max 78-1959 Lowest Min 54-1967 Highest Min 85-1980 Greatest ppt 3.91-1961		93.0 max 73.0 min .12 ppt 0 hdd 18 cdd Highest Max 109-1980 Lowest Max 72-1967 Lowest Min 57-1967 Highest Min 87-1980 Greatest ppt 2.55-1967		94.0 max 73.0 min .09 ppt 0 hdd 18 cdd Highest Max 110-1936 Lowest Max 82-1950 Lowest Min 59-1967 Highest Min 82-1980 Greatest ppt 1.85-1989		95.0 max 74.0 min .04 ppt 0 hdd 20 cdd Highest Max 113-1936 Lowest Max 74-1967 Lowest Min 64-1984 Highest Min 84-1954 Greatest ppt .77-1987		95.0 max 74.0 min .02 ppt 0 hdd 20 cdd Highest Max 113-1936 Lowest Max 83-1950 Lowest Min 61-1947 Highest Min 83-1980 Greatest ppt 1.37-1988		94.0 max 72.0 min .06 ppt 0 hdd 19 cdd Highest Max 109-1936 Lowest Max 78-1970 Lowest Min 56-1971 Highest Min 82-1981 Greatest ppt 1.05-1966		94.0 max 73.0 min .09 ppt 0 hdd 19 cdd Highest Max 109-1936 Lowest Max 77-1950 Lowest Min 55-1970 Highest Min 83-1954 Greatest ppt 1.77-1959		94.0 max 73.0 min .09 ppt 0 hdd 19 cdd Highest Max 109-1936 Lowest Max 77-1950 Lowest Min 55-1970 Highest Min 83-1954 Greatest ppt 1.77-1959	
Normal 22	Actual	Normal 23	Actual	Normal 24	Actual	Normal 25	Actual	Normal 26	Actual	Normal 27	Actual	Normal 28	Actual		
94.0 max 73.0 min .17 ppt 0 hdd 19 cdd Highest Max 109-1974 Lowest Max 77-1959 Lowest Min 57-1970 Highest Min 85-1954 Greatest ppt 3.12-1960		94.0 max 73.0 min .10 ppt 0 hdd 19 cdd Highest Max 107-1936 Lowest Max 79-1960 Lowest Min 58-1970 Highest Min 83-1954 Greatest ppt 1.95-1973		94.0 max 73.0 min .11 ppt 0 hdd 19 cdd Highest Max 110-1934 Lowest Max 76-1962 Lowest Min 60-1927 Highest Min 80-1983 Greatest ppt 1.95-1973		94.0 max 74.0 min .14 ppt 0 hdd 19 cdd Highest Max 108-1934 Lowest Max 80-1950 Lowest Min 54-1911 Highest Min 81-1986 Greatest ppt 2.20-1967		94.0 max 74.0 min .10 ppt 0 hdd 19 cdd Highest Max 108-1978 Lowest Max 75-1959 Lowest Min 60-1905 Highest Min 81-1981 Greatest ppt 1.33-1959		94.0 max 73.0 min .29 ppt 0 hdd 19 cdd Highest Max 105-1936 Lowest Max 76-1977 Lowest Min 59-1971 Highest Min 81-1986 Greatest ppt 7.54-1953		94.0 max 73.0 min .16 ppt 0 hdd 18 cdd Highest Max 109-1936 Lowest Max 80-1968 Lowest Min 61-1920 Highest Min 83-1986 Greatest ppt 2.72-1976		93.0 max 73.0 min .16 ppt 0 hdd 18 cdd Highest Max 109-1936 Lowest Max 80-1968 Lowest Min 61-1920 Highest Min 83-1986 Greatest ppt 2.72-1976	
Normal 29	Actual	Normal 30	Actual	Normal 31	Actual	JULY AVERAGES									
94.0 max 73.0 min .08 ppt 0 hdd 19 cdd Highest Max 110-1986 Lowest Max 79-1981 Lowest Min 60-1959 Highest Min 81-1986 Greatest ppt 1.24-1950		94.0 max 72.0 min .15 ppt 0 hdd 18 cdd Highest Max 110-1986 Lowest Max 79-1981 Lowest Min 55-1971 Highest Min 85-1980 Greatest ppt 3.78-1981		94.0 max 72.0 min .09 ppt 18 hdd 18 cdd Highest Max 108-1980 Lowest Max 81-1979 Lowest Min 51-1971 Highest Min 81-1958 Greatest ppt 1.04-1979		TEMPERATURE : 83.0°F									
					PRECIPITATION : 3.42"										
					HEATING DEGREE DAYS : 0										
					COOLING DEGREE DAYS : 564										