OKLAHOMA
MONTHLY SUMMARY
JULY 1993

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MONTHLY SUMMARY FOR JULY 1993

Mid-summer heat, frequently accompanied by strong southerly winds dominated Oklahoma weather during July. Rainfall was sparse in most of the southern and southeastern portions of the state, and was associated mostly with local downpours elsewhere. Flash flooding occurred in several counties in northern and western Oklahoma while stations in the south, east and southeast went without significant rainfall during the month. Temperatures in the upper 90s and low 100s were commonplace during the first half of the month and dominant during the closing days of July.

The statewide average temperature for the month was 84.1 degrees, ranking as the 16th hottest July in 102 years of records. July was the first month this year with a greater than normal average temperature. The year-to-date average temperature for the state of 58.5 degrees is 1.2 degrees below normal. Even with the hot July, 1993 is, thus far, the 18th coolest year on record.

Precipitation totals across the state averaged just 1.69 inches, missing the normal for the month by .93 inch. Precipitation for the first seven months of the year, averaged statewide, is 24.78 inches, exceeding the normal accumulation by 4.46 inches. The year-to-date ranks as the 18th wettest January-through-July. Stations in the state's southwestern climate division received an average of 150 percent of normal monthly precipitation. Conversely, the stations in the south central and southeastern climate divisions, several of which reported no precipitation for the month, averaged less than 10 percent of normal precipitation.

Hot, windy weather dominated during the first nine days of the month. Oklahoma City winds averaged over 15 miles per hour each day and gusts as high as 39 miles per hour were recorded. Guymon reached 105 degrees on the eighth, one of several triple-digit temperatures reported early in the month.

A series of weak disturbances in the upper atmosphere produced thunderstorms in several areas from the 5th through the 20th. Jay Tower, Vinita and Upper Spavinaw in the northeast each reported over 2.5 inches of overnight precipitation the morning of the 6th, as did Lookeba in the southwest. Strong thunderstorms moved across northern Oklahoma overnight on the 6th with winds at Pond Creek reportedly reaching 105 miles per hour.

Locally heavy rain in northern Harmon County and southern Beckham County on the 7th led to flood warnings along the North and Salt Fork of the Red River. Up to a foot of rain reportedly fell in northern Harmon County. Official reports included 6.43 inches near Vinson and 3.33 inches at Willow.

Thunderstorms in the Panhandle on the 9th and 10th produced up to 3 inches of rain in Texas County. Flash flood warnings were issued for part of the county. Wind gusts to 60 miles per hour were reported at Eva and Goodwell.

Thunderstorms on the 11th produced large hail and heavy rain east of Boise City, wind and hail damage in Woods, Alfalfa, Grant, Kay and Osage Counties and highway flooding north and east of Pawhuska, where 3.9 inches of rain were reported.

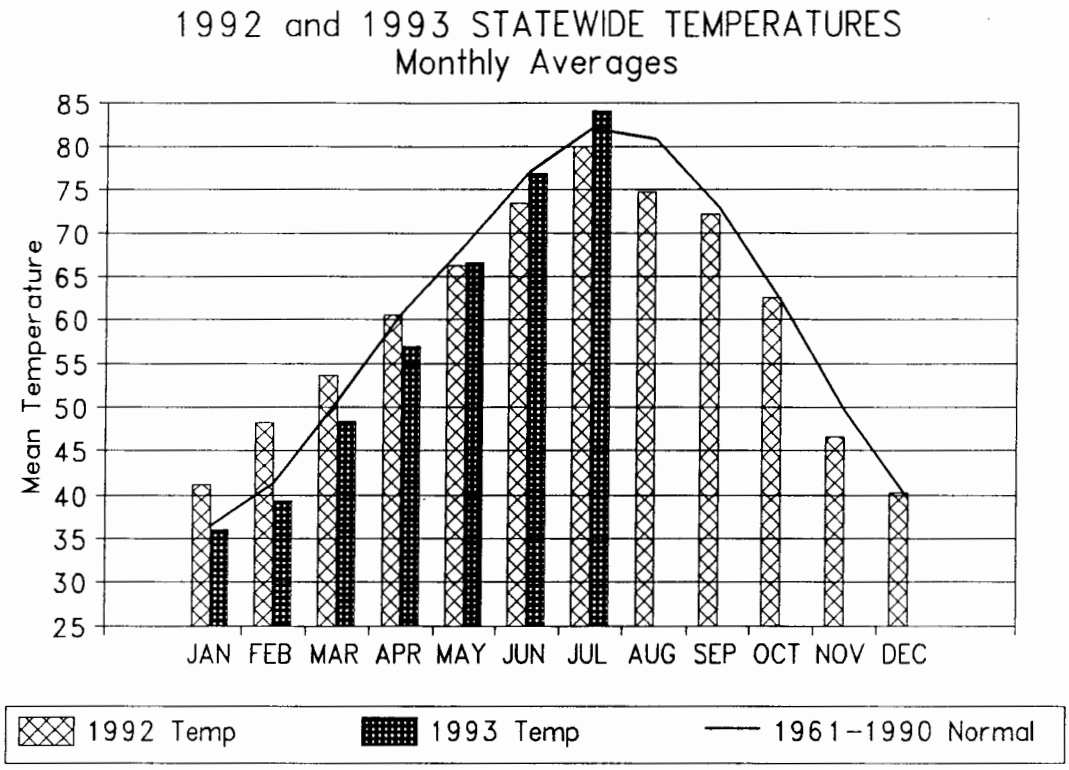
Up to 3.5 inches of rain were reported near Loyal in Kingfisher County on he 12th. Minor flooding occurred in Cherokee on the morning of the 14th in response to 2.5 inches of rain.

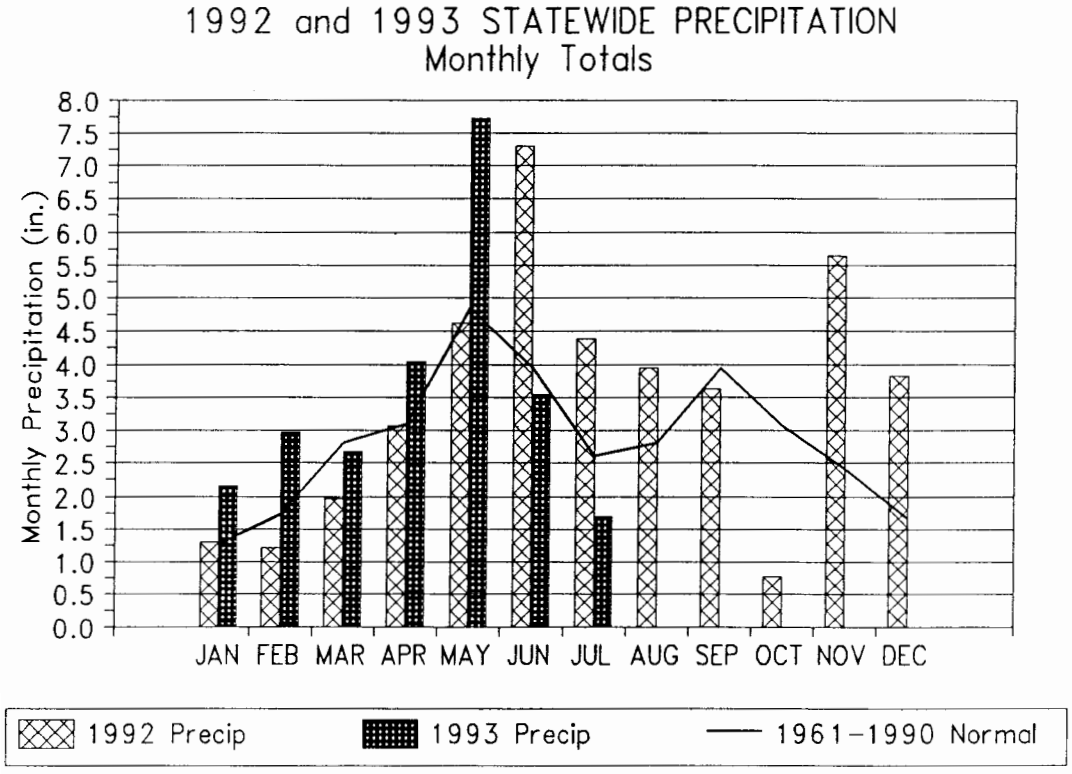
Minor flooding was reported on the Chikaskia river in Grant and Kay Counties on the 15th. Trees and power poles were knocked down in Oklahoma, Payne and Pawnee Counties on the 18th. Severe thunderstorms caused wind damage in Craig and Mayes Counties on the 20th. Hooker's morning precipitation report on the 21st was 2.22 inches.

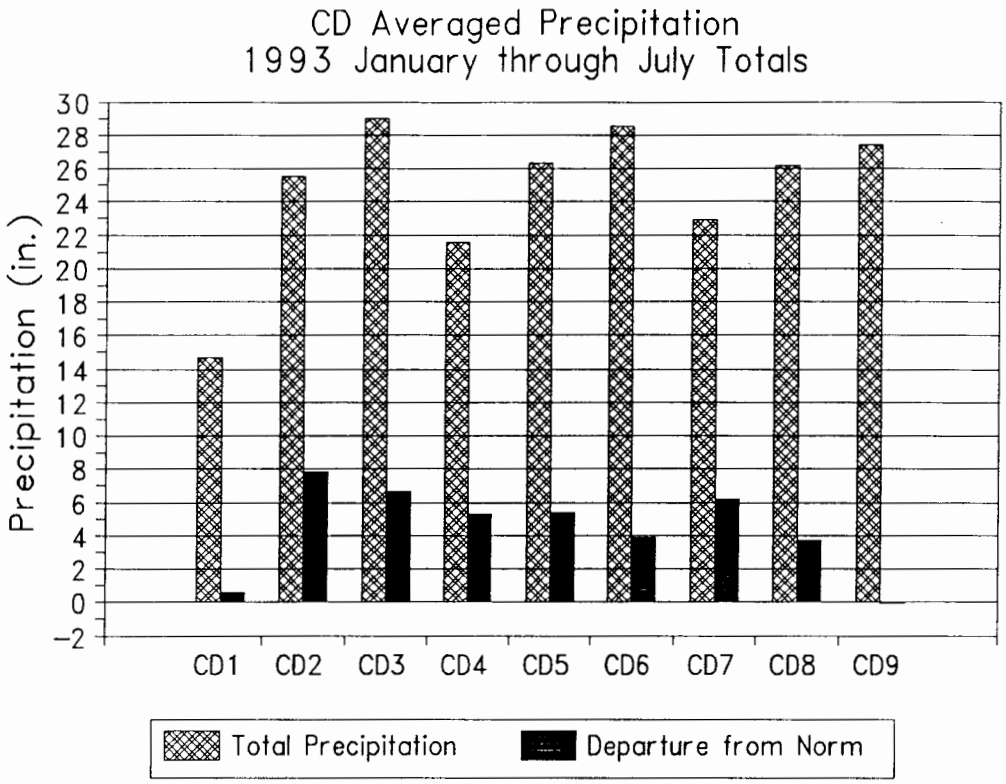
The heat intensified after the 17th and daytime high temperatures in the 80s and 90s were replaced by temperatures in the upper 90s and 100s. Triple digit temperatures appeared in the southeast on the 17th at Wilburton, McCurtain and Poteau and spread northeast. Readings of 105 or greater were first reported from Chattanooga on the 23rd with several other stations including Buffalo and Wilburton joining in on the 24th. The high temperature for the month was 109 degrees recorded at Buffalo on the 30th. At least two deaths were directly attributable to the heat.

At month's end, a heavy thunderstorm provided relief in Hammon with 1.56 inches of rain, and dime-sized hail fell at Wheeless in Cimarron County. Wilburton and McCurtain each reported highs of 108 degrees. Among the state's reporting stations, only Jay Tower at 98 and Kansas at 99 remained below 100 degrees on the 31st.

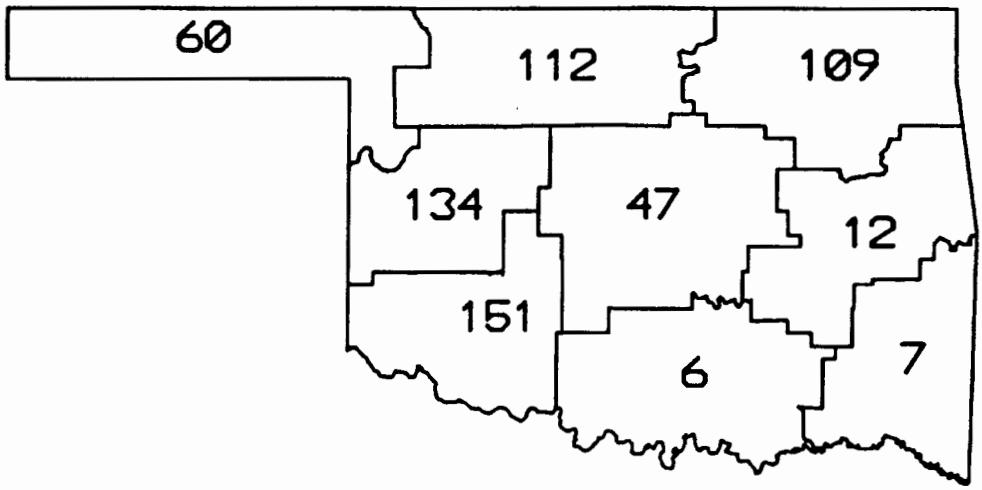
Howard L. Johnson


1992 and 1993 STATEWIDE TEMPERATURES
Monthly Averages
Mean Temperature
85
80
75
70
65
60
55
50
45
40
35
30
25
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1992 Temp
1993 Temp
1961-1990 Normal


1992 and 1993 STATEWIDE PRECIPITATION
Monthly Totals
Monthly Precipitation (in.)
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1992 Precip
1993 Precip
1961-1990 Normal



CD PERCENT OF NORMAL PRECIPITATION



JULY 1993

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

CD	MAX TEMP	DATE	LOCATION	MIN TEMP	DATE	LOCATION	24-HOUR PRECIP	DATE	LOCATION	MONTHLY PRECIP	LOCATION
1	109	30	BUFFALO	54	22	GOODWELL RES	2.22	21	HOOKER	3.33	HOOKER
2	106	31	CHEROKEE	62	11	WAYNOKA	2.50	14	CHEROKEE	7.40	CHEROKEE
3	104	31	MANNFORD	57	23	CLEVELAND	3.90	12	PAWHUSKA	6.91	HULAH DAM
4	104	31	TALOGA	65	14	ELK CITY	2.97	7	MORAVIA	4.38	RETROP
	104	31	WEATHERFORD	65	19	REYDON					
				65	29	REYDON					
				65	7	WEATHERFORD					
				65	14	WEATHERFORD					
5	107	31	HENNESSEY	67	7	BLANCHARD	2.00	19	TECUMSEH	3.31	MULHALL
				67	7	CHICKASHA					
				67	7	EL RENO					
				67	7	HENNESSEY					
				67	12	KINGFISHER					
6	108	31	MCCURTAIN	64	10	SALLISAW	1.48	19	DUSTIN	1.48	DUSTIN
				64	11	SALLISAW					
7	107	31	CARNEGIE	62	29	WICHITA MT WLR	6.43	7	VINSON	9.53	VINSON
	107	24	CHATTANOOGA								
	107	25	CHATTANOOGA								
8	107	30	CANEY	65	19	MARLOW	.40	30	CENTRAHOMA	1.06	DUNCAN
9	108	31	WILBURTON	60	27	BATTIEST	1.24	21	BENGAL	1.40	CARTER TWR
				60	10	SMITHVILLE					
				60	27	SMITHVILLE					

TABLE OF 1992/1993 COMPARISONS

	July Temperature (°F)		July Precipitation (in.)	
Station	1992	1993	1992	1993
Arnett	76.3	79.7	1.58	1.48
Enid	82.7	84.4	3.41	3.94
Mutual	78.9	82.8	2.38	0.93
Tulsa	82.1	84.7	1.79	2.42
Elk City	79.9	82.4	5.81	2.54
Oklahoma City	81.1	83.6	4.01	1.24
McAlester	81.4	86.9	6.45	0.09
Altus Irr Sta	82.1	85.7	1.71	1.73
Durant	80.1	84.5	8.71	0.01
Ada	79.7	84.5	6.21	0.25
Hugo	79.9	85.6	7.39	0.11

EXTREMES

Variable	Station	Division	Observation	Date
Minimum temperature (°F)	Goodwell	1	54	22
Maximum temperature (°F)	Buffalo	1	109	30
Maximum 24-hour precipitation	Vinson	7	6.43"	7

JULY 1993 SUMMARY FOR NORTHWEST DIVISION (CD1)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ARNETT	332	1	79.7	31	-.7	100.	31	65.	15	.0	.0	456.5	-20.5	1.482	31	-.41	.59	21
BOISE CITY 2 E	908	1	78.3	31	.4	103.	8	55.	6	.0	.0	412.5	12.5	1.191	31	-1.56	.58	28
BUFFALO	1243	1	85.0	31	1.8	109.	30	65.	14	.0	.0	621.5	57.5	1.300	31	-1.69	.60	21
FARGO	3070	1	*****	0	*****	****	0	****	0	******	******	******	******	.670	31	-1.37	.24	21
GAGE FAA APT	3407	1	83.1	31	1.2	105.	31	63.	20	.0	.0	560.5	36.5	.552	31	-1.32	.29	21
GATE	3489	1	82.3	31	.5	104.	31	65.	30	.0	.0	535.0	14.0	2.322	31	-.11	1.48	12
GOODWELL RES ST	3628	1	77.9	31	-.6	104.	9	54.	22	.0	.0	400.0	-19.0	2.450	31	-.07	1.46	10
GUYMON	3835	1	81.1	27	*****	105.	8	59.	6	.0	******	434.5	******	1.331	25	*****	.93	10
HOOKER	4298	1	79.5	31	-.5	104.	9	58.	7	.0	.0	450.5	-14.5	3.332	31	1.04	2.22	21
KENTON	4766	1	78.7	31	1.2	107.	9	55.	6	.0	.0	425.0	37.0	.960	31	-2.38	.96	9
LAVERNE	5045	1	*****	0	*****	****	0	****	0	******	******	******	******	.891	31	-1.64	.57	21
OPTIMA LAKE	6740	1	80.7	31	*****	104.	31	60.	6	.0	******	486.5	******	2.390	31	*****	1.14	10
REGNIER	7534	1	*****	0	*****	****	0	****	0	******	******	******	******	.981	31	-1.36	.43	29

JULY 1993 SUMMARY FOR NORTH CENTRAL DIVISION (CD2)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ALVA	193	2	83.9	31	*****	105.	31	66.	7	.0	******	585.5	******	4.990	31	*****	1.93	14
VANCE AFB	302	2	*****	0	*****	****	0	****	0	******	******	******	******	4.192	30	*****	2.00	8
BILLINGS	755	2	83.2	31	-.1	102.	31	66.	12	.0	.0	565.5	-1.5	3.071	31	-.06	1.35	12
BLACKWELL 2E	818	2	83.8	31	1.2	105.	31	68.	12	.0	.0	582.0	36.0	3.160	31	.02	1.56	14
BRAMAN	1075	2	*****	0	*****	****	0	****	0	******	******	******	******	2.402	31	*****	1.50	14
CEDARDALE	1620	2	*****	0	*****	****	0	****	0	******	******	******	******	1.522	31	*****	.60	21
CHEROKEE	1724	2	85.2	31	1.1	106.	31	66.	8	.0	.0	627.0	35.0	7.400	31	4.66	2.50	14
ENID	2912	2	84.4	31	1.1	103.	31	67.	12	.0	.0	602.5	35.5	3.940	31	1.18	2.04	8
FT SUPPLY DAM	3304	2	81.5	31	.8	100.	31	65.	15	.0	.0	510.0	23.0	.741	31	-1.45	.37	14
FREEDOM	3358	2	82.5	31	-.5	103.	31	66.	30	.0	.0	543.0	-15.0	2.541	31	.18	1.05	12
GREAT SALT PLNS	3740	2	83.1	31	.1	104.	31	67.	14	.0	.0	560.5	2.5	5.131	31	2.44	1.91	14
HARDY	3909	2	*****	0	*****	****	0	****	0	******	******	******	******	4.023	31	*****	1.55	13
HELENA 1 SSE	4019	2	82.7	31	.8	103.	31	66.	8	.0	.0	549.5	25.5	6.882	31	4.26	2.02	12
JEFFERSON	4573	2	84.3	31	.8	105.	31	66.	12	.0	.0	598.5	24.5	4.761	31	1.43	1.91	11
LAMONT	5013	2	*****	0	*****	****	0	****	0	******	******	******	******	3.271	31	*****	1.06	14
MEDFORD	5768	2	*****	0	*****	****	0	****	0	******	******	******	******	4.751	31	*****	2.10	11
MORRISON	6065	2	*****	0	*****	****	0	****	0	******	******	******	******	1.970	31	*****	1.25	14
MUTUAL	6139	2	82.8	31	1.0	105.	31	66.	13	.0	.0	553.0	32.0	.931	31	-1.42	.40	14
NEWKIRK	6278	2	83.2	31	.7	102.	31	66.	11	.0	.0	564.0	21.0	2.191	31	-1.09	.78	14
ORIENTA	6751	2	*****	0	*****	****	0	****	0	******	******	******	******	2.600	31	.00	1.18	14
PERRY	7012	2	85.2	31	2.5	104.	31	69.	12	.0	.0	627.5	78.5	1.121	31	-1.97	.60	14
PONCA CITY FAA	7201	2	85.6	31	3.1	105.	30	69.	12	.0	.0	638.5	95.5	3.503	31	-.20	1.20	19
RED ROCK 1 NNE	7505	2	*****	0	*****	****	0	****	0	******	******	******	******	1.430	31	-1.46	.87	12
WAYNOKA	9404	2	83.9	31	.7	105.	31	62.	11	.0	.0	584.5	20.5	2.050	31	-.38	.83	14
WOODWARD	9760	2	*****	0	*****	****	0	****	0	******	******	******	******	.590	31	-2.00	.36	21

JULY 1993 SUMMARY FOR NORTHEAST DIVISION (CD3)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
BARNSDALL	535	3	83.3	31	1.1	103.	31	68.	12	.0	.0	568.5	35.5	2.181	31	-.75	.83	15
BARTLESVILLE 2W	548	3	83.8	31	1.7	103.	31	68.	12	.0	.0	583.5	53.5	4.531	31	1.93	1.76	12
BIXBY	782	3	84.2	31	3.2	103.	31	69.	16	.0	.0	595.0	99.0	.430	31	-2.44	.28	26
BURBANK	1256	3	*****	0	*****	****	0	****	0	******	******	******	******	2.562	31	-.68	1.93	14
CHELSEA 4 S	1717	3	*****	0	*****	****	0	****	0	******	******	******	******	2.340	31	*****	.78	6
CLAREMORE	1828	3	82.7	31	1.5	101.	31	67.	27	.0	.0	547.5	45.5	2.400	31	-.57	.85	6
CLEVELAND 5 WSW	1902	3	82.9	22	*****	101.	31	57.	23	.0	******	394.0	******	3.391	25	*****	1.68	12
FORAKER	3250	3	*****	0	*****	****	0	****	0	******	******	******	******	4.910	31	1.84	1.74	12
HOLLOW	4258	3	*****	0	*****	****	0	****	0	******	******	******	******	2.870	29	*****	.97	15
HOMINY	4289	3	*****	0	*****	****	0	****	0	******	******	******	******	3.332	31	.26	.96	15
HULAH DAM	4393	3	81.5	22	*****	100.	31	64.	31	.0	******	364.0	******	6.910	31	4.37	1.96	13
JAY TOWER	4567	3	81.3	31	*****	98.	31	68.	13	.0	******	506.5	******	5.100	31	*****	3.50	6
KANSAS 1 ESE	4672	3	80.8	31	.9	99.	31	68.	10	.0	.0	489.0	27.0	1.723	31	-.89	.67	22
KEYSTONE DAM	4812	3	84.2	26	*****	102.	31	69.	12	.0	******	500.0	******	.752	27	*****	.28	12
LENAPAH	5118	3	*****	0	*****	****	0	****	0	******	******	******	******	3.330	24	*****	.66	12
MANNFORD 6 NW	5522	3	83.8	31	1.8	104.	31	68.	12	.0	.0	584.0	57.0	1.970	31	-.80	1.04	12
MARAMEC	5540	3	*****	0	*****	****	0	****	0	******	******	******	******	3.190	31	.40	.82	13
MIAMI	5855	3	81.3	31	1.2	100.	31	67.	16	.0	.0	505.0	37.0	5.130	29	*****	2.30	6
NOWATA	6485	3	82.5	31	.6	101.	31	68.	13	.0	.0	541.0	17.0	3.621	31	.79	.89	12
ONETA 1 WNW	6713	3	*****	0	*****	****	0	****	0	******	******	******	******	1.150	31	*****	.79	26
PAWHUSKA	6935	3	82.7	29	*****	98.	24	65.	12	.0	******	512.0	******	6.420	29	*****	3.90	12
PAWNEE	6940	3	*****	0	*****	****	0	****	0	******	******	******	******	5.630	31	2.90	1.95	14
PRYOR 6 N	7309	3	80.8	30	.1	96.	29	66.	27	.0	.0	473.0	-14.0	3.091	29	*****	1.60	6
RALSTON	7390	3	83.6	31	1.7	102.	31	68.	20	.0	.0	578.0	54.0	2.370	31	-.57	1.62	14
RAMONA 4 N	7394	3	*****	0	*****	****	0	****	0	******	******	******	******	3.290	31	*****	2.20	12
SKIATOOK	8258	3	*****	0	*****	****	0	****	0	******	******	******	******	2.280	31	-.86	.94	12
SPAVINAW	8380	3	84.1	31	2.1	100.	31	72.	30	.0	.0	592.0	65.0	2.931	31	-.09	2.35	6
TULSA WSO APT	8992	3	84.7	31	1.4	103.	31	70.	12	.0	.0	611.5	44.5	2.415	31	-.68	1.23	15
UPPER SPAVINAW	9101	3	86.0	31	*****	102.	25	70.	16	.0	******	651.0	******	3.452	31	*****	2.60	6
VINITA 2 N	9203	3	81.4	23	*****	95.	23	68.	16	.0	******	377.0	******	5.060	23	*****	2.63	6
WAGONER	9247	3	84.8	31	2.9	103.	31	72.	28	.0	.0	613.0	89.0	.582	31	-2.25	.58	15
WANN	9298	3	*****	0	*****	****	0	****	0	******	******	******	******	4.970	31	*****	1.84	7
WYNONA	9792	3	*****	0	*****	****	0	****	0	******	******	******	******	2.630	31	*****	.66	15

JULY 1993 SUMMARY FOR WEST CENTRAL DIVISION (CD4)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
CANTON DAM	1445	4	82.7	31	.6	102.	31	66.	14	.0	.0	549.0	19.0	2.641	31	.29	1.02	13
CHEYENNE	1738	4	*****	0	*****	****	0	****	0	******	******	******	******	2.880	31	1.15	1.48	1
CLINTON	1909	4	84.0	31	.2	103.	31	66.	14	.0	.0	589.5	6.5	2.591	31	.50	.76	22
COLONY	2039	4	*****	0	*****	****	0	****	0	******	******	******	******	3.841	31	*****	1.59	13
CORDELL	2125	4	*****	0	*****	****	0	****	0	******	******	******	******	3.310	31	1.38	1.71	7
ELK CITY 1 E	2849	4	82.4	31	.5	101.	31	65.	14	.0	.0	540.0	16.0	2.540	31	.65	.94	7
ERICK 4 E	2944	4	81.9	31	.2	102.	31	66.	14	.0	.0	523.5	5.5	3.230	31	1.54	1.05	15
GEARY	3497	4	85.2	31	3.0	102.	31	71.	13	.0	.0	625.0	92.0	2.890	31	.83	1.25	7
HAMMON 1 NNE	3871	4	82.5	30	.5	102.	24	66.	19	.0	.0	524.0	-3.0	3.121	30	*****	1.56	31
LEEDEY	5090	4	*****	0	*****	****	0	****	0	******	******	******	******	1.760	31	-.02	1.00	12
MACKIE 4 NNW	5463	4	*****	0	*****	****	0	****	0	******	******	******	******	2.920	31	*****	1.86	12
MORAVIA 2 NNE	6035	4	*****	0	*****	****	0	****	0	******	******	******	******	4.240	31	2.48	2.97	7
OKEENE	6629	4	84.1	31	.6	102.	31	67.	14	.0	.0	592.0	18.0	2.710	31	.35	1.20	7
RETROP	7565	4	*****	0	*****	****	0	****	0	******	******	******	******	4.380	31	*****	2.92	7
REYDON	7579	4	82.7	31	2.1	103.	31	65.	29	.0	.0	549.0	65.0	1.431	31	-.37	.72	12
SAYRE	7952	4	*****	0	*****	****	0	****	0	******	******	******	******	2.720	31	1.05	.71	7
SWEETWATER 2 E	8652	4	*****	0	*****	****	0	****	0	******	******	******	******	.571	31	*****	.40	14
TALOGA	8708	4	83.5	31	1.5	104.	31	66.	14	.0	.0	573.0	46.0	1.482	31	-.75	1.00	14
THOMAS	8815	4	*****	0	*****	****	0	****	0	******	******	******	******	3.780	31	*****	2.03	14
VICI	9172	4	*****	0	*****	****	0	****	0	******	******	******	******	2.110	31	-.05	1.60	14
WATONGA	9364	4	84.2	31	1.8	102.	31	67.	14	.0	.0	596.5	57.5	3.551	31	1.28	1.73	13
WEATHERFORD	9422	4	84.0	31	1.9	104.	31	65.	14	.0	.0	590.5	60.5	2.451	31	.35	1.20	13

JULY 1993 SUMMARY FOR CENTRAL DIVISION (CD5)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
AMBER	200	5	*****	0	*****	****	0	****	0	******	******	******	******	.830	31	*****	.48	6
ARCADIA	288	5	*****	0	*****	****	0	****	0	******	******	******	******	1.540	31	*****	.62	13
TINKER AFB	325	5	*****	0	*****	****	0	****	0	******	******	******	******	1.323	31	*****	.56	14
BLANCHARD 2 SSW	830	5	84.0	31	1.4	102.	31	67.	7	.0	.0	590.0	44.0	1.971	31	-.60	.73	19
BRISTOW	1144	5	84.3	31	2.3	104.	30	69.	27	.0	.0	597.5	70.5	.524	31	-2.22	.18	15
CHANDLER	1684	5	84.5	31	2.0	103.	31	68.	19	.0	.0	606.0	63.0	.470	31	-2.24	.42	14
CHICKASHA EX ST	1750	5	84.8	31	1.9	104.	31	67.	7	.0	.0	615.0	60.0	1.521	31	-.57	.52	14
COX CITY 1 E	2196	5	*****	0	*****	****	0	****	0	******	******	******	******	.530	31	*****	.26	14
CRESCENT	2242	5	*****	0	*****	****	0	****	0	******	******	******	******	3.120	31	*****	1.52	6
CUSHING	2318	5	83.8	30	1.9	102.	31	70.	12	.0	.0	565.5	41.5	1.340	31	-1.78	.54	14
EL RENO 1 N	2818	5	84.3	28	*****	102.	31	67.	7	.0	******	540.0	******	1.750	28	*****	1.48	7
GUTHRIE	3821	5	85.9	31	2.6	106.	31	68.	7	.0	.0	649.0	82.0	.981	31	-1.35	.48	14
HENNESSEY 4 ESE	4055	5	85.1	26	*****	107.	31	67.	7	.0	******	522.5	******	3.261	31	.71	1.30	13
INGALLS	4489	5	*****	0	*****	****	0	****	0	******	******	******	******	2.603	31	*****	1.35	13
KINGFISHER 2 SE	4861	5	84.1	28	*****	103.	31	67.	12	.0	******	536.0	******	1.610	31	-.44	.54	14
KONAWA	4915	5	*****	0	*****	****	0	****	0	******	******	******	******	.041	31	-1.98	.04	15
MARSHALL	5589	5	*****	0	*****	****	0	****	0	******	******	******	******	.570	31	-1.70	.22	7
MEEKER 4 W	5779	5	83.8	30	1.9	101.	31	70.	12	.0	.0	565.0	41.0	.490	30	*****	.19	31
MULHALL	6110	5	*****	0	*****	****	0	****	0	******	******	******	******	3.310	26	*****	1.67	6
NORMAN 3 S	6386	5	84.0	31	1.8	105.	31	68.	20	.0	.0	588.5	55.5	.491	31	-2.27	.28	14
OILTON 2 SE	6616	5	*****	0	*****	****	0	****	0	******	******	******	******	1.610	31	*****	.54	12
OKEMAH	6638	5	84.7	31	3.1	104.	31	70.	10	.0	.0	611.0	96.0	.741	31	-2.42	.71	19
OKLAHOMA CTY WS	6661	5	83.6	31	1.6	103.	31	67.	7	.0	.0	576.5	49.5	1.242	31	-1.37	.51	7
PERKINS	7003	5	*****	0	*****	****	0	****	0	******	******	******	******	1.010	31	-1.65	.66	14
PIEDMONT	7068	5	*****	0	*****	****	0	****	0	******	******	******	******	1.450	31	*****	.95	7
PRAGUE	7264	5	*****	0	*****	****	0	****	0	******	******	******	******	.230	31	-2.73	.16	25
PURCELL 5 SW	7327	5	85.0	31	2.2	105.	30	67.	20	.0	.0	620.5	68.5	.383	31	-2.38	.12	14
SEMINOLE	8042	5	85.5	31	2.1	103.	31	71.	16	.0	.0	637.0	67.0	.101	31	-2.42	.09	6
SHAWNEE	8110	5	*****	0	*****	****	0	****	0	******	******	******	******	.621	31	-1.55	.20	6
STELLA	8479	5	*****	0	*****	****	0	****	0	******	******	******	******	.580	31	*****	.30	14
STILLWATER 2 W	8501	5	83.6	31	2.0	102.	31	68.	13	.0	.0	576.5	61.5	2.570	31	-.33	1.19	14
STROUD 1 N	8563	5	*****	0	*****	****	0	****	0	******	******	******	******	.793	31	*****	.47	26
TECUMSEH	8751	5	*****	0	*****	****	0	****	0	******	******	******	******	2.200	31	*****	2.00	19
UNION CITY 1 SE	9086	5	*****	0	*****	****	0	****	0	******	******	******	******	1.481	31	-.82	1.19	7
WELTY 1 SSE	9479	5	*****	0	*****	****	0	****	0	******	******	******	******	.550	31	*****	.55	15
WEWOKA	9575	5	*****	0	*****	****	0	****	0	******	******	******	******	.030	31	-2.34	.03	29

JULY 1993 SUMMARY FOR EAST CENTRAL DIVISION (CD6)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ASHLAND	364	6	*****	0	*****	****	0	****	0	******	******	******	******	.002	31	*****	.00	14
BEGGS	631	6	*****	0	*****	****	0	****	0	******	******	******	******	.000	31	*****	.00	31
BOYNTON	1027	6	*****	0	*****	****	0	****	0	******	******	******	******	.001	31	*****	.00	6
CALVIN	1391	6	*****	0	*****	****	0	****	0	******	******	******	******	.421	31	-2.65	.42	15
CHECOTAH	1711	6	*****	0	*****	****	0	****	0	******	******	******	******	.131	31	-2.91	.13	6
CLAYTON 14 WNW	1858	6	*****	0	*****	****	0	****	0	******	******	******	******	.371	31	*****	.25	31
DEWAR 2 NE	2485	6	*****	0	*****	****	0	****	0	******	******	******	******	.020	31	-3.36	.02	19
DUSTIN	2690	6	*****	0	*****	****	0	****	0	******	******	******	******	1.480	31	*****	1.48	19
EUFAULA	2993	6	85.7	31	2.4	103.	31	70.	10	.0	.0	643.0	76.0	.000	31	-3.29	.00	31
HANNA	3884	6	84.0	31	2.2	104.	31	66.	27	.0	.0	590.5	69.5	.111	31	-2.70	.08	15
HARTSHORNE	3946	6	*****	0	*****	****	0	****	0	******	******	******	******	.100	31	*****	.10	31
HASKELL	3956	6	*****	0	*****	****	0	****	0	******	******	******	******	.582	31	-2.03	.38	15
HOLDENVILLE	4235	6	84.1	31	2.2	104.	31	70.	27	.0	.0	593.5	69.5	.032	31	-2.75	.03	15
LAKE EUFAULA	4975	6	85.3	30	*****	106.	26	68.	10	.0	******	609.0	******	.120	30	*****	.12	6
LYONS 2 N	5437	6	*****	0	*****	****	0	****	0	******	******	******	******	.202	31	-2.71	.18	6
MARBLE CITY	5546	6	*****	0	*****	****	0	****	0	******	******	******	******	.571	31	*****	.57	7
MCALESTER FAA	5664	6	86.9	31	5.0	106.	29	71.	10	.0	.0	678.5	154.5	.092	31	-2.58	.09	30
MCCURTAIN 1 SE	5693	6	87.0	31	4.6	108.	31	68.	10	.0	.0	681.5	142.5	1.000	31	-2.17	1.00	21
MUSKOGEE	6130	6	85.2	31	3.0	104.	31	69.	10	.0	.0	625.0	92.0	.131	31	-2.51	.10	14
OKMULGEE W W	6670	6	83.8	31	3.1	104.	31	65.	27	.0	.0	581.5	94.5	.005	31	-2.68	.00	31
OKTAHA 2 NE	6678	6	*****	0	*****	****	0	****	0	******	******	******	******	.170	31	*****	.10	6
QUINTON	7372	6	*****	0	*****	****	0	****	0	******	******	******	******	.080	31	-3.38	.08	21
SALLISAW 2 NE	7862	6	83.5	31	1.7	103.	26	64.	11	.0	.0	575.0	54.0	.112	31	-2.89	.11	31
SCIPIO	7979	6	*****	0	*****	****	0	****	0	******	******	******	******	.110	31	*****	.11	6
SCRAPER	7993	6	*****	0	*****	****	0	****	0	******	******	******	******	.700	31	*****	.42	15
SHORT	8170	6	*****	0	*****	****	0	****	0	******	******	******	******	.220	31	*****	.22	22
STILWELL 1 NE	8506	6	82.7	31	2.8	103.	31	66.	11	.0	.0	550.0	88.0	.372	31	-2.68	.22	6
TAHLEQUAH	8677	6	82.3	31	1.8	101.	31	66.	10	.0	.0	536.5	55.5	1.401	31	-1.58	.55	14
WEBBERS FALLS	9445	6	84.2	30	2.5	106.	27	67.	27	.0	.0	575.0	57.0	.310	31	-2.17	.30	6
WESTVILLE	9523	6	*****	0	*****	****	0	****	0	******	******	******	******	.641	31	*****	.40	21
WETUMKA 3 NE	9571	6	*****	0	*****	****	0	****	0	******	******	******	******	.410	31	-2.51	.27	6

JULY 1993 SUMMARY FOR SOUTHWEST DIVISION (CD7)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ALTUS IRR STA	179	7	85.7	31	1.2	104.	31	68.	23	.0	.0	643.0	38.0	1.730	31	-.03	.90	14
ALTUS DAM	184	7	85.4	31	1.2	105.	31	65.	7	.0	.0	632.0	37.0	3.260	31	1.35	1.03	15
ANADARKO	224	7	83.3	28	*****	100.	31	65.	7	.0	******	512.5	******	4.380	28	*****	2.34	6
APACHE	260	7	*****	0	*****	****	0	****	0	******	******	******	******	1.920	31	-.11	.93	7
ALTUS AFB	447	7	*****	0	*****	****	0	****	0	******	******	******	******	1.365	31	*****	.66	15
CARNEGIE 2 ENE	1504	7	84.5	29	*****	107.	31	65.	7	.0	******	565.5	******	2.870	29	*****	1.09	7
CHATTANOOGA	1706	7	87.1	31	2.8	107.	25	69.	27	.0	.0	685.0	87.0	1.440	31	-.68	.56	15
DUNCAN 11 W	2668	7	*****	0	*****	****	0	****	0	******	******	******	******	1.290	31	*****	.76	12
FREDERICK	3353	7	84.6	31	.2	103.	25	70.	14	.0	.0	608.5	7.5	3.330	31	1.25	1.38	14
GRANDFIELD 4 NW	3709	7	*****	0	*****	****	0	****	0	******	******	******	******	1.840	31	-.14	.55	15
HEADRICK	3998	7	*****	0	*****	****	0	****	0	******	******	******	******	2.530	31	*****	1.10	13
HOBART FAA APT	4204	7	85.4	30	1.7	104.	24	65.	7	.0	.0	612.5	32.5	5.871	31	3.79	2.42	14
HOLLIS	4249	7	84.7	31	.5	104.	31	67.	22	.0	.0	610.5	15.5	2.581	31	.96	1.24	15
LAWTON	5063	7	85.7	31	2.2	104.	25	70.	7	.0	.0	641.0	67.0	.800	31	-1.10	.46	14
FORT SILL	5068	7	85.8	31	*****	104.	30	69.	7	.0	******	644.5	******	1.495	31	*****	.70	13
LOOKEBA 2 ENE	5329	7	*****	0	*****	****	0	****	0	******	******	******	******	5.100	31	3.21	3.28	6
MANGUM RES STA	5509	7	83.3	31	-.9	104.	31	64.	7	.0	.0	566.5	-28.5	3.500	31	1.47	1.10	15
RANDLETT 9 E	7403	7	*****	0	*****	****	0	****	0	******	******	******	******	.650	31	*****	.40	22
ROOSEVELT	7727	7	*****	0	*****	****	0	****	0	******	******	******	******	3.410	31	1.35	1.81	14
SEDAN	8016	7	*****	0	*****	****	0	****	0	******	******	******	******	2.720	31	*****	.70	14
SNYDER	8299	7	*****	0	*****	****	0	****	0	******	******	******	******	.000	18	*****	.00	31
VINSON 3 WNW	9212	7	*****	0	*****	****	0	****	0	******	******	******	******	9.531	31	7.90	6.43	7
WALTERS	9278	7	85.8	31	1.7	105.	31	69.	19	.0	.0	646.0	54.0	1.500	31	-.86	.95	13
WICHITA MT WLR	9629	7	82.9	29	*****	102.	31	62.	29	.0	******	519.5	******	2.030	30	*****	.95	15
WILLOW	9668	7	*****	0	*****	****	0	****	0	******	******	******	******	4.510	31	*****	3.33	7

JULY 1993 SUMMARY FOR SOUTH CENTRAL DIVISION (CD8)

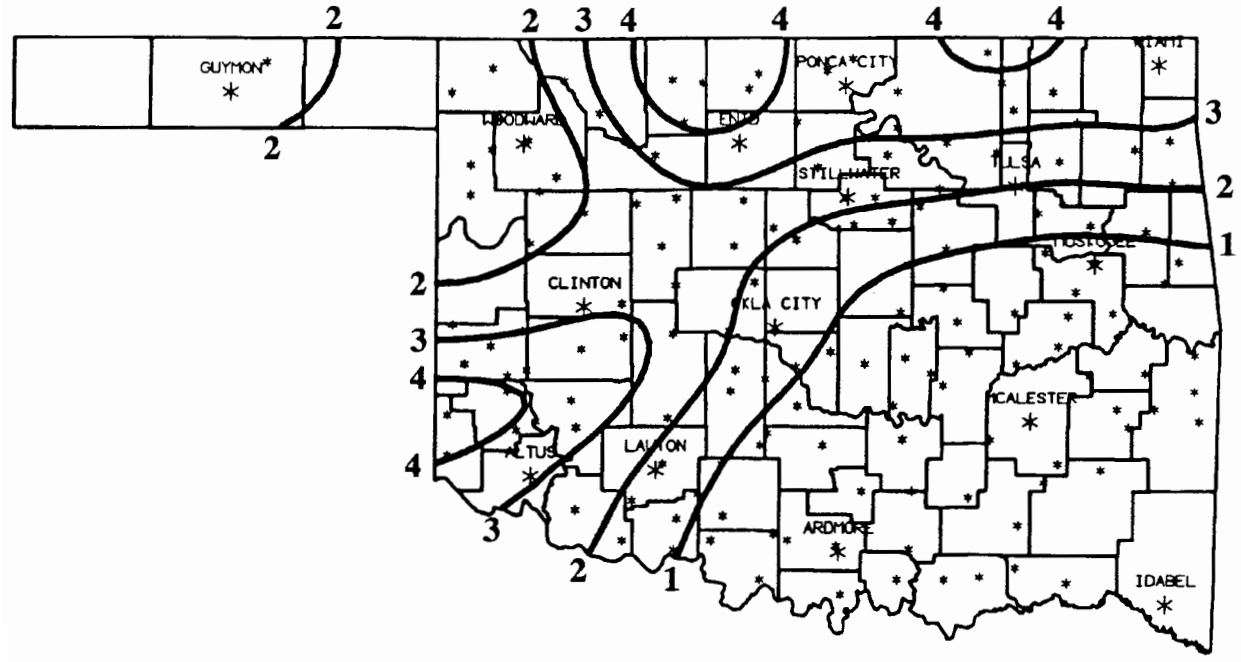
NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ADA	17	8	84.5	31	2.3	102.	31	69.	7	.0	.0	605.0	72.0	.250	31	-2.16	.09	15
ALLEN	147	8	*****	0	*****	****	0	****	0	******	******	******	******	.271	31	*****	.15	8
ARDMORE	292	8	84.8	30	.8	101.	31	72.	10	.0	.0	595.5	6.5	.050	31	-2.08	.05	14
ATOKA DAM	394	8	86.1	21	*****	104.	30	71.	6	.0	******	442.5	******	.110	31	-2.42	.11	30
BOKCHITO	917	8	*****	0	*****	****	0	****	0	******	******	******	******	.250	31	*****	.25	12
CANEY	1437	8	87.3	31	*****	107.	30	72.	10	.0	******	690.0	******	.000	31	*****	.00	31
CENTRAHOMA	1648	8	*****	0	*****	****	0	****	0	******	******	******	******	.400	31	*****	.40	30
CHICKASAW NRA	1745	8	84.0	31	1.9	102.	31	69.	7	.0	.0	590.5	60.5	.190	31	-2.48	.16	14
COLEMAN	2011	8	*****	0	*****	****	0	****	0	******	******	******	******	.000	31	*****	.00	31
COMANCHE	2054	8	*****	0	*****	****	0	****	0	******	******	******	******	.280	31	-1.67	.09	15
DAISY 4 ENE	2354	8	*****	0	*****	****	0	****	0	******	******	******	******	.000	31	-3.43	.00	31
DUNCAN	2660	8	84.3	30	1.2	102.	25	69.	7	.0	.0	578.5	17.5	1.061	30	*****	.27	13
DURANT USDA	2678	8	84.5	31	2.2	102.	30	68.	26	.0	.0	604.0	68.0	.010	31	-2.28	.01	30
ELMORE CITY	2872	8	*****	0	*****	****	0	****	0	******	******	******	******	.150	18	*****	.15	6
FARRIS 3 WNW	3083	8	*****	0	*****	****	0	****	0	******	******	******	******	.000	31	-2.63	.00	31
GRADY	3688	8	*****	0	*****	****	0	****	0	******	******	******	******	.230	31	*****	.23	15
HEALDTON	4001	8	85.2	31	2.3	103.	31	69.	26	.0	.0	625.0	70.0	.001	31	-1.97	.00	15
KETCHUM RANCH	4780	8	*****	0	*****	****	0	****	0	******	******	******	******	.370	31	*****	.14	13
KINGSTON	4865	8	*****	0	*****	****	0	****	0	******	******	******	******	.000	31	-2.11	.00	31
LEHIGH	5108	8	*****	0	*****	****	0	****	0	******	******	******	******	.001	31	*****	.00	30
LINDSAY 2 W	5216	8	84.4	31	1.7	101.	31	68.	7	.0	.0	600.5	51.5	.431	31	-1.63	.26	14
LOCO 6 SE	5247	8	*****	0	*****	****	0	****	0	******	******	******	******	.160	31	*****	.12	23
MADILL	5468	8	85.4	31	2.1	102.	31	70.	10	.0	.0	633.5	66.5	.000	31	-2.19	.00	31
MARIETTA	5563	8	85.7	31	2.5	103.	31	71.	16	.0	.0	642.0	78.0	.000	31	-2.11	.00	31
MARLOW 1 WSW	5581	8	84.0	31	1.7	106.	31	65.	19	.0	.0	588.0	52.0	.790	31	-1.53	.26	15
MCGEE CREEK DAM	5713	8	85.2	31	*****	106.	30	69.	27	.0	******	625.5	******	.000	31	*****	.00	31
PAULS VALLEY	6926	8	85.2	31	1.9	105.	30	69.	20	.0	.0	627.0	60.0	.020	31	-2.24	.02	7
PONTOTOC	7214	8	*****	0	*****	****	0	****	0	******	******	******	******	.040	31	-2.50	.04	14
TISHOMINGO NWLR	8884	8	86.1	21	*****	102.	29	70.	28	.0	******	444.0	******	.000	31	-2.72	.00	31
TUSSY	9032	8	*****	0	*****	****	0	****	0	******	******	******	******	.040	31	*****	.04	7
WAURIKA	9395	8	86.1	31	1.8	104.	31	69.	19	.0	.0	655.5	57.5	.001	31	-1.81	.00	15
WAURIKA DAM	9399	8	85.7	31	*****	104.	31	69.	19	.0	******	641.0	******	.211	31	*****	.18	6

JULY 1993 SUMMARY FOR SOUTHEAST DIVISION (CD9)

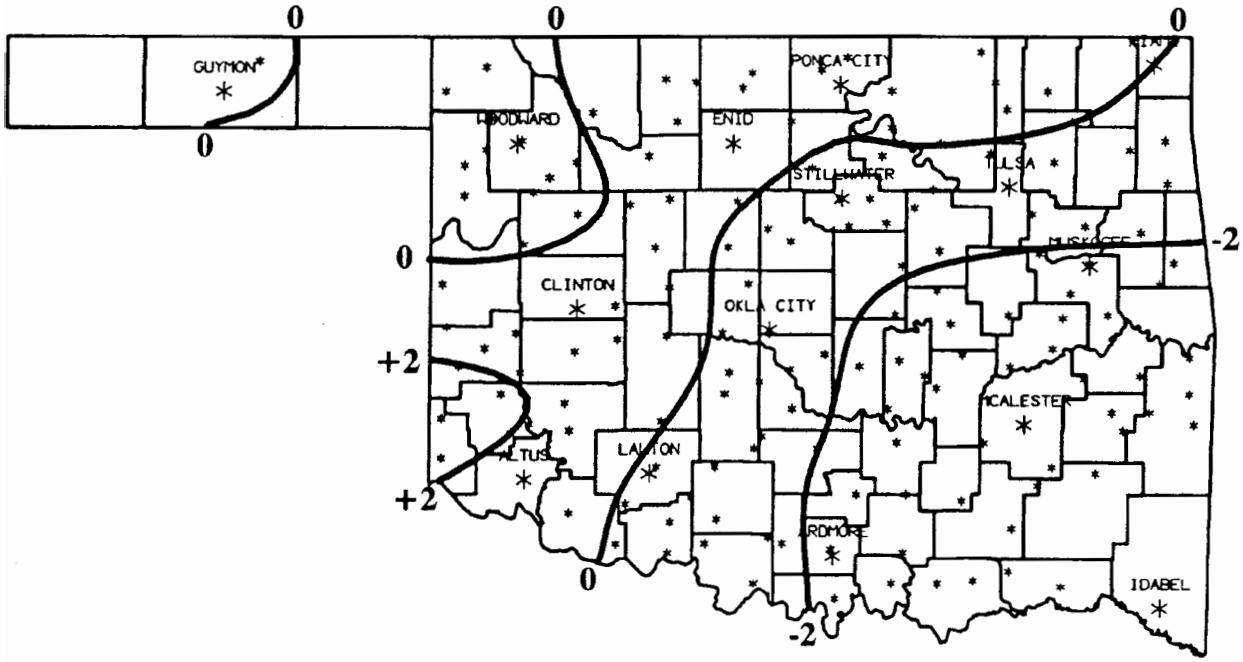
NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ANTLERS	256	9	84.2	31	2.9	103.	29	64.	27	.0	.0	596.0	91.0	.000	31	-3.27	.00	31
BATTIEST 1 SSW	567	9	81.5	31	*****	102.	29	60.	27	.0	******	511.0	******	.550	31	*****	.20	30
BEAR MT TWR	584	9	85.5	31	4.1	105.	29	69.	30	.0	.0	636.0	128.0	.310	31	-3.46	.31	30
BENGAL	670	9	*****	0	*****	****	0	****	0	******	******	******	******	1.340	31	*****	1.24	21
BOSWELL 4 NNW	980	9	84.7	31	2.8	105.	29	67.	10	.0	.0	611.5	87.5	.001	31	-2.52	.00	29
BROKEN BOW 1 N	1162	9	*****	0	*****	****	0	****	0	******	******	******	******	.170	31	-3.36	.17	29
BROKEN BOW DAM	1168	9	83.4	31	2.9	105.	29	64.	28	.0	.0	569.5	88.5	.030	31	-3.87	.03	30
CARNASAW TWR	1499	9	*****	0	*****	****	0	****	0	******	******	******	******	.000	31	-4.01	.00	31
CARTER TWR	1544	9	*****	0	*****	****	0	****	0	******	******	******	******	1.400	31	-2.59	.76	30
FANSHAWE	3065	9	*****	0	*****	****	0	****	0	******	******	******	******	.160	31	-3.45	.16	21
HEAVENER 1 SE	4008	9	*****	0	*****	****	0	****	0	******	******	******	******	.043	31	-3.40	.04	21
HEE MT TWR	4017	9	*****	0	*****	****	0	****	0	******	******	******	******	.070	31	-3.75	.07	30
HUGO	4384	9	85.6	31	3.3	105.	29	69.	10	.0	.0	637.5	101.5	.110	31	-2.68	.11	30
IDABEL	4451	9	84.7	31	3.8	105.	30	66.	10	.0	.0	610.0	117.0	.010	31	-3.33	.01	30
POTEAU W W	7254	9	84.9	31	*****	105.	31	64.	9	.0	******	617.5	******	.000	31	*****	.00	31
SMITHVILLE 1 W	8285	9	81.7	31	2.5	103.	31	60.	27	.0	.0	518.0	78.0	.001	31	-4.31	.00	29
SPIRO	8416	9	*****	0	*****	****	0	****	0	******	******	******	******	.220	31	-3.02	.09	30
TUSKAHOMA	9023	9	85.1	30	3.4	106.	29	65.	27	.0	.0	602.5	84.5	.070	31	-3.64	.07	30
VALLIANT 3 W	9118	9	*****	0	*****	****	0	****	0	******	******	******	******	.060	31	-3.40	.06	30
WILBURTON 9 ENE	9634	9	85.3	31	4.1	108.	31	65.	27	.0	.0	629.0	127.0	.001	31	-3.76	.00	21

JULY 1993 CLIMATE DIVISION SUMMARY

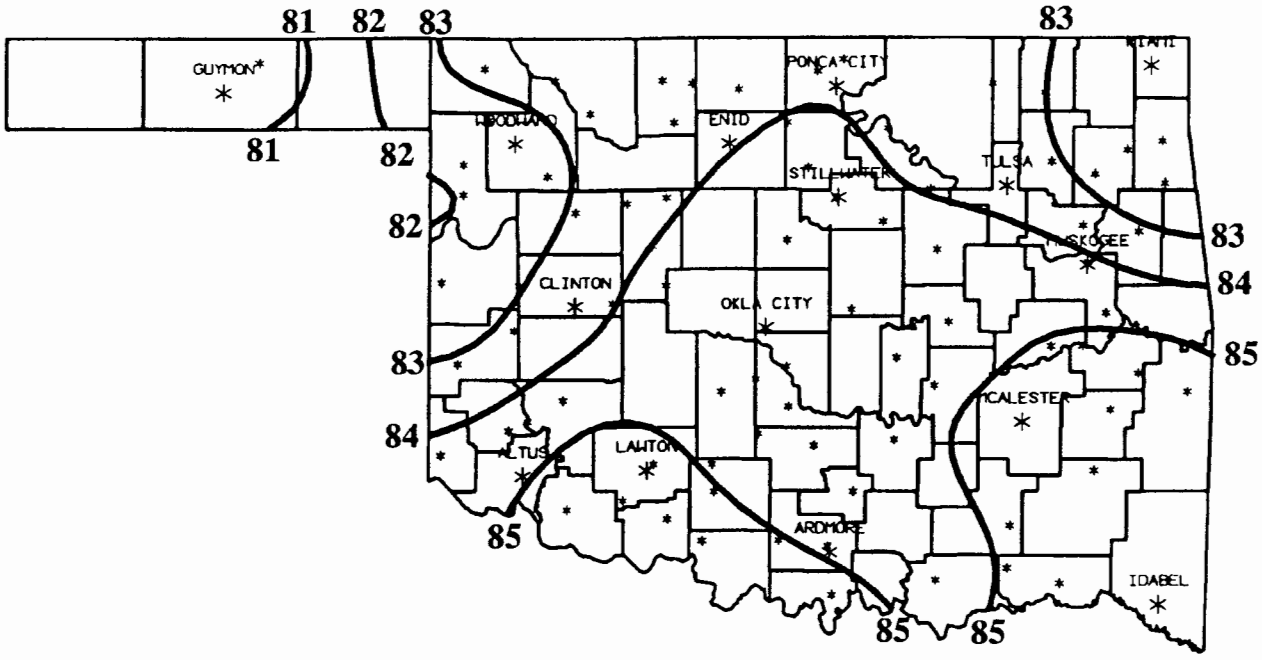
CLIMATE DIV	MEAN TEMP	NUM STA	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEGREE DAYS	DEV FROM NORM	COOL DEGREE DAYS	DEV FROM NORM	TOT PPT	NUM STA	DEV FROM NORM	MAX 24-HR	DAY
1	80.6	9	.4	109.0	30	54.0	22	.0	.0	483.1	13.4	1.54	12	-.91	2.22	21
2	83.7	15	1.0	106.0	31	62.0	11	.0	.0	579.4	30.6	3.12	24	.31	2.50	14
3	83.2	15	1.8	104.0	31	57.0	23	.0	.0	562.6	53.8	3.08	25	.15	3.90	12
4	83.4	11	1.1	104.0	31	65.0	14	.0	.0	568.4	31.1	2.76	21	.77	2.97	7
5	84.4	13	2.1	107.0	31	67.0	20	.0	.0	599.8	61.5	1.16	33	-1.37	2.00	19
6	84.6	12	2.9	108.0	31	64.0	11	.0	.0	603.3	87.2	.33	30	-2.62	1.48	19
7	85.4	10	1.6	107.0	25	62.0	29	.0	.0	629.0	48.1	2.87	21	.88	6.43	7
8	85.1	15	2.1	107.0	30	65.0	19	.0	.0	620.1	64.0	.14	30	-2.20	.40	30
9	84.2	11	3.1	108.0	31	60.0	27	.0	.0	594.4	93.6	.23	20	-3.33	1.24	21



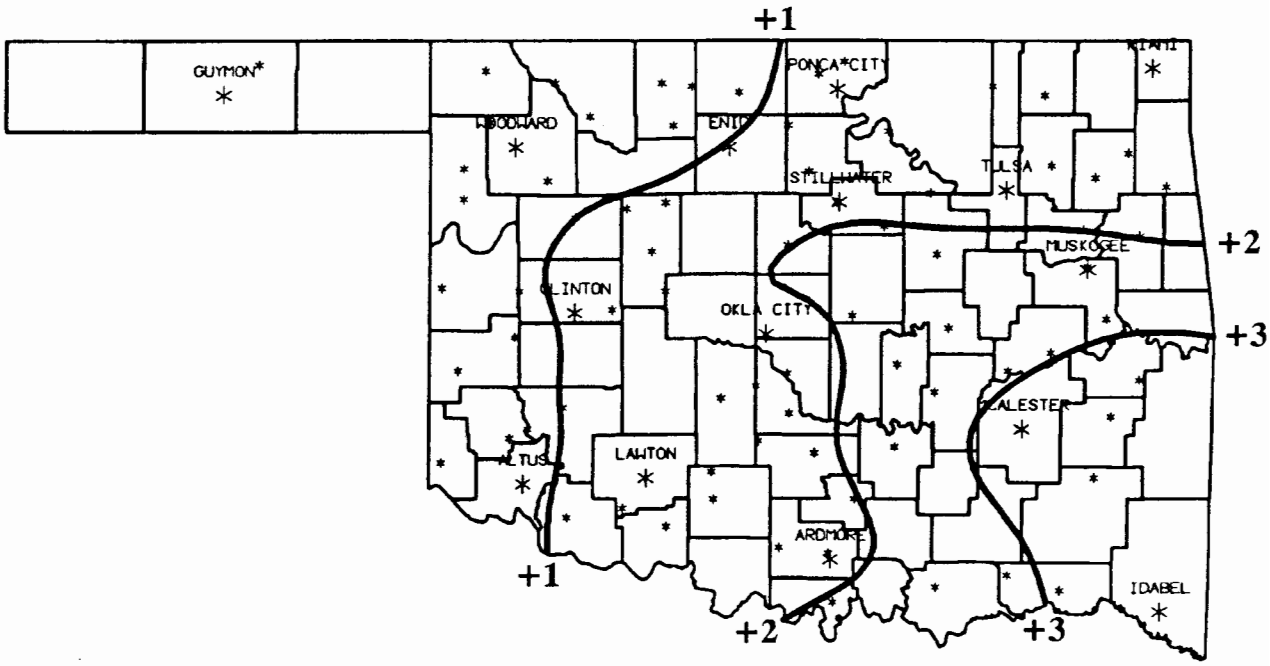
JULY 1993 TOTAL PRECIPITATION
(Inches)



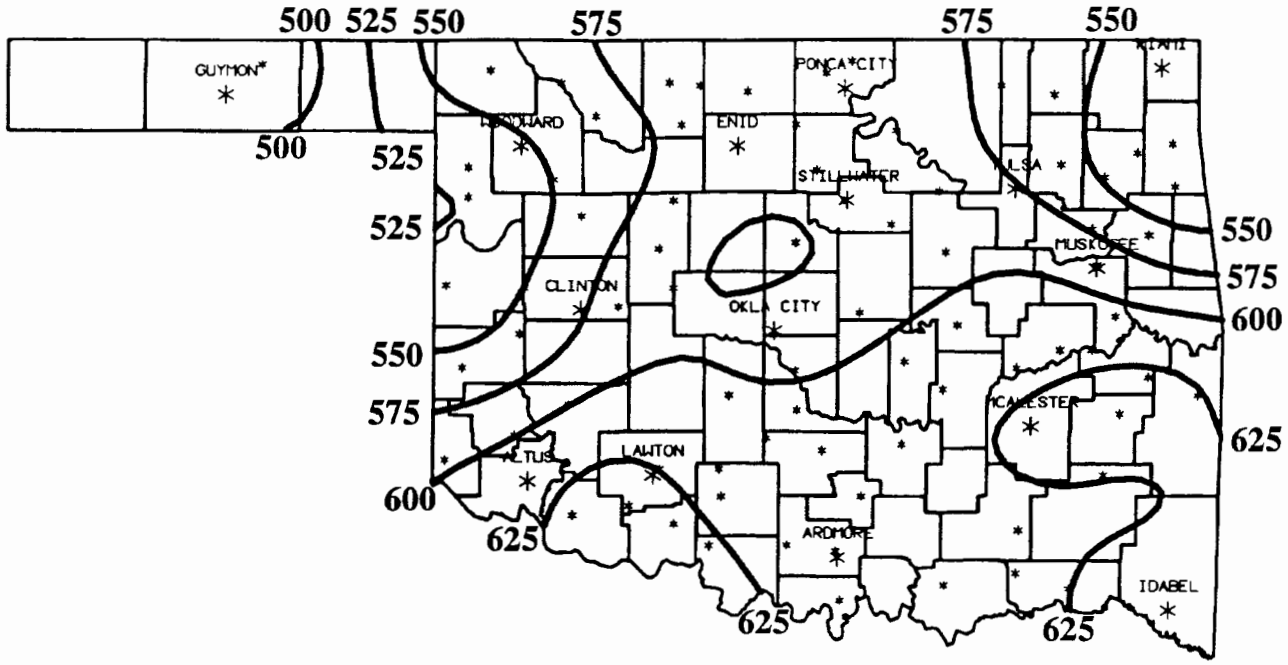
JULY 1993 DEVIATION FROM NORMAL PRECIPITATION
(Inches)



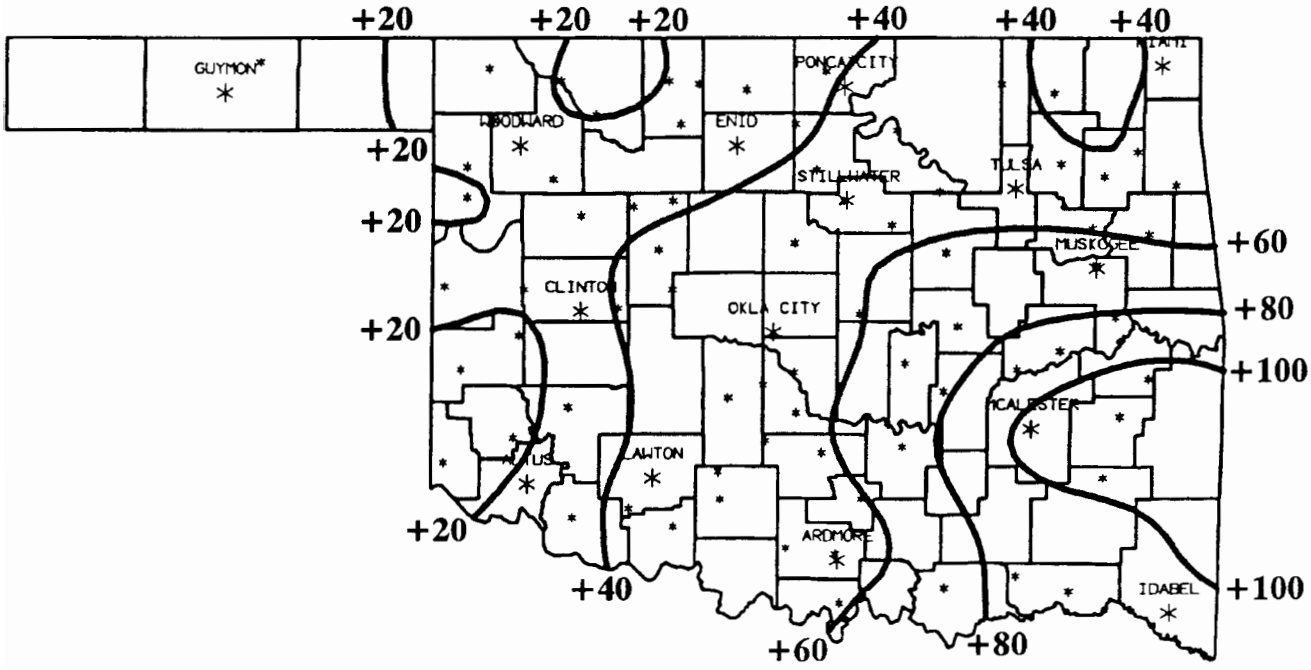
JULY 1993 AVERAGE MONTHLY TEMPERATURES
(Degrees F)



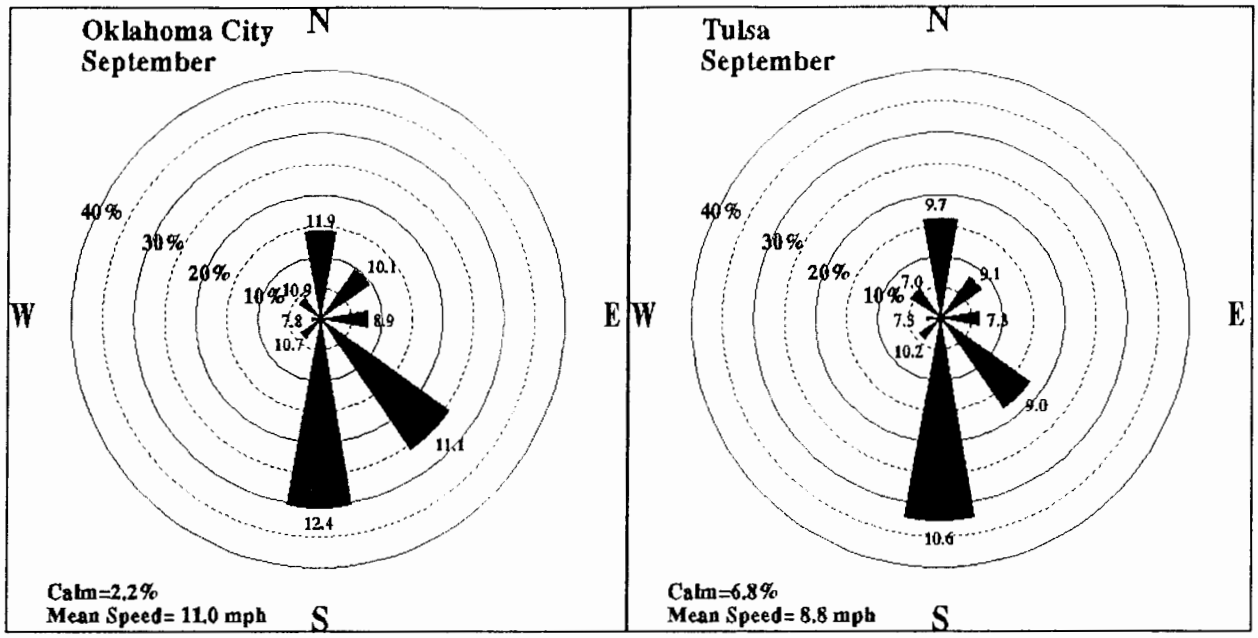
JULY 1993 DEVIATION FROM NORMAL TEMPERATURES
(Degrees F)



JULY 1993 COOLING DEGREE DAYS



JULY 1993 DEVIATION FROM NORMAL COOLING DEGREE DAYS



September 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.

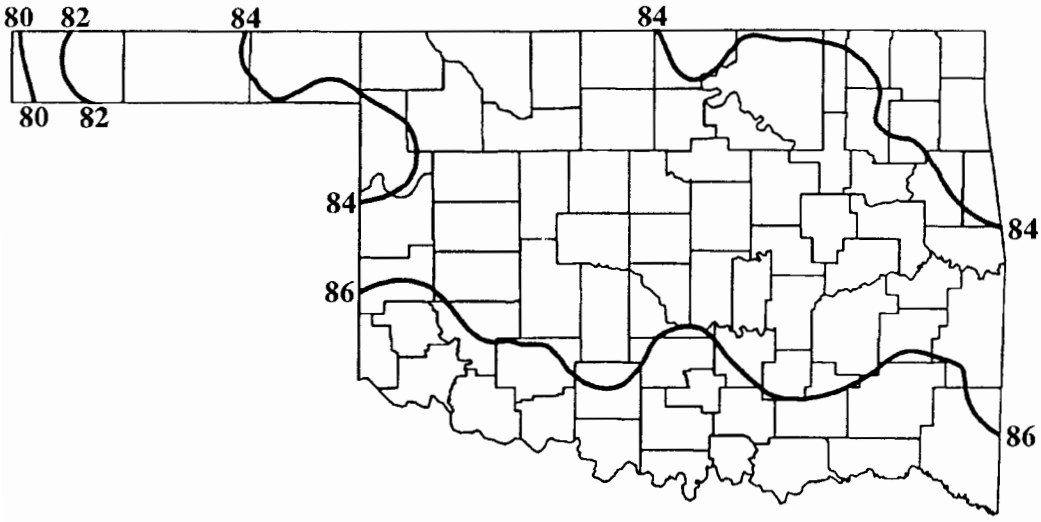
SEPTEMBER 1993 SUNRISE AND SUNSET

OKLAHOMA CITY

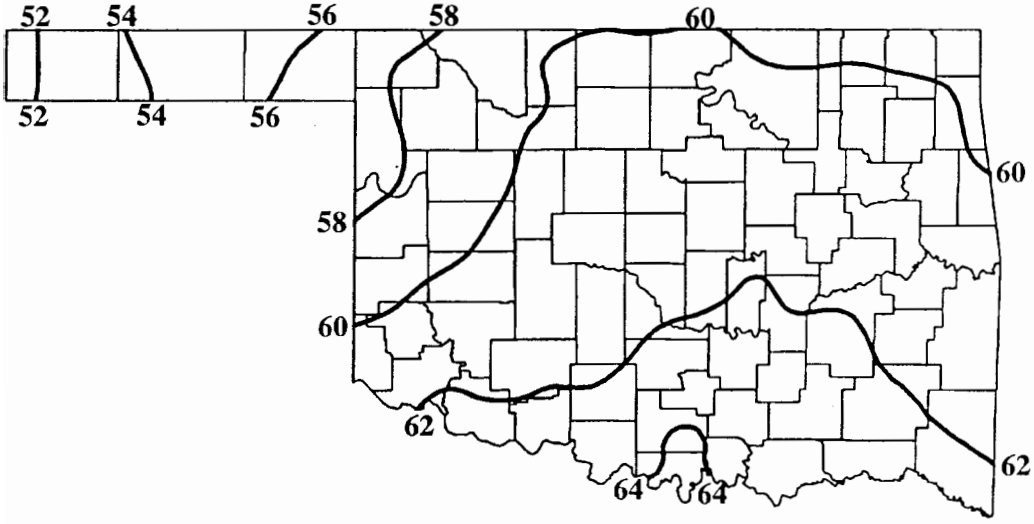
DATE	SUNRISE	SUNSET	DAYLIGHT
93 9 1	7: 2AM	7:59PM CDT	12 hrs 58 mins
93 9 2	7: 2AM	7:58PM CDT	12 hrs 56 mins
93 9 3	7: 3AM	7:56PM CDT	12 hrs 53 mins
93 9 4	7: 4AM	7:55PM CDT	12 hrs 51 mins
93 9 5	7: 4AM	7:54PM CDT	12 hrs 49 mins
93 9 6	7: 5AM	7:52PM CDT	12 hrs 47 mins
93 9 7	7: 6AM	7:51PM CDT	12 hrs 45 mins
93 9 8	7: 7AM	7:49PM CDT	12 hrs 43 mins
93 9 9	7: 7AM	7:48PM CDT	12 hrs 41 mins
93 910	7: 8AM	7:46PM CDT	12 hrs 38 mins
93 911	7: 9AM	7:45PM CDT	12 hrs 36 mins
93 912	7: 9AM	7:44PM CDT	12 hrs 34 mins
93 913	7:10AM	7:42PM CDT	12 hrs 32 mins
93 914	7:11AM	7:41PM CDT	12 hrs 30 mins
93 915	7:12AM	7:39PM CDT	12 hrs 28 mins
93 916	7:12AM	7:38PM CDT	12 hrs 25 mins
93 917	7:13AM	7:36PM CDT	12 hrs 23 mins
93 918	7:14AM	7:35PM CDT	12 hrs 21 mins
93 919	7:15AM	7:33PM CDT	12 hrs 19 mins
93 920	7:15AM	7:32PM CDT	12 hrs 16 mins
93 921	7:16AM	7:30PM CDT	12 hrs 14 mins
93 922	7:17AM	7:29PM CDT	12 hrs 12 mins
93 923	7:18AM	7:27PM CDT	12 hrs 10 mins
93 924	7:18AM	7:26PM CDT	12 hrs 8 mins
93 925	7:19AM	7:24PM CDT	12 hrs 5 mins
93 926	7:20AM	7:23PM CDT	12 hrs 3 mins
93 927	7:21AM	7:21PM CDT	12 hrs 1 mins
93 928	7:21AM	7:20PM CDT	11 hrs 59 mins
93 929	7:22AM	7:19PM CDT	11 hrs 57 mins
93 930	7:23AM	7:17PM CDT	11 hrs 54 mins

TULSA

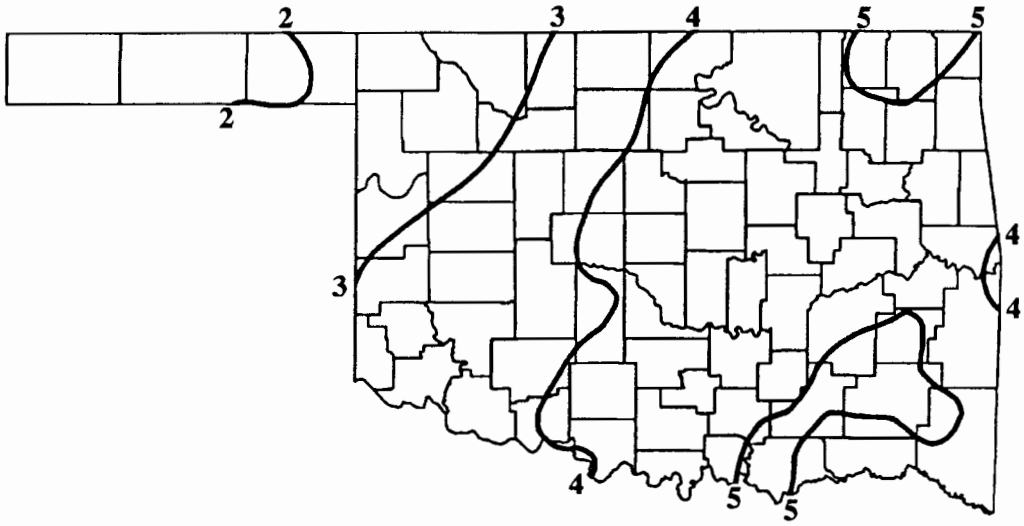
DATE	SUNRISE	SUNSET	DAYLIGHT
93 9 1	6:54AM	7:53PM CDT	12 hrs 59 mins
93 9 2	6:55AM	7:52PM CDT	12 hrs 57 mins
93 9 3	6:56AM	7:50PM CDT	12 hrs 55 mins
93 9 4	6:56AM	7:49PM CDT	12 hrs 53 mins
93 9 5	6:57AM	7:48PM CDT	12 hrs 50 mins
93 9 6	6:58AM	7:46PM CDT	12 hrs 48 mins
93 9 7	6:59AM	7:45PM CDT	12 hrs 46 mins
93 9 8	6:59AM	7:43PM CDT	12 hrs 44 mins
93 9 9	7: 0AM	7:42PM CDT	12 hrs 42 mins
93 910	7: 1AM	7:40PM CDT	12 hrs 39 mins
93 911	7: 2AM	7:39PM CDT	12 hrs 37 mins
93 912	7: 2AM	7:37PM CDT	12 hrs 35 mins
93 913	7: 3AM	7:36PM CDT	12 hrs 33 mins
93 914	7: 4AM	7:34PM CDT	12 hrs 30 mins
93 915	7: 5AM	7:33PM CDT	12 hrs 28 mins
93 916	7: 5AM	7:31PM CDT	12 hrs 26 mins
93 917	7: 6AM	7:30PM CDT	12 hrs 24 mins
93 918	7: 7AM	7:28PM CDT	12 hrs 21 mins
93 919	7: 8AM	7:27PM CDT	12 hrs 19 mins
93 920	7: 8AM	7:25PM CDT	12 hrs 17 mins
93 921	7: 9AM	7:24PM CDT	12 hrs 15 mins
93 922	7:10AM	7:22PM CDT	12 hrs 12 mins
93 923	7:11AM	7:21PM CDT	12 hrs 10 mins
93 924	7:11AM	7:19PM CDT	12 hrs 8 mins
93 925	7:12AM	7:18PM CDT	12 hrs 5 mins
93 926	7:13AM	7:16PM CDT	12 hrs 3 mins
93 927	7:14AM	7:15PM CDT	12 hrs 1 mins
93 928	7:15AM	7:13PM CDT	11 hrs 59 mins
93 929	7:15AM	7:12PM CDT	11 hrs 56 mins
93 930	7:16AM	7:10PM CDT	11 hrs 54 mins



September Normal Daily Maximum Temperatures (°F)



September Normal Daily Minimum Temperatures (°F)



September Normal Monthly Precipitation (inches)

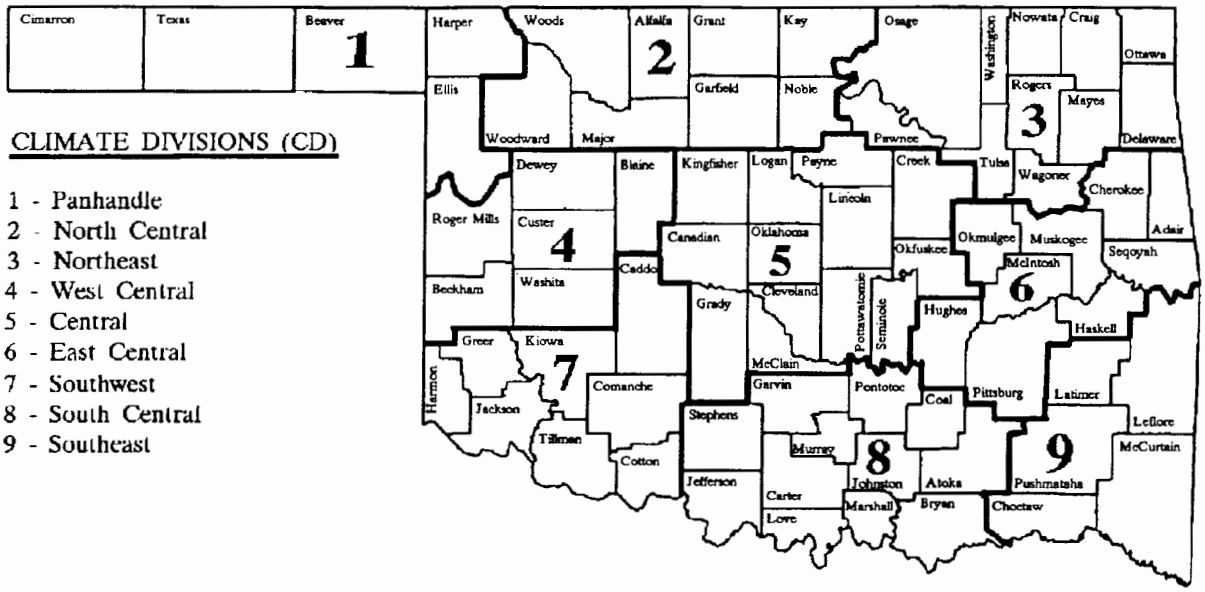
90-DAY NATIONAL WEATHER SERVICE OUTLOOK

(AUGUST 1993 - OCTOBER 1993)

Precipitation - Near Normal Statewide

Temperature - Near 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 that 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.

OKLAHOMA CITY CLIMATE CALENDAR

September 1993

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).

Normal 1		Actual	Normal 2		Actual	Normal 3		Actual	Normal 4		Actual	Normal 5		Actual	Normal 6		Actual	Normal 7		Actual
89.8	max		88.5	max		89.8	max		88.7	max		88.5	max		89.2	max		88.2	max	
66.4	min		66.4	min		65.8	min		66.4	min		66.1	min		66.0	min		66.0	min	
.15	ppt		.12	ppt		.25	ppt		.07	ppt		.05	ppt		.03	ppt		.07	ppt	
0	hdd		0	hdd		0	hdd		0	hdd		0	hdd		0	hdd		0	hdd	
13	cdd		13	cdd		13	cdd		13	cdd		12	cdd		13	cdd		12	cdd	
Highest Max	105-1951		Highest Max	105-1951		Highest Max	105-1947		Highest Max	106-1947		Highest Max	103-1931		Highest Max	106-1947		Highest Max	102-1936	
Lowest Max	69-1932		Lowest Max	68-1967		Lowest Max	71-1974		Lowest Max	66-1961		Lowest Max	64-1962		Lowest Max	71-1918		Lowest Max	66-1962	
Lowest Min	53-1956		Lowest Min	52-1974		Lowest Min	47-1974		Lowest Min	46-1974		Lowest Min	47-1974		Lowest Min	51-1974		Lowest Min	49-1898	
Highest Min	80-1951		Highest Min	78-1961		Highest Min	80-1939		Highest Min	79-1970		Highest Min	77-1939		Highest Min	76-1970		Highest Min	77-1936	
Greatest ppt	2.53-1974		Greatest ppt	4.08-1991		Greatest ppt	3.16-1925		Greatest ppt	1.74-1940		Greatest ppt	1.65-1992		Greatest ppt	2.20-1895		Greatest ppt	1.37-1905	

Normal 8		Actual	Normal 9		Actual	Normal 10		Actual	Normal 11		Actual	Normal 12		Actual	Normal 13		Actual	Normal 14		Actual
88.1	max		87.5	max		86.3	max		87.0	max		85.2	max		83.9	max		83.3	max	
65.0	min		64.6	min		63.6	min		63.4	min		63.3	min		61.8	min		62.1	min	
.03	ppt		.06	ppt		.09	ppt		.04	ppt		.22	ppt		.18	ppt		.20	ppt	
0	hdd		0	hdd		0	hdd		0	hdd		0	hdd		1	hdd		1	hdd	
12	cdd		11	cdd		10	cdd		10	cdd		10	cdd		9	cdd		9	cdd	
Highest Max	101-1922		Highest Max	99-1970		Highest Max	101-1936		Highest Max	100-1909		Highest Max	102-1930		Highest Max	102-1965		Highest Max	102-1965	
Lowest Max	75-1957		Lowest Max	67-1929		Lowest Max	64-1929		Lowest Max	60-1898		Lowest Max	64-1989		Lowest Max	53-1989		Lowest Max	58-1975	
Lowest Min	48-1957		Lowest Min	51-1962		Lowest Min	47-1962		Lowest Min	48-1940		Lowest Min	45-1898		Lowest Min	45-1902		Lowest Min	47-1961	
Highest Min	80-1896		Highest Min	77-1896		Highest Min	77-1938		Highest Min	77-1936		Highest Min	78-1930		Highest Min	78-1978		Highest Min	77-1965	
Greatest ppt	2.66-1941		Greatest ppt	1.88-1891		Greatest ppt	2.40-1925		Greatest ppt	2.36-1906		Greatest ppt	3.03-1961		Greatest ppt	1.88-1985		Greatest ppt	3.61-1957	

Normal 15		Actual	Normal 16		Actual	Normal 17		Actual	Normal 18		Actual	Normal 19		Actual	Normal 20		Actual	Normal 21		Actual
83.2	max		83.6	max		82.3	max		84.5	max		83.9	max		83.8	max		81.6	max	
62.5	min		62.2	min		62.2	min		62.0	min		62.5	min		61.1	min		60.7	min	
.12	ppt		.12	ppt		.14	ppt		.09	ppt		.07	ppt		.17	ppt		.14	ppt	
1	hdd		1	hdd		1	hdd		1	hdd		0	hdd		1	hdd		1	hdd	
9	cdd		8	cdd		8	cdd		9	cdd		9	cdd		8	cdd		7	cdd	
Highest Max	100-1965		Highest Max	101-1978		Highest Max	99-1972		Highest Max	99-1952		Highest Max	98-1954		Highest Max	100-1954		Highest Max	97-1980	
Lowest Max	57-1903		Lowest Max	59-1903		Lowest Max	58-1973		Lowest Max	53-1971		Lowest Max	56-1971		Lowest Max	52-1896		Lowest Max	61-1934	
Lowest Min	46-1916		Lowest Min	44-1903		Lowest Min	44-1903		Lowest Min	42-1981		Lowest Min	44-1971		Lowest Min	41-1971		Lowest Min	39-1983	
Highest Min	76-1956		Highest Min	76-1955		Highest Min	78-1978		Highest Min	78-1978		Highest Min	76-1978		Highest Min	76-1954		Highest Min	76-1931	
Greatest ppt	2.35-1925		Greatest ppt	1.97-1991		Greatest ppt	1.42-1936		Greatest ppt	3.10-1923		Greatest ppt	1.81-1942		Greatest ppt	3.82-1990		Greatest ppt	2.04-1990	

Normal 22		Actual	Normal 23		Actual	Normal 24		Actual	Normal 25		Actual	Normal 26		Actual	Normal 27		Actual	Normal 28		Actual
82.3	max		81.1	max		80.4	max		80.9	max		80.3	max		80.5	max		80.0	max	
59.8	min		59.0	min		58.3	min		58.7	min		58.2	min		58.5	min		58.0	min	
.27	ppt		.06	ppt		.17	ppt		.06	ppt		.15	ppt		.11	ppt		.05	ppt	
1	hdd		1	hdd		2	hdd		1	hdd		1	hdd		2	hdd		2	hdd	
7	cdd		6	cdd		6	cdd		6	cdd		5	cdd		6	cdd		6	cdd	
Highest Max	96-1956		Highest Max	97-1931		Highest Max	98-1939		Highest Max	97-1939		Highest Max	98-1977		Highest Max	96-1953		Highest Max	104-1953	
Lowest Max	62-1915		Lowest Max	58-1925		Lowest Max	56-1974		Lowest Max	53-1926		Lowest Max	46-1926		Lowest Max	47-1927		Lowest Max	53-1984	
Lowest Min	45-1975		Lowest Min	40-1895		Lowest Min	36-1989		Lowest Min	41-1989		Lowest Min	35-1912		Lowest Min	38-1942		Lowest Min	37-1896	
Highest Min	76-1931		Highest Min	75-1931		Highest Min	74-1958		Highest Min	74-1933		Highest Min	72-1923		Highest Min	72-1923		Highest Min	73-1977	
Greatest ppt	7.53-1970		Greatest ppt	1.47-1988		Greatest ppt	3.87-1959		Greatest ppt	1.41-1893		Greatest ppt	1.74-1973		Greatest ppt	1.75-1936		Greatest ppt	2.88-1945	

Normal 29		Actual	Normal 30		Actual
79.8	max		79.2	max	
56.9	min		55.1	min	
.10	ppt		.09	ppt	
2	hdd		2	hdd	
5	cdd		5	cdd	
Highest Max	98-1953		Highest Max	100-1977	
Lowest Max	47-1945		Lowest Max	54-1985	
Lowest Min	39-1916		Lowest Min	36-1895	
Highest Min	71-1933		Highest Min	72-1977	
Greatest ppt	2.99-1986		Greatest ppt	1.79-1986	

SEPTEMBER AVERAGES

TEMPERATURE	:	73.2°F
PRECIPITATION	:	3.47"
HEATING DEGREE DAYS	:	22
COOLING DEGREE DAYS	:	270

TULSA CLIMATE CALENDAR

September 1993

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.

Normal 1		Actual	Normal 2		Actual	Normal 3		Actual	Normal 4		Actual	Normal 5		Actual	Normal 6		Actual	Normal 7		Actual
90.0	max		89.0	max		89.0	max		89.0	max		88.0	max		89.0	max		87.0	max	
67.0	min		67.0	min		67.0	min		67.0	min		67.0	min		67.0	min		67.0	min	
.16	ppt		.18	ppt		.19	ppt		.22	ppt		.10	ppt		.16	ppt		.06	ppt	
0	hdd		0	hdd		0	hdd		0	hdd		0	hdd		0	hdd		0	hdd	
14	cdd		13	cdd		14	cdd		14	cdd		13	cdd		13	cdd		12	cdd	
Highest Max		105-1985	Highest Max		109-1939	Highest Max		109-1939	Highest Max		107-1947	Highest Max		107-1913	Highest Max		107-1907	Highest Max		105-1936
Lowest Max		77-1974	Lowest Max		58-1974	Lowest Max		70-1974	Lowest Max		66-1967	Lowest Max		70-1962	Lowest Max		69-1962	Lowest Max		65-1986
Lowest Min		48-1967	Lowest Min		51-1974	Lowest Min		47-1934	Lowest Min		46-1974	Lowest Min		49-1974	Lowest Min		52-1974	Lowest Min		50-1918
Highest Min		78-1982	Highest Min		78-1985	Highest Min		76-1953	Highest Min		78-1983	Highest Min		79-1985	Highest Min		80-1990	Highest Min		79-1985
Greatest ppt		2.24-1974	Greatest ppt		2.06-1974	Greatest ppt		3.27-1962	Greatest ppt		2.80-1971	Greatest ppt		1.16-1977	Greatest ppt		4.05-1971	Greatest ppt		1.30-1962

Normal 8		Actual	Normal 9		Actual	Normal 10		Actual	Normal 11		Actual	Normal 12		Actual	Normal 13		Actual	Normal 14		Actual
88.0	max		88.0	max		87.0	max		87.0	max		86.0	max		84.0	max		84.0	max	
66.0	min		65.0	min		64.0	min		64.0	min		63.0	min		62.0	min		63.0	min	
.07	ppt		.13	ppt		.03	ppt		.14	ppt		.15	ppt		.16	ppt		.25	ppt	
0	hdd		0	hdd		0	hdd		0	hdd		0	hdd		0	hdd		1	hdd	
12	cdd		12	cdd		10	cdd		10	cdd		10	cdd		9	cdd		10	cdd	
Highest Max		103-1925	Highest Max		102-1909	Highest Max		105-1936	Highest Max		103-1909	Highest Max		102-1930	Highest Max		103-1965	Highest Max		103-1965
Lowest Max		75-1949	Lowest Max		77-1962	Lowest Max		75-1989	Lowest Max		74-1957	Lowest Max		68-1989	Lowest Max		55-1989	Lowest Max		57-1989
Lowest Min		50-1956	Lowest Min		51-1943	Lowest Min		48-1968	Lowest Min		45-1940	Lowest Min		48-1959	Lowest Min		49-1960	Lowest Min		46-1961
Highest Min		78-1983	Highest Min		76-1991	Highest Min		75-1991	Highest Min		77-1983	Highest Min		77-1991	Highest Min		77-1978	Highest Min		77-1956
Greatest ppt		1.45-1984	Greatest ppt		2.67-1951	Greatest ppt		.74-1958	Greatest ppt		1.88-1977	Greatest ppt		1.75-1988	Greatest ppt		2.03-1961	Greatest ppt		2.15-1957

Normal 15		Actual	Normal 16		Actual	Normal 17		Actual	Normal 18		Actual	Normal 19		Actual	Normal 20		Actual	Normal 21		Actual
83.0	max		84.0	max		83.0	max		85.0	max		85.0	max		85.0	max		82.0	max	
62.0	min		63.0	min		63.0	min		62.0	min		64.0	min		62.0	min		61.0	min	
.25	ppt		.25	ppt		.09	ppt		.11	ppt		.20	ppt		.07	ppt		.07	ppt	
1	hdd		0	hdd		1	hdd		1	hdd		0	hdd		0	hdd		1	hdd	
8	cdd		9	cdd		9	cdd		9	cdd		10	cdd		9	cdd		8	cdd	
Highest Max		103-1956	Highest Max		103-1956	Highest Max		104-1931	Highest Max		100-1952	Highest Max		100-1954	Highest Max		102-1954	Highest Max		98-1980
Lowest Max		60-1949	Lowest Max		67-1966	Lowest Max		61-1971	Lowest Max		56-1971	Lowest Max		58-1971	Lowest Max		55-1991	Lowest Max		62-1975
Lowest Min		46-1961	Lowest Min		45-1934	Lowest Min		44-1981	Lowest Min		42-1981	Lowest Min		45-1991	Lowest Min		39-1938	Lowest Min		38-1918
Highest Min		79-1956	Highest Min		77-1956	Highest Min		79-1978	Highest Min		80-1978	Highest Min		79-1954	Highest Min		76-1954	Highest Min		78-1980
Greatest ppt		2.87-1962	Greatest ppt		5.78-1971	Greatest ppt		1.32-1971	Greatest ppt		2.39-1971	Greatest ppt		4.30-1974	Greatest ppt		1.05-1990	Greatest ppt		1.56-1965

Normal 22		Actual	Normal 23		Actual	Normal 24		Actual	Normal 25		Actual	Normal 26		Actual	Normal 27		Actual	Normal 28		Actual
82.0	max		82.0	max		81.0	max		81.0	max		82.0	max		80.0	max		80.0	max	
60.0	min		59.0	min		59.0	min		60.0	min		59.0	min		59.0	min		58.0	min	
.16	ppt		.13	ppt		.14	ppt		.11	ppt		.14	ppt		.10	ppt		.03	ppt	
1	hdd		1	hdd		1	hdd		1	hdd		1	hdd		1	hdd		2	hdd	
7	cdd		6	cdd		6	cdd		6	cdd		7	cdd		6	cdd		6	cdd	
Highest Max		99-1921	Highest Max		101-1931	Highest Max		99-1931	Highest Max		99-1939	Highest Max		96-1938	Highest Max		96-1954	Highest Max		102-1953
Lowest Max		61-1989	Lowest Max		63-1974	Lowest Max		58-1974	Lowest Max		66-1962	Lowest Max		57-1984	Lowest Max		54-1984	Lowest Max		55-1984
Lowest Min		44-1918	Lowest Min		44-1989	Lowest Min		37-1989	Lowest Min		43-1926	Lowest Min		37-1912	Lowest Min		35-1942	Lowest Min		38-1908
Highest Min		73-1980	Highest Min		73-1986	Highest Min		76-1958	Highest Min		75-1986	Highest Min		73-1981	Highest Min		73-1977	Highest Min		73-1986
Greatest ppt		3.78-1970	Greatest ppt		1.90-1968	Greatest ppt		1.84-1959	Greatest ppt		2.07-1959	Greatest ppt		1.70-1973	Greatest ppt		1.09-1961	Greatest ppt		.58-1987

Normal 29		Actual	Normal 30		Actual
80.0	max		79.0	max	
57.0	min		55.0	min	
.16	ppt		.09	ppt	
2	hdd		2	hdd	
6	cdd		5	cdd	
Highest Max		98-1953	Highest Max		99-1979
Lowest Max		57-1984	Lowest Max		59-1959
Lowest Min		37-1916	Lowest Min		35-1984
Highest Min		73-1955	Highest Min		72-1977
Greatest ppt		4.45-1986	Greatest ppt		1.85-1959

SEPTEMBER AVERAGES

TEMPERATURE	:	73.6°F
PRECIPITATION	:	4.10"
HEATING DEGREE DAYS	:	17
COOLING DEGREE DAYS	:	283