OKLAHOMA
MONTHLY SUMMARY
JULY 1991

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*** PLEASE POST ***

MOVING NOTICE

We are pleased to announce that the Oklahoma Climatological Survey will move to its permanent location in the Energy Center Tower on July 25, 1991.

Please note our new campus address:

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Ken Crawford

Ken Crawford, Director
Oklahoma Climate Survey

JULY 1991 OKLAHOMA SUMMARY

Despite many daily temperature readings above 100 degrees, the month of July finished below normal in temperature. Preliminary reports indicate a statewide-averaged temperature of 82.3 degrees, which is 0.2 degree below normal. The year-to-date ranking rose from the 14th to the 13th warmest among 100 years of record-keeping in Oklahoma, 1.8 degrees above normal. Periods of heavy rain in regions of western Oklahoma helped ease dry conditions from the beginning of the year, but drought became a big story in northeastern parts of the state. Northeast Oklahoma (climate division 3) received only 44% of its normal July precipitation, and even that rainfall was sporadic. Bixby reported 3.50 inches during July while Tulsa's airport, only 15 miles to the north reported a monthly rainfall total of 0.35 inches. The state-averaged total of 2.46 inches was 0.50 inch below normal, and dropped the year-to-date total to 0.56 inch behind normal.

A frontal passage early in the month was responsible for locally heavy precipitation in central Oklahoma. Crescent reported 3.25 inches of rain on the 3rd, with Piedmont and El Reno also picking up over three inches. Dry conditions behind the front allowed temperatures to rise statewide from the 5th through the 11th. Every reporting station during the period had a maximum temperature of at least 90 degrees, with many stations reporting temperatures in the 100's.

A slow-moving cold front began making its way through the state on the 11th, triggering storms ahead of its arrival. Rainfall in excess of two inches was reported at several locations as the front passed slowly eastward from the 11th to the 14th. Cloudy skies in northwest Oklahoma obscured the solar eclipse for many viewers on the 11th. Violent thunderstorms were spawned in the warm, moist air ahead of the front. A tornado touched down briefly near Orienta on the 11th. Other tornadoes on the 12th near Hitchcock, Okeene and Adair produced minor damage. Winds in excess of 60 miles per hour at Enid on the 11th disrupted the annual Summerfest, destroying several large tents.

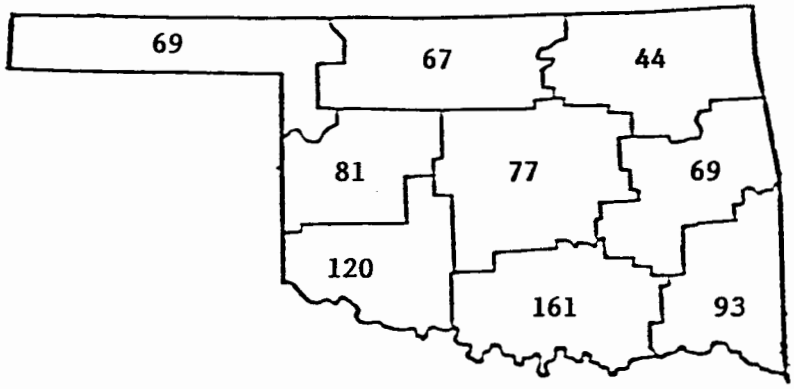
Despite the damage caused by the storms, the front provided welcome relief to northwest Oklahoma where maximum temperatures were dropped into the 70's from the 13th-15th. The 71 degree maximum temperatures reported at Goodwell on both the 14th and 15th set records for the coolest maximum temperatures for those dates. However the front never made it to southern Oklahoma, which continued to report temperatures above 100 degrees.

As the influence of the cold front waned in the northern parts of the state, temperatures again rose into the 100's. Alva reported the state's warmest daily maximum temperature for four consecutive days, with readings of 106 on the 16th-18th and 109 on the 19th. The highest readings of the month at most stations occurred during the period from the 19th to the 22nd. The 109 degree reading at Alva was tied at Mutual on the 20th and Great Salt Plains on the 22nd.

A strong cold front broke the heat wave on the 24th. Maximum temperatures were unable to climb out of the 60's at numerous locations on the 24th and 25th. Enid reported a high of 69 degrees on the 24th and Arnett could get no higher than 65 degrees on the 25th. Both readings were more than ten degrees colder than the previous records for lowest maximum temperature. Heavy precipitation accompanied the passage of the front. Walters received 4.55 inches of rain on the 27th, and Chattanooga 3.97 inches that same day. The precipitation ended as the front cleared the state, and temperatures again climbed above 100 degrees on the 29th. The 107 degrees reported at Alva on the 31st was again the warmest reading in the state, the eighth time Alva received such 'honors'.

Mark A. Shafer

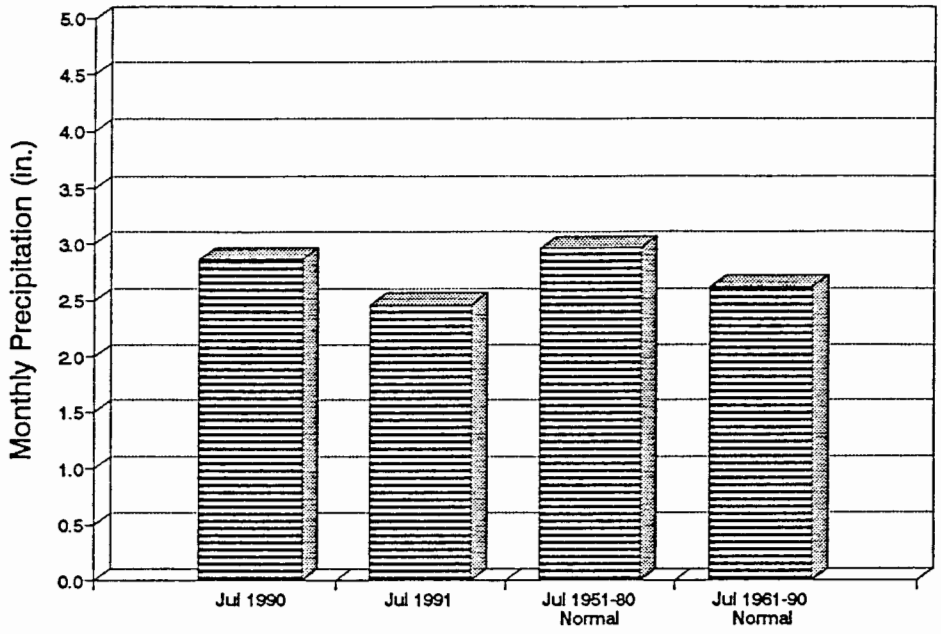
July 1991 percent of normal precipitation.



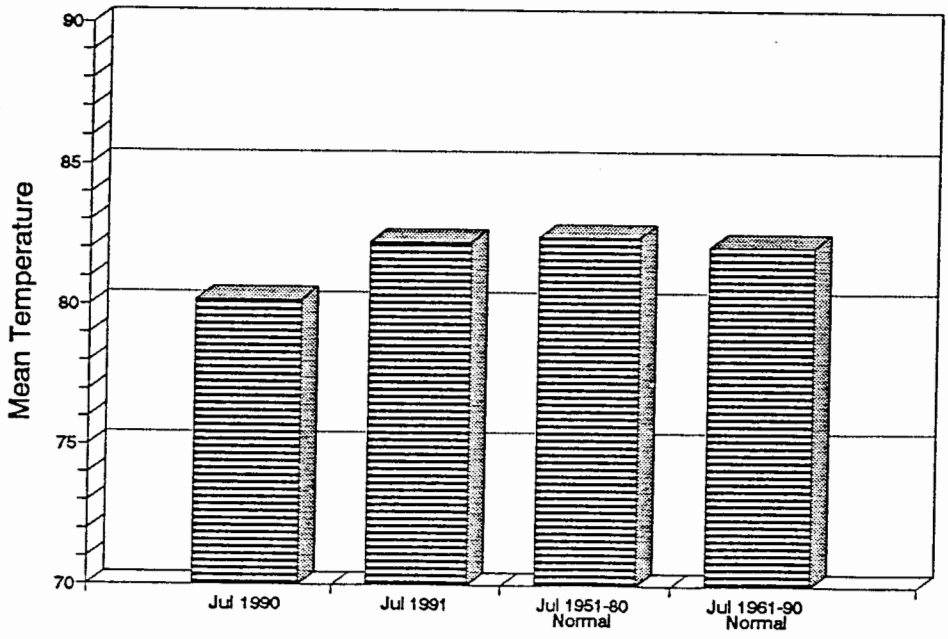
EXTREME VALUES OF TEMPERATURE AND PRECIPITATION IN EACH CLIMATE DIVISION
JULY, 1991

CD	MAX TEMP	DATE	LOCATION	MIN TEMP	DATE	LOCATION	MONTHLY PRECIP	LOCATION	24-HOUR PRECIP	DATE	LOCATION
1	108	20	BUFFALO	56	29	GAGE	3.17	LAVERNE	1.35	11	LAVERNE
2	109	19	ALVA	59	26	FREEDOM	4.48	HARDY	2.38	11	HARDY
	109	22	SALT PLAINS	59	26	JEFFERSON					
	109	20	MUTUAL	59	25	NEWKIRK					
3	105	22	MANNFORD	56	30	PRYOR	3.50	BIXBY	2.90	25	BIXBY
4	106	19	CLINTON	60	24	HAMMON	3.83	HAMMON	2.72	28	HAMMON
	106	5	TALOGA	60	25	OKEENE					
5	105	31	GUTHRIE	58	30	MEEKER	6.36	COX CITY	3.25	3	CRESCENT
				58	30	STILLWATER					
6	103	31	TAHLEQUAH	55	30	STILWELL	5.60	HARTSHORNE	2.31	28	HARTSHORNE
	103	23	WEBBERS FALL								
7	106	19	CHATTANOOGA	56	31	WICHITA MT	6.95	WALTERS	4.55	27	WALTERS
8	104	19	WAURIKA	58	30	CHICKASAW	8.23	CHICKASAW	3.50	27	CENTRAHOMA
9	102	22	POTEAU	58	30	TUSKAHOMA	4.80	TUSKAHOMA	2.79	28	TUSKAHOMA
	102	22	TUSKAHOMA								
	102	22	WILBURTON								

Comparison of Monthly Precipitation
Statewide Average for Oklahoma



Comparison of Monthly Temperature
Statewide Average for Oklahoma



CD Averaged Precipitation
Jan-Jul 1991

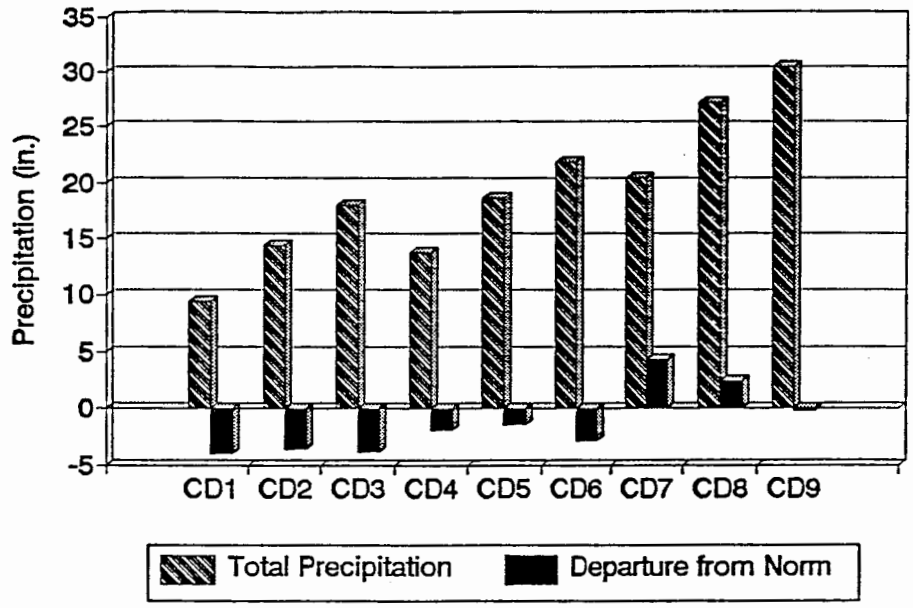


TABLE OF 1990/1991 COMPARISONS

Station	July Temperature (F) 1990	1991	July Precipitation (in.) 1990	1991
Arnett	77.1	78.8	2.83	2.14
Enid	81.6	82.7	2.03	1.69
Mutual	79.4	82.5	1.54	.99
Tulsa	83.5	85.0	.24	.35
Elk City	79.4	81.9	2.11	1.48
Oklahoma City	80.8	82.3	2.44	1.98
McAlester	80.1	81.8	4.10	4.33
Altus Irr Sta	81.5	83.7	3.94	1.74
Durant	80.4	81.8	3.47	1.79
Ada	79.9	80.6	7.98	4.52
Antlers	79.9	81.3	4.25	3.08

EXTREMES

Variable	Station	Division	Observation	Date
Minimum temperature (F)	Kenton	1	53	25
Maximum temperature (F)	Alva	2	109	19
	GSP Dam	2	109	22
	Mutual	2	109	20
Maximum 24-hour precipitation	Smithville	9	6.08"	28

JULY 1991 SUMMARY FOR NORTHWEST DIVISION (CD1)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	MAX DAY	MIN TEMP	MIN DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	MAX DAY
ARNETT	332	1	78.8	31	-2.0	98.	7	59.	25	3.0	3.0	429.5	-60.5	2.142	31	.05	1.30	12
BEAVER	593	1	80.0	31	-1.5	105.	7	56.	30	.0	.0	464.5	-47.5	3.600	31	.73	1.90	13
BUFFALO	1243	1	85.0	31	1.6	108.	20	57.	25	.0	.0	620.0	50.0	1.400	31	-1.92	.56	11
FARGO	3070	1	*****	0	*****	****	0	****	0	******	******	******	******	.991	31	-1.20	.71	12
GAGE FAA APT	3407	1	81.4	31	-.1	103.	6	56.	29	.0	.0	509.0	-3.0	1.684	31	-.43	.89	12
GATE	3489	1	83.1	31	*****	105.	6	59.	27	.0	******	561.0	******	2.290	31	*****	1.43	27
GOODWELL RES ST	3628	1	78.3	31	-1.1	102.	7	57.	25	2.5	2.5	413.5	-32.5	.982	31	-1.90	.31	27
GUYMON	3835	1	79.4	31	*****	103.	7	59.	25	.5	******	448.0	******	1.761	31	*****	.92	12
HOOKER	4298	1	78.2	31	-2.1	101.	8	58.	25	.0	.0	409.5	-64.5	2.570	31	-.36	1.15	12
KENTON	4766	1	75.4	31	-3.2	103.	8	53.	25	7.5	7.5	330.5	-91.5	2.820	31	-.07	1.55	11
LAVERNE	5045	1	*****	0	*****	****	0	****	0	******	******	******	******	3.170	31	.68	1.35	11
OPTIMA LAKE	6740	1	78.6	31	*****	103.	8	58.	29	.0	******	422.0	******	2.180	31	*****	1.05	13
REGNIER	7534	1	*****	0	*****	****	0	****	0	******	******	******	******	1.010	31	-1.49	.52	12
TURPIN 4 SSE	9017	1	79.9	30	*****	103.	8	58.	29	.0	******	447.0	******	1.320	30	*****	.56	12

JULY 1991 SUMMARY FOR NORTH CENTRAL DIVISION (CD2)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	MAX DAY	MIN TEMP	MIN DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	MAX DAY
ALVA	193	2	85.9	31	*****	109.	19	60.	26	.0	******	648.0	******	1.110	31	*****	.63	24
VANCE AFB	302	2	*****	0	*****	****	0	****	0	******	******	******	******	4.082	29	*****	2.75	12
BILLINGS	755	2	81.9	31	*****	102.	20	62.	25	.0	******	524.0	******	2.870	31	-.65	1.30	3
BLACKWELL 2E	818	2	83.5	31	*****	105.	19	60.	25	.0	******	572.0	******	1.842	31	*****	.81	25
BRAMAN	1075	2	*****	0	*****	****	0	****	0	******	******	******	******	3.660	31	*****	1.10	13
CEDARDALE	1620	2	*****	0	*****	****	0	****	0	******	******	******	******	1.621	31	*****	1.00	28
CHEROKEE	1724	2	85.4	31	1.7	106.	19	61.	25	.0	.0	631.5	51.5	2.680	31	-.08	1.52	3
ENID	2912	2	82.7	31	-.8	102.	31	60.	27	.0	.0	549.0	-25.0	1.690	31	-1.49	.85	14
FT SUPPLY DAM	3304	2	81.5	31	-.3	103.	20	60.	25	.0	.0	512.0	-9.0	1.660	31	-.53	.86	28
FREEDOM	3358	2	83.3	31	*****	105.	19	59.	26	.0	******	566.5	******	1.660	31	*****	1.02	3
GREAT SALT PLNS	3740	2	83.8	31	*****	109.	22	61.	26	.0	******	582.0	******	3.580	24	*****	2.23	3
HARDY	3909	2	*****	0	*****	****	0	****	0	******	******	******	******	4.481	31	*****	2.38	11
HELENA 1 SSE	4019	2	82.5	31	*****	106.	20	62.	26	.0	******	542.0	******	2.500	31	-.58	.73	3
JEFFERSON	4573	2	84.4	31	.8	107.	11	59.	26	.0	.0	602.0	25.0	2.310	31	-1.61	.63	1
MEDFORD	5768	2	*****	0	*****	****	0	****	0	******	******	******	******	1.500	31	*****	.69	23
MORRISON	6065	2	*****	0	*****	****	0	****	0	******	******	******	******	.230	31	*****	.13	26
MUTUAL	6139	2	82.5	31	-.1	109.	20	60.	25	1.0	1.0	544.5	-1.5	.990	31	-1.57	.54	12
NEWKIRK	6278	2	81.9	31	-.6	102.	19	59.	25	.0	.0	523.5	-19.5	2.922	31	-.63	1.04	12
ORIENTA	6751	2	*****	0	*****	****	0	****	0	******	******	******	******	2.180	31	*****	1.08	12
PERRY	7012	2	85.0	31	1.8	102.	31	64.	30	.0	.0	619.5	55.5	3.910	31	.38	2.03	13
PONCA CITY FAA	7201	2	84.3	30	1.8	103.	31	61.	25	.0	.0	579.5	33.5	2.441	31	-1.66	1.19	25
RED ROCK 1 NNE	7505	2	*****	0	*****	****	0	****	0	******	******	******	******	3.310	31	-.41	1.04	28
WAYNOKA	9404	2	83.3	31	-.2	107.	19	61.	25	.0	.0	568.0	-6.0	1.320	31	-1.23	.64	24
WOODWARD	9760	2	*****	0	*****	****	0	****	0	******	******	******	******	.971	31	*****	.41	12

JULY 1991 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	82.2	31	*****	101.	31	59.	30	.0	******	534.0	******	.270	29	*****	.20	13
BARTLESVILLE 2W	548	3	82.3	31	.3	102.	31	58.	25	.0	.0	535.5	8.5	2.920	31	-.07	.84	24
BIXBY	782	3	81.4	31	-.4	98.	24	61.	31	.0	.0	509.0	-12.0	3.503	31	.29	2.90	25
BURBANK	1256	3	*****	0	*****	****	0	****	0	******	******	******	******	1.990	31	*****	.78	20
CHELSEA 4 S	1717	3	*****	0	*****	****	0	****	0	******	******	******	******	1.400	31	*****	.88	13
CLAREMORE	1828	3	81.0	31	-.6	99.	23	59.	31	.0	.0	497.0	-18.0	2.490	31	-.59	1.19	13
CLEVELAND 5 WSW	1902	3	83.6	30	*****	104.	31	59.	30	.0	******	558.5	******	1.310	30	*****	1.04	21
FORAKER	3250	3	*****	0	*****	****	0	****	0	******	******	******	******	2.361	31	-1.11	.94	12
HOMINY	4289	3	*****	0	*****	****	0	****	0	******	******	******	******	2.160	31	-1.26	.78	4
HULAH DAM	4393	3	81.1	22	*****	107.	9	58.	25	1.0	******	354.5	******	1.600	31	-1.34	1.10	12
JAY TOWER	4567	3	81.4	29	*****	102.	23	58.	30	.0	******	477.0	******	3.030	30	*****	1.75	13
KANSAS 1 ESE	4672	3	81.4	31	*****	99.	22	59.	30	.0	******	509.0	******	.772	31	*****	.30	25
KEYSTONE DAM	4812	3	82.2	31	*****	101.	20	58.	30	.0	******	534.5	******	.583	31	*****	.46	28
LENAPAH	5118	3	*****	0	*****	****	0	****	0	******	******	******	******	.690	31	*****	.37	13
MANNFORD 6 NW	5522	3	84.0	31	*****	105.	22	62.	26	.0	******	590.5	******	.920	31	-2.28	.77	28
MARAMEC	5540	3	*****	0	*****	****	0	****	0	******	******	******	******	.220	31	-2.90	.14	7
MIAMI	5855	3	80.0	31	-1.1	99.	31	59.	30	.0	.0	464.0	-35.0	2.310	31	-1.62	1.01	20
NOWATA	6485	3	82.5	31	.4	102.	31	60.	30	.0	.0	541.5	11.5	.981	31	-1.96	.40	2
ONETA 1 WNW	6713	3	*****	0	*****	****	0	****	0	******	******	******	******	1.560	31	*****	1.09	25
PAWHUSKA	6935	3	81.7	31	-.1	100.	31	59.	24	.0	.0	518.5	-2.5	3.431	31	-.02	2.15	24
PAWNEE	6940	3	*****	0	*****	****	0	****	0	******	******	******	******	.540	31	-2.59	.27	13
PRYOR 6 N	7309	3	80.4	31	-1.2	101.	23	56.	30	.0	.0	478.5	-36.5	1.063	31	-2.00	.60	13
RALSTON	7390	3	83.9	31	*****	104.	31	60.	30	.0	******	584.5	******	1.762	31	-1.73	1.06	28
RAMONA 4 N	7394	3	*****	0	*****	****	0	****	0	******	******	******	******	1.150	31	*****	.75	13
SKIATOOK	8258	3	*****	0	*****	****	0	****	0	******	******	******	******	1.710	31	-1.70	1.56	28
SPAVINAW	8380	3	83.4	31	*****	99.	22	62.	30	.0	******	570.0	******	.513	31	-3.22	.32	13
TULSA WSO APT	8992	3	85.0	31	1.8	101.	23	64.	30	.0	.0	620.5	56.5	.352	31	-3.16	.15	13
UPPER SPAVINAW	9101	3	81.1	30	*****	102.	22	57.	30	.0	******	484.0	******	.683	31	*****	.50	4
VINITA 2 N	9203	3	82.3	29	*****	101.	31	58.	4	.0	******	500.5	******	.591	29	*****	.34	13
WAGONER	9247	3	82.3	31	-.1	99.	23	62.	30	.0	.0	535.0	-4.0	2.172	31	-1.33	1.83	25
WYNONA	9792	3	*****	0	*****	****	0	****	0	******	******	******	******	1.642	31	*****	1.04	28

JULY 1991 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	82.5	31	-.4	104.	20	63.	26	.0	.0	543.0	-12.0	2.662	31	.25	1.49	3
CLINTON	1909	4	84.6	31	1.3	106.	19	63.	4	.0	.0	609.0	42.0	1.651	31	-.87	.89	14
COLONY	2039	4	*****	0	*****	****	0	****	0	******	******	******	******	3.240	31	*****	1.52	14
CORDELL	2125	4	*****	0	*****	****	0	****	0	******	******	******	******	.780	31	-1.74	.45	14
ELK CITY 1 E	2849	4	81.9	31	*****	101.	19	61.	31	.0	******	523.0	******	1.481	31	-.93	.85	14
ERICK 4 E	2944	4	81.5	31	-.4	103.	19	61.	4	.0	.0	510.5	-13.5	3.181	31	1.05	1.31	28
GEARY	3497	4	82.6	28	*****	101.	19	61.	3	.0	******	492.5	******	.000	28	*****	.00	31
HAMMON 1 NNE	3871	4	81.6	31	-1.4	105.	19	60.	24	.0	.0	515.0	-43.0	3.833	31	1.68	2.72	28
MACKIE 4 NNW	5463	4	*****	0	*****	****	0	****	0	******	******	******	******	1.940	31	*****	.81	14
MORAVIA 2 NNE	6035	4	*****	0	*****	****	0	****	0	******	******	******	******	1.271	31	-1.02	.36	14
OKEENE	6629	4	83.7	31	-.2	103.	19	60.	25	.0	.0	580.0	-6.0	1.210	31	-1.13	.54	12
RETROP	7565	4	*****	0	*****	****	0	****	0	******	******	******	******	.480	31	*****	.23	14
SAYRE	7952	4	*****	0	*****	****	0	****	0	******	******	******	******	2.040	31	-.03	.91	14
SWEETWATER 2 E	8652	4	*****	0	*****	****	0	****	0	******	******	******	******	2.320	31	*****	.78	13
TALOGA	8708	4	82.3	31	.1	106.	5	61.	25	.0	.0	536.5	3.5	.701	31	-1.92	.51	12
THOMAS	8815	4	*****	0	*****	****	0	****	0	******	******	******	******	1.870	31	*****	1.10	13
VICI	9172	4	*****	0	*****	****	0	****	0	******	******	******	******	3.311	31	*****	2.00	12
WATONGA	9364	4	83.4	31	*****	103.	19	62.	30	.0	******	570.0	******	1.041	31	-1.20	.50	3
WEATHERFORD	9422	4	83.2	31	.2	105.	20	63.	26	.0	.0	565.0	7.0	1.124	31	-1.37	.51	14

JULY 1991 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	******	******	******	******	2.760	31	*****	1.66	4
TINKER AFB	325	5	*****	0	*****	****	0	****	0	******	******	******	******	2.094	30	*****	1.17	3
BLANCHARD 2 SSW	830	5	81.2	31	*****	99.	19	62.	30	.0	******	501.0	******	2.772	31	*****	1.31	4
BRISTOW	1144	5	81.1	26	*****	100.	19	58.	30	.0	******	419.5	******	2.820	26	*****	1.04	28
CHANDLER	1684	5	82.0	29	*****	98.	31	64.	28	.0	******	493.0	******	1.050	30	*****	.55	3
CHICKASHA EX ST	1750	5	82.1	31	-.9	100.	19	62.	31	.0	.0	531.0	-27.0	3.410	31	.89	2.41	3
COX CITY 1 E	2196	5	*****	0	*****	****	0	****	0	******	******	******	******	6.361	31	*****	2.80	25
CRESCENT	2242	5	*****	0	*****	****	0	****	0	******	******	******	******	3.680	31	*****	3.25	3
CUSHING	2318	5	81.8	28	*****	99.	20	64.	26	.0	******	469.0	******	.482	31	-3.24	.21	3
EL RENO 1 N	2818	5	82.4	28	*****	99.	20	64.	25	.0	******	488.0	******	4.490	28	*****	3.00	3
GUTHRIE	3821	5	85.2	31	2.1	105.	31	64.	30	.0	.0	626.5	65.5	1.572	31	-1.27	1.07	3
HENNESSEY 2 SE	4055	5	82.9	29	*****	104.	31	61.	26	.0	******	519.5	******	3.010	31	.50	1.43	13
INGALLS	4489	5	*****	0	*****	****	0	****	0	******	******	******	******	.403	31	*****	.40	4
KINGFISHER 2 SE	4861	5	82.4	31	-1.3	101.	31	61.	30	.0	.0	539.0	-41.0	3.090	31	.52	1.28	3
KONAWA	4915	5	*****	0	*****	****	0	****	0	******	******	******	******	2.780	31	.25	1.13	28
MARSHALL	5589	5	*****	0	*****	****	0	****	0	******	******	******	******	2.650	31	.06	1.66	3
MEEKER 4 W	5779	5	80.6	31	-1.7	97.	19	58.	30	.0	.0	482.5	-53.5	3.300	31	.29	1.87	2
MULHALL	6110	5	*****	0	*****	****	0	****	0	******	******	******	******	1.180	31	*****	.64	3
NORMAN 3 S	6386	5	83.1	31	*****	102.	22	61.	30	.0	******	562.0	******	1.386	31	-1.84	1.00	4
OILTON 2 SE	6616	5	*****	0	*****	****	0	****	0	******	******	******	******	1.040	31	*****	.72	20
OKEMAH	6638	5	82.5	31	.4	100.	23	64.	30	.0	.0	544.0	14.0	3.600	31	.22	1.37	3
OKLAHOMA CTY WS	6661	5	82.3	31	.2	99.	19	66.	30	.0	.0	537.5	7.5	1.984	31	-1.06	1.55	3
PIEDMONT	7068	5	*****	0	*****	****	0	****	0	******	******	******	******	3.550	25	*****	3.23	3
PRAGUE	7264	5	*****	0	*****	****	0	****	0	******	******	******	******	2.631	31	-.58	1.05	3
PURCELL 5 SW	7327	5	81.6	31	-1.2	100.	20	59.	30	.0	.0	516.0	-36.0	2.231	31	-.77	1.00	4
SEMINOLE	8042	5	82.6	31	-1.1	99.	24	61.	30	.0	.0	545.0	-35.0	.980	31	-1.97	.50	24
SHAWNEE	8110	5	*****	0	*****	****	0	****	0	******	******	******	******	3.300	31	.64	2.55	3
STELLA	8479	5	*****	0	*****	****	0	****	0	******	******	******	******	2.440	31	*****	.97	3
STILLWATER 2 W	8501	5	82.7	31	.6	101.	23	58.	30	.0	.0	549.5	19.5	.452	31	-3.34	.44	3
STROUD 1 N	8563	5	*****	0	*****	****	0	****	0	******	******	******	******	.850	31	*****	.23	4
TECUMSEH	8751	5	*****	0	*****	****	0	****	0	******	******	******	******	2.182	31	*****	1.60	3
TROUSDALE	8960	5	*****	0	*****	****	0	****	0	******	******	******	******	2.042	31	*****	.81	3
UNION CITY 1 SE	9086	5	*****	0	*****	****	0	****	0	******	******	******	******	1.822	31	-.32	1.16	3
WELTY 1 SSE	9479	5	*****	0	*****	****	0	****	0	******	******	******	******	2.150	31	*****	.70	3
WEWOKA	9575	5	*****	0	*****	****	0	****	0	******	******	******	******	2.311	31	-.48	1.11	3

JULY 1991 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	******	******	******	******	3.650	31	*****	1.72	28
BEGGS	631	6	*****	0	*****	****	0	****	0	******	******	******	******	1.680	31	*****	1.11	28
BOYNTON	1027	6	*****	0	*****	****	0	****	0	******	******	******	******	.801	31	*****	.35	28
CALVIN	1391	6	*****	0	*****	****	0	****	0	******	******	******	******	3.891	31	.34	2.34	25
CHECOTAH	1711	6	*****	0	*****	****	0	****	0	******	******	******	******	2.881	31	-.58	1.63	26
DEWAR 2 NE	2485	6	*****	0	*****	****	0	****	0	******	******	******	******	2.650	31	-.89	1.28	28
EUFAULA	2993	6	83.2	31	*****	100.	22	65.	4	.0	******	564.5	******	4.050	31	.40	1.83	28
HANNA	3884	6	80.6	31	*****	98.	22	59.	30	.0	******	483.0	******	5.191	31	2.03	1.82	3
HARTSHORNE	3946	6	*****	0	*****	****	0	****	0	******	******	******	******	5.600	31	*****	2.31	28
HASKELL	3956	6	*****	0	*****	****	0	****	0	******	******	******	******	.890	31	-2.29	.42	28
HOLDENVILLE	4235	6	80.9	31	-1.7	98.	22	58.	30	.0	.0	492.5	-53.5	2.510	31	-.95	1.20	3
LAKE EUFAULA	4975	6	82.5	31	*****	102.	23	60.	30	.0	******	543.0	******	3.050	31	*****	1.58	28
LYONS 2 N	5437	6	*****	0	*****	****	0	****	0	******	******	******	******	1.760	31	-1.46	.84	2
MARBLE CITY	5546	6	*****	0	*****	****	0	****	0	******	******	******	******	.661	31	*****	.42	28
MCALESTER FAA	5664	6	81.8	30	-.9	100.	22	63.	17	.0	.0	505.0	-69.0	4.330	31	.92	1.70	28
MCCURTAIN 1 SE	5693	6	82.7	31	*****	102.	19	59.	30	.0	******	548.5	******	2.443	31	-1.37	1.05	28
MUSKOGEE	6130	6	82.7	31	.1	100.	23	58.	30	.0	.0	549.0	3.0	.091	31	-3.01	.06	25
OKMULGEE W W	6670	6	79.8	31	-1.9	99.	23	56.	30	.0	.0	458.0	-60.0	2.081	31	-.97	1.38	28
OKTAHA 2 NE	6678	6	*****	0	*****	****	0	****	0	******	******	******	******	1.750	31	*****	.88	25
QUINTON	7372	6	*****	0	*****	****	0	****	0	******	******	******	******	2.681	31	-1.12	1.19	28
SALLISAW 2 NE	7862	6	81.4	31	-.7	100.	24	60.	30	.0	.0	508.5	-21.5	2.151	31	-1.40	2.03	25
SCIPIO	7979	6	*****	0	*****	****	0	****	0	******	******	******	******	3.180	31	*****	1.31	27
SCRAPER	7993	6	*****	0	*****	****	0	****	0	******	******	******	******	.610	31	*****	.20	25
SHORT	8170	6	*****	0	*****	****	0	****	0	******	******	******	******	1.590	31	*****	.65	25
STILWELL 1 NE	8506	6	80.6	31	*****	100.	23	55.	30	.0	******	485.0	******	1.361	31	-2.37	.46	25
TAHLEQUAH	8677	6	83.3	31	2.6	103.	31	58.	30	.0	.0	566.5	79.5	.430	31	-2.96	.25	28
WEBBERS FALLS	9445	6	81.6	30	-.5	103.	23	57.	30	.0	.0	498.5	-31.5	1.001	30	*****	.65	27
WESTVILLE	9523	6	*****	0	*****	****	0	****	0	******	******	******	******	1.700	31	*****	.79	25
WETUMKA 3 NE	9571	6	*****	0	*****	****	0	****	0	******	******	******	******	3.253	31	.06	1.60	3

JULY 1991 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	83.7	31	-.9	104.	20	65.	27	.0	.0	579.5	-28.5	1.740	31	-.18	.68	14
ALTUS DAM	184	7	84.0	31	*****	104.	20	63.	4	.0	******	590.0	******	.501	31	-2.10	.21	27
ANADARKO	224	7	81.3	31	-1.9	99.	19	60.	31	.0	.0	506.0	-58.0	3.340	31	.78	1.08	3
APACHE	260	7	*****	0	*****	****	0	****	0	******	******	******	******	2.250	31	*****	.81	4
ALTUS AFB	447	7	*****	0	*****	****	0	****	0	******	******	******	******	.813	30	*****	.38	27
CARNEGIE 2 ENE	1504	7	83.2	30	-.5	104.	19	58.	31	.0	.0	545.5	-34.5	1.452	30	*****	.54	3
CHATTANOOGA	1706	7	84.1	31	-.2	106.	19	63.	4	.0	.0	592.0	-6.0	6.330	31	3.78	3.97	27
DUNCAN 12 W	2668	7	*****	0	*****	****	0	****	0	******	******	******	******	6.530	31	*****	2.09	28
FREDERICK	3353	7	83.0	31	-2.8	102.	20	63.	27	.0	.0	556.5	-88.5	4.660	31	2.47	2.30	27
GRANDFIELD 4 NW	3709	7	*****	0	*****	****	0	****	0	******	******	******	******	.150	24	*****	.15	15
HOBART FAA APT	4204	7	82.8	30	-.8	104.	19	61.	31	.0	.0	532.5	-41.5	2.842	30	*****	1.50	14
HOLLIS	4249	7	82.3	31	-2.6	104.	18	63.	6	.0	.0	535.5	-81.5	1.250	31	-.62	.55	28
LAWTON	5063	7	82.9	31	-.8	103.	20	65.	31	.0	.0	554.0	-26.0	4.080	31	1.57	1.85	27
FORT SILL	5068	7	82.2	31	*****	102.	19	66.	4	.0	******	532.0	******	2.823	31	.31	1.57	27
LOOKEBA 2 ENE	5329	7	*****	0	*****	****	0	****	0	******	******	******	******	1.360	26	*****	.67	16
MANGUM RES STA	5509	7	83.0	31	-.9	104.	20	63.	27	.0	.0	556.5	-29.5	1.150	31	-1.54	.99	13
RANDLETT 9 E	7403	7	*****	0	*****	****	0	****	0	******	******	******	******	4.810	31	*****	2.13	29
ROOSEVELT	7727	7	*****	0	*****	****	0	****	0	******	******	******	******	1.040	31	-1.33	.51	14
SEDAN	8016	7	*****	0	*****	****	0	****	0	******	******	******	******	1.270	31	*****	.34	14
SNYDER	8299	7	*****	0	*****	****	0	****	0	******	******	******	******	2.141	31	-.33	1.28	28
VINSON 3 WNW	9212	7	*****	0	*****	****	0	****	0	******	******	******	******	.440	31	-1.52	.26	15
WALTERS	9278	7	83.8	31	-.7	104.	19	64.	31	.0	.0	582.5	-22.5	6.950	31	3.99	4.55	27
WICHITA MT WLR	9629	7	80.6	31	-2.0	100.	20	56.	31	.0	.0	485.0	-61.0	.900	31	-1.59	.85	27
WILLOW	9668	7	*****	0	*****	****	0	****	0	******	******	******	******	.842	31	*****	.30	15

JULY 1991 SUMMARY FOR SOUTH CENTRAL DIVISION (CD8)

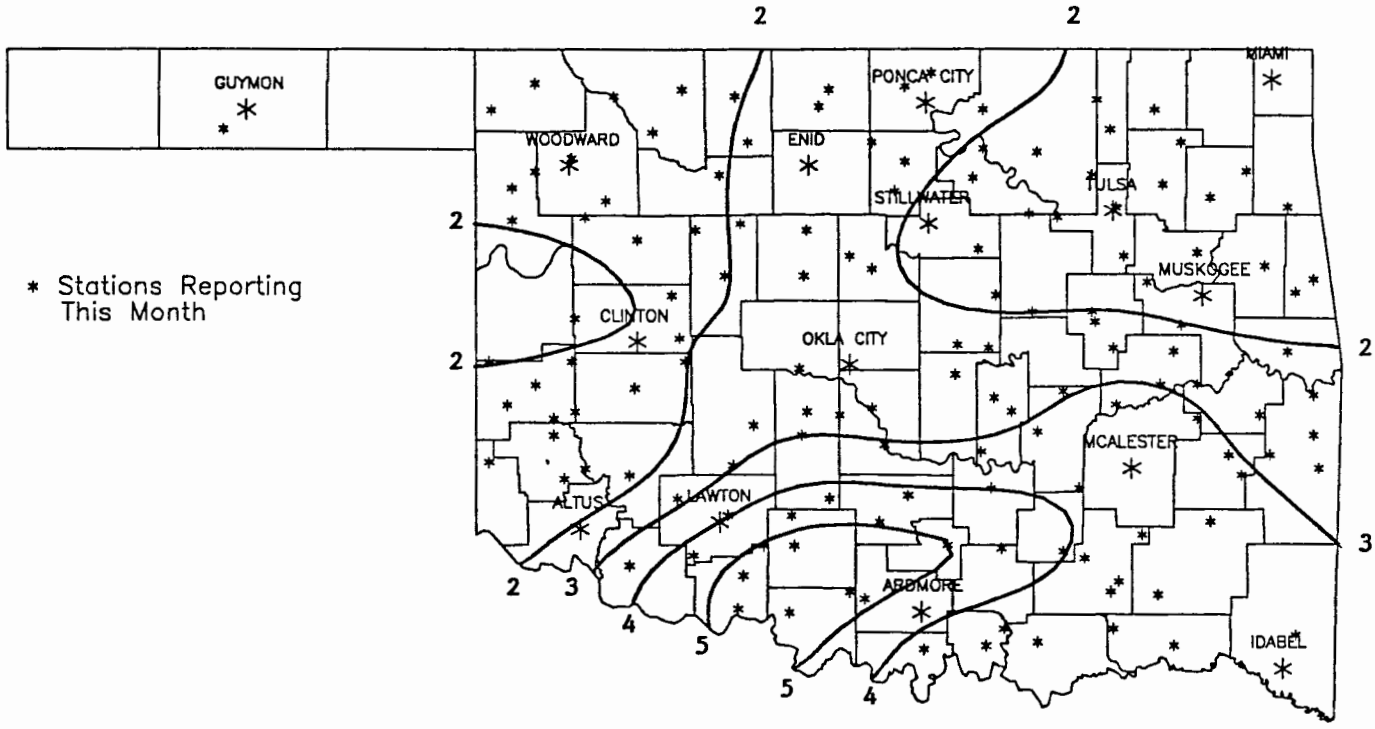
NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ADA	17	8	80.6	31	-2.1	97.	19	61.	30	.0	.0	484.5	-64.5	4.520	31	1.83	2.00	28
ARDMORE	292	8	82.6	30	-2.3	98.	19	64.	30	.0	.0	526.5	-87.5	3.670	30	*****	1.41	25
ATOKA DAM	394	8	83.7	31	*****	103.	25	63.	31	.0	******	580.0	******	3.790	31	*****	1.85	29
BOKCHITO	917	8	*****	0	*****	****	0	****	0	******	******	******	******	4.060	30	*****	2.25	25
CANEY	1437	8	82.7	31	*****	99.	24	62.	30	.0	******	547.5	******	3.540	31	*****	1.70	25
CENTRAHOMA	1648	8	*****	0	*****	****	0	****	0	******	******	******	******	5.500	31	*****	3.50	27
CHICKASAW NRA	1745	8	80.8	31	*****	98.	14	58.	30	.0	******	490.5	******	8.230	31	*****	2.77	28
COLEMAN	2011	8	*****	0	*****	****	0	****	0	******	******	******	******	1.510	31	*****	1.00	26
COMANCHE	2054	8	*****	0	*****	****	0	****	0	******	******	******	******	8.110	31	*****	4.05	27
DAISY 4 ENE	2354	8	*****	0	*****	****	0	****	0	******	******	******	******	2.111	31	-2.21	1.09	28
DUNCAN	2660	8	81.5	31	-2.3	100.	20	65.	31	.0	.0	513.0	-70.0	7.020	31	4.69	2.23	27
DURANT USDA	2678	8	81.8	31	*****	99.	23	60.	30	.0	******	520.5	******	1.790	31	-.75	1.18	29
ELMORE CITY	2872	8	*****	0	*****	****	0	****	0	******	******	******	******	4.191	31	*****	1.70	25
FARRIS 3 WNW	3083	8	*****	0	*****	****	0	****	0	******	******	******	******	2.070	31	*****	1.60	25
GRADY	3688	8	*****	0	*****	****	0	****	0	******	******	******	******	1.560	31	*****	.80	25
HEALDTON	4001	8	82.0	31	*****	101.	19	61.	30	.0	******	526.0	******	5.220	31	2.85	2.05	28
KETCHUM RANCH	4780	8	*****	0	*****	****	0	****	0	******	******	******	******	5.100	31	*****	2.65	27
KINGSTON	4865	8	*****	0	*****	****	0	****	0	******	******	******	******	2.100	31	-.23	1.02	26
LEHIGH	5108	8	*****	0	*****	****	0	****	0	******	******	******	******	6.101	31	*****	2.10	28
LINDSAY 2 W	5216	8	81.4	28	*****	98.	19	62.	30	.0	******	459.0	******	3.280	29	*****	.94	25
LOCO 6 SE	5247	8	*****	0	*****	****	0	****	0	******	******	******	******	8.030	31	*****	2.81	28
MADILL	5468	8	83.0	31	-.7	98.	19	62.	29	.0	.0	558.0	-22.0	3.550	31	1.27	2.85	24
MARIETTA	5563	8	82.9	31	-.7	100.	19	63.	30	.0	.0	553.5	-23.5	1.020	31	-1.12	.46	28
MARLOW 1 WSW	5581	8	82.8	31	*****	103.	19	61.	31	.0	******	551.0	******	4.450	31	1.88	1.26	28
MCGEE CREEK DAM	5713	8	82.3	31	*****	100.	23	62.	30	.0	******	536.5	******	1.240	31	*****	.74	25
PAULS VALLEY	6926	8	81.9	31	-2.2	100.	23	59.	30	.0	.0	523.5	-68.5	2.841	31	.51	1.27	28
PONTOTOC	7214	8	*****	0	*****	****	0	****	0	******	******	******	******	5.620	31	3.03	2.33	27
TISHOMINGO NWLR	8884	8	82.4	26	*****	100.	19	62.	30	.0	******	453.0	******	5.030	29	*****	3.05	25
TUSSY	9032	8	*****	0	*****	****	0	****	0	******	******	******	******	7.440	31	*****	2.45	27
WAURIKA	9395	8	83.8	31	-.9	104.	19	63.	25	.0	.0	583.5	-27.5	4.660	31	2.38	1.47	28
WAURIKA DAM	9399	8	82.7	30	*****	103.	21	65.	5	.0	******	532.0	******	4.070	30	*****	1.30	28

JULY 1991 SUMMARY FOR SOUTHEAST DIVISION (CD9)

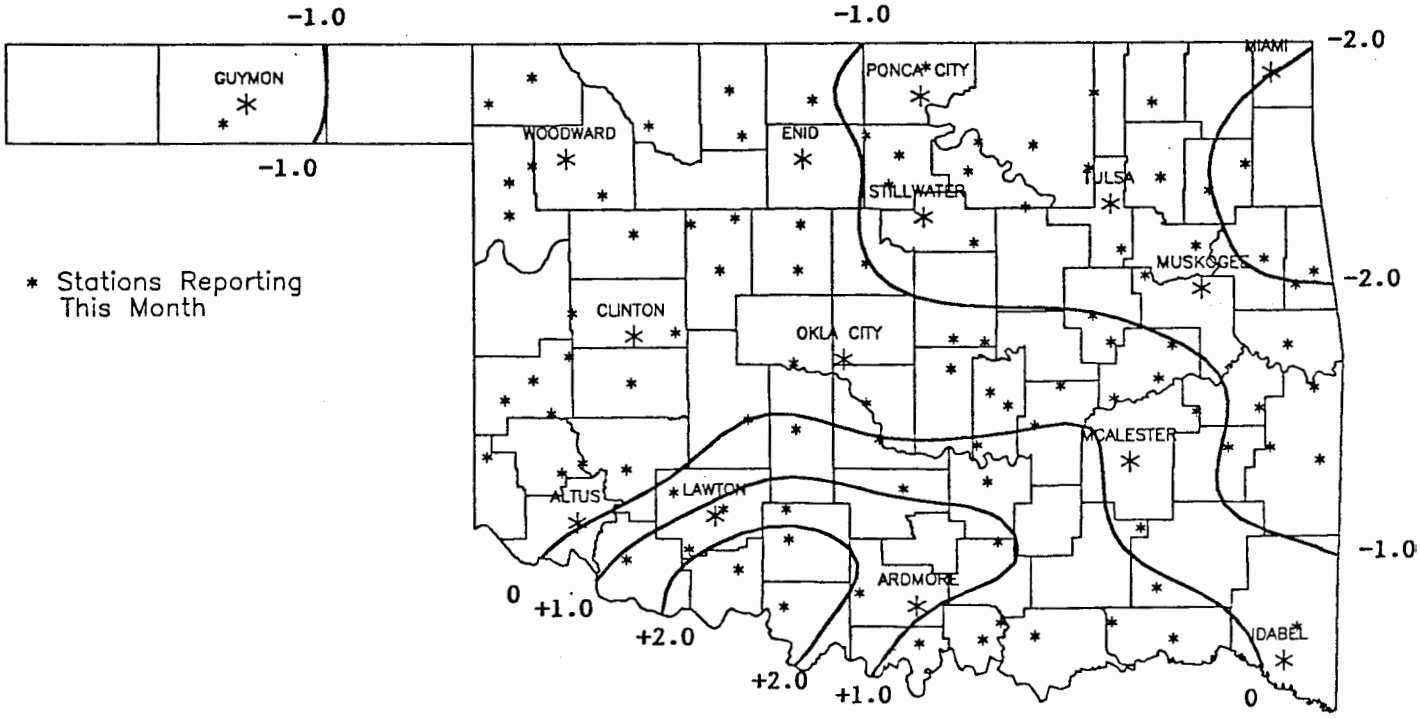
NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ANTLERS	256	9	81.3	31	-.7	98.	22	61.	30	.0	.0	505.0	-22.0	3.080	31	-.09	2.17	24
BATTIEST 1 SSW	567	9	79.6	31	*****	99.	13	60.	17	.0	******	454.0	******	4.270	31	*****	1.53	27
BEAR MT TWR	584	9	83.1	31	*****	102.	15	65.	31	.0	******	560.0	******	3.450	31	-.60	2.25	28
BENGAL	670	9	*****	0	*****	****	0	****	0	******	******	******	******	3.660	31	*****	1.17	26
BOSWELL 4 NNW	980	9	81.9	31	*****	98.	22	61.	30	.0	******	522.5	******	4.751	31	2.10	1.90	25
BROKEN BOW 1 N	1162	9	*****	0	*****	****	0	****	0	******	******	******	******	3.210	31	-.66	1.02	28
BROKEN BOW DAM	1168	9	82.0	31	*****	102.	30	63.	31	.0	******	525.5	******	1.830	31	*****	1.27	28
CARNASAW TWR	1499	9	*****	0	*****	****	0	****	0	******	******	******	******	4.310	31	.17	2.65	3
CARTER TWR	1544	9	*****	0	*****	****	0	****	0	******	******	******	******	2.620	31	-1.77	.96	14
FANSHAWE	3065	9	*****	0	*****	****	0	****	0	******	******	******	******	2.380	31	-1.65	1.15	28
FLAGPOLE TWR	3169	9	*****	0	*****	****	0	****	0	******	******	******	******	3.970	31	*****	2.55	28
HEAVENER 1 SE	4008	9	*****	0	*****	****	0	****	0	******	******	******	******	2.280	31	-1.28	1.05	28
HEE MT TWR	4017	9	*****	0	*****	****	0	****	0	******	******	******	******	4.240	31	*****	2.00	4
HUGO	4384	9	82.3	31	-.7	98.	23	65.	30	.0	.0	537.5	-20.5	4.580	31	1.53	2.12	25
IDABEL	4451	9	81.9	31	.0	99.	23	61.	18	.0	.0	525.0	1.0	1.690	31	-1.86	.99	28
POTEAU W W	7254	9	81.7	31	*****	102.	22	61.	30	.0	******	516.5	******	3.253	31	*****	1.61	27
SMITHVILLE 1 W	8285	9	78.6	31	*****	98.	23	57.	17	.0	******	423.0	******	8.983	31	*****	6.08	28
SPIRO	8416	9	*****	0	*****	****	0	****	0	******	******	******	******	2.260	31	-1.53	.97	28
TUSKAHOMA	9023	9	82.5	31	*****	102.	22	58.	30	.0	******	543.5	******	4.802	31	*****	2.79	28
VALLIANT 3 W	9118	9	*****	0	*****	****	0	****	0	******	******	******	******	3.440	31	-.14	1.87	28
WILBURTON 9 ENE	9634	9	81.2	31	-.8	102.	22	59.	30	.0	.0	501.5	-25.5	2.152	31	-2.18	1.05	27

JULY 1991 CLIMATE DIVISION SUMMARY

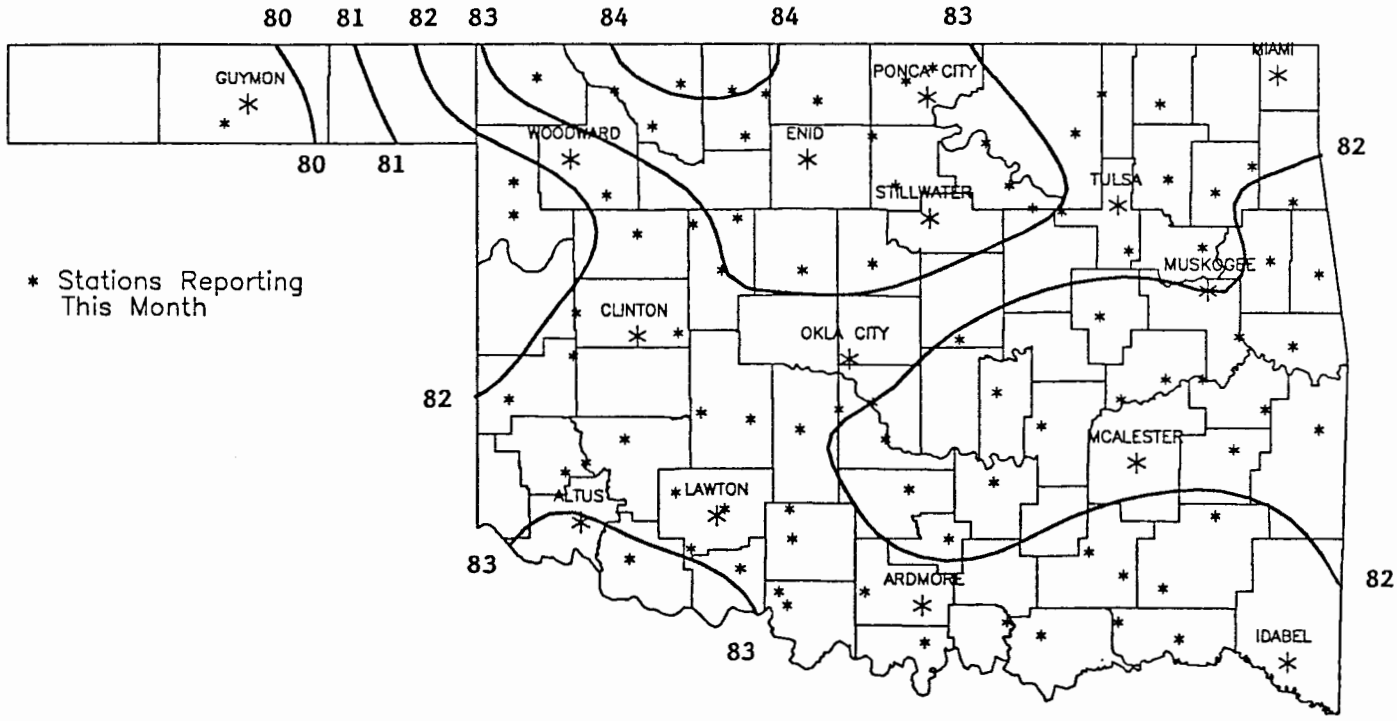
CLIMATE DIV	MEAN TEMP	NUM STA	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEGREE DAYS	DEV FROM NORM	COOL DEGREE DAYS	DEV FROM NORM	TOT PPT	NUM STA	DEV FROM NORM	MAX 24-HR	DAY
1	79.8	11	-1.0	108.0	20	53.0	25	1.2	1.2	459.5	-29.9	2.05	13	-.58	1.90	13
2	83.5	15	.5	109.0	20	59.0	25	.1	.1	570.9	12.6	2.18	22	-1.04	2.75	12
3	82.3	17	.5	107.0	9	56.0	30	.0	.0	533.2	12.4	1.54	27	-1.77	2.90	25
4	82.7	9	-.2	106.0	5	60.0	25	.0	.0	550.2	-4.7	1.90	18	-.46	2.72	28
5	82.4	11	-.3	105.0	31	58.0	30	.0	.0	539.5	-10.8	2.30	30	-.66	3.25	3
6	81.8	12	-.3	103.0	23	55.0	30	.0	.0	516.8	-16.2	2.39	28	-1.02	2.34	25
7	82.8	13	-1.2	106.0	19	56.0	31	.0	.0	549.8	-41.4	2.79	19	.39	4.55	27
8	82.3	15	-1.6	104.0	19	58.0	30	.0	.0	535.1	-51.5	4.28	26	1.72	4.05	27
9	81.5	11	-.8	102.0	22	57.0	17	.0	.0	510.4	-23.6	3.58	21	-.12	6.08	28



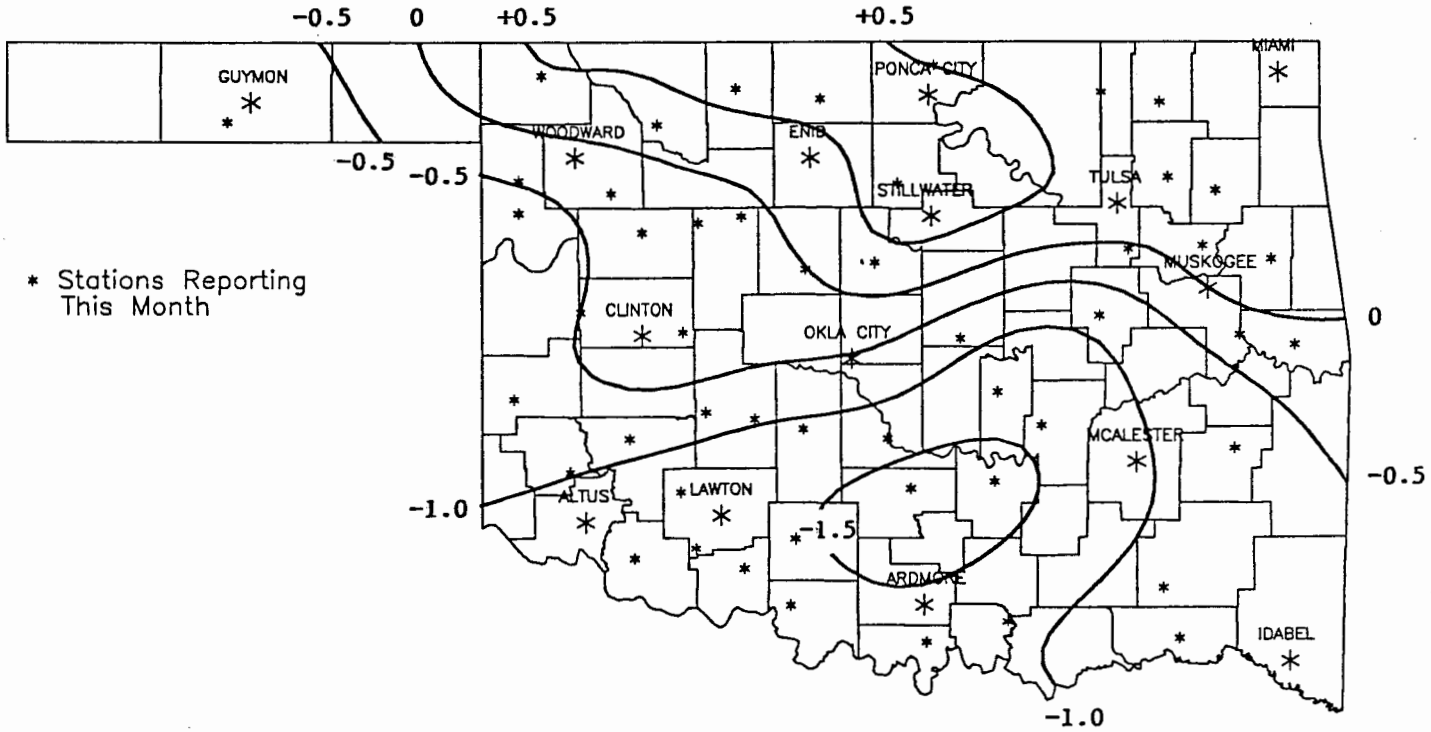
JULY 1991 TOTAL PRECIPITATION
(Inches)



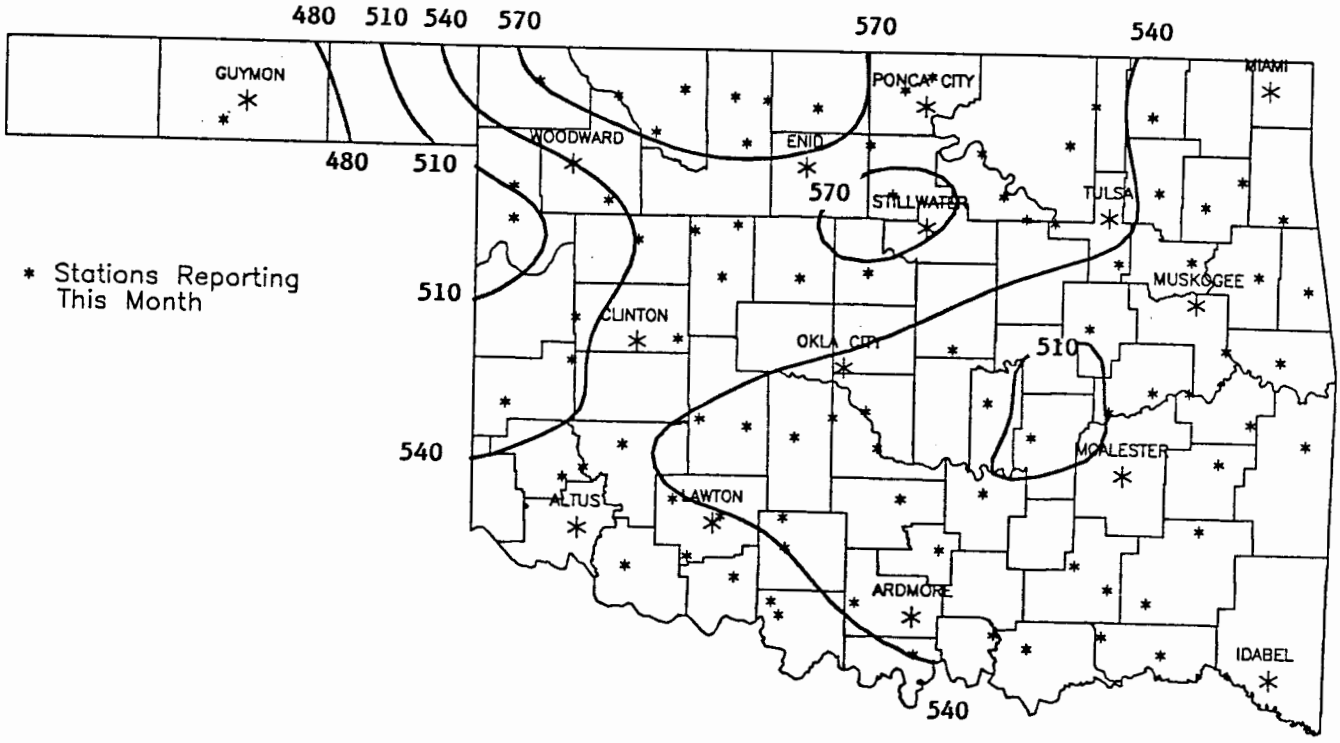
JULY 1991 DEVIATION FROM NORMAL PRECIPTATION
(Inches)



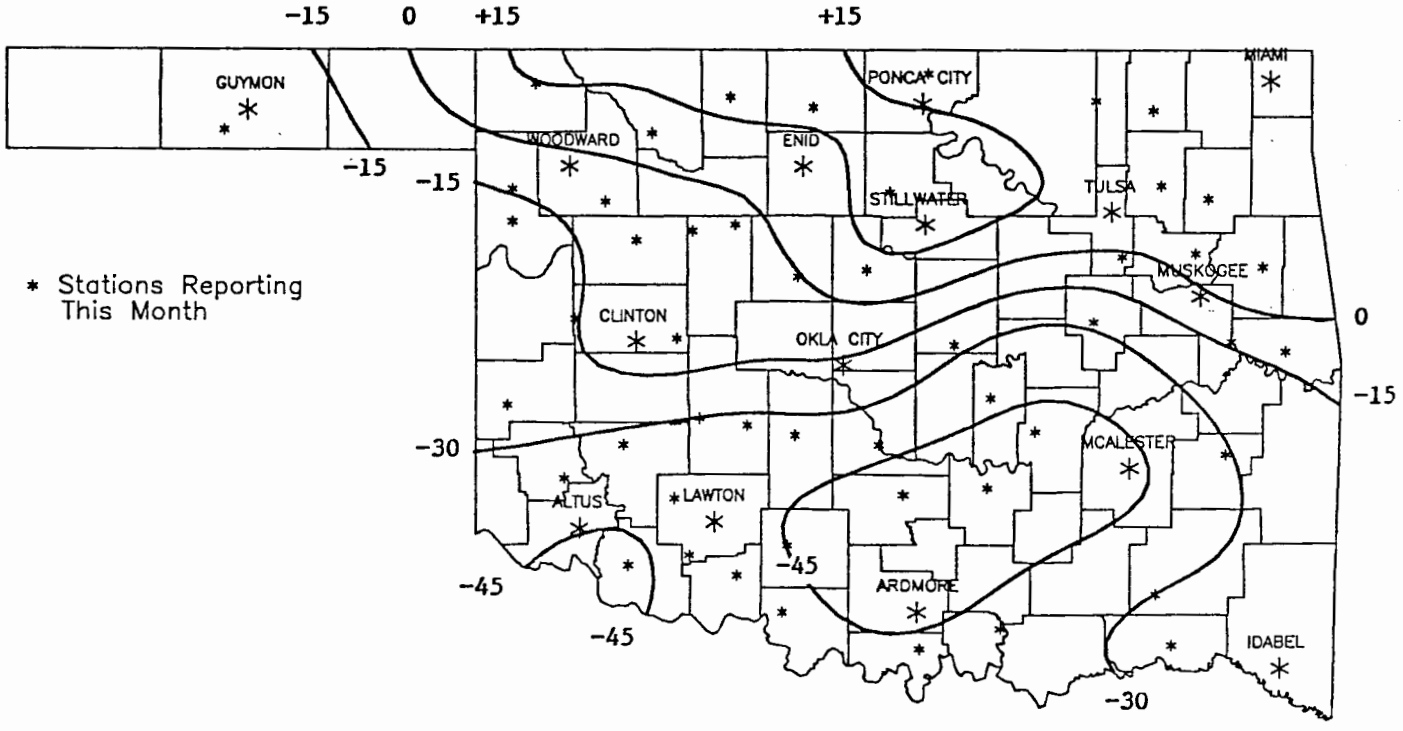
JULY 1991 AVERAGE MONTHLY TEMPERATURES
(Degrees F)



JULY 1991 DEVIATION FROM NORMAL TEMPERATURES
(Degrees F)

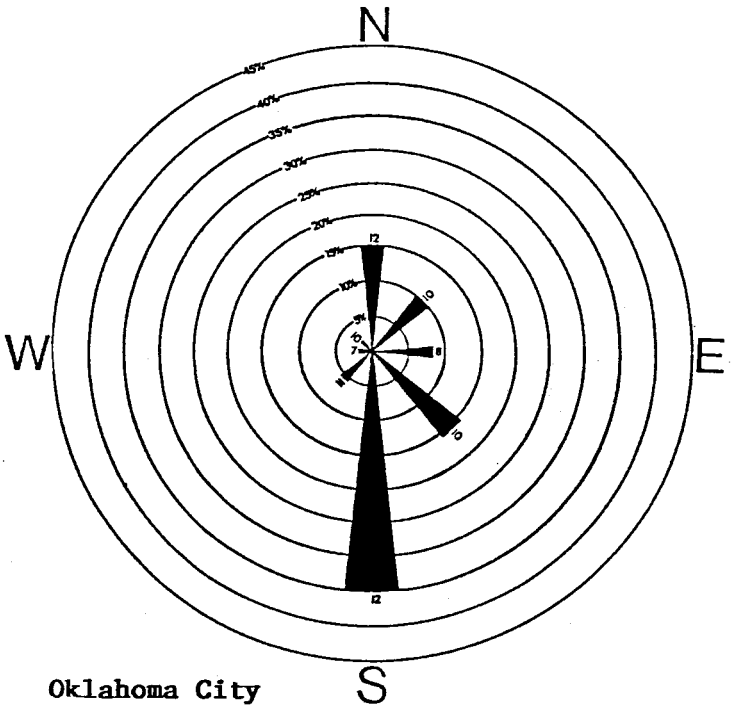


JULY 1991 COOLING DEGREE DAYS

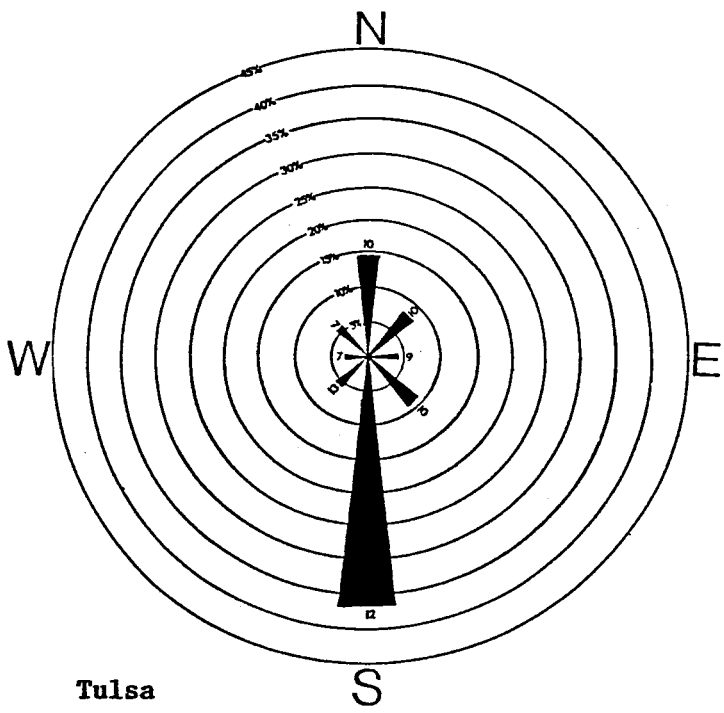


JULY 1991 DEVIATION FROM NORMAL COOLING DEGREE DAYS

September wind roses for Oklahoma City and Tulsa for 10-year (1965-1974) mean winds (data adapted from NOAA Airport Climatology Series). Percents represent the percentages for winds coming from a direction. The numbers at the end of the bars indicate the average speed (miles per hour) of winds from that direction.



Oklahoma City



Tulsa

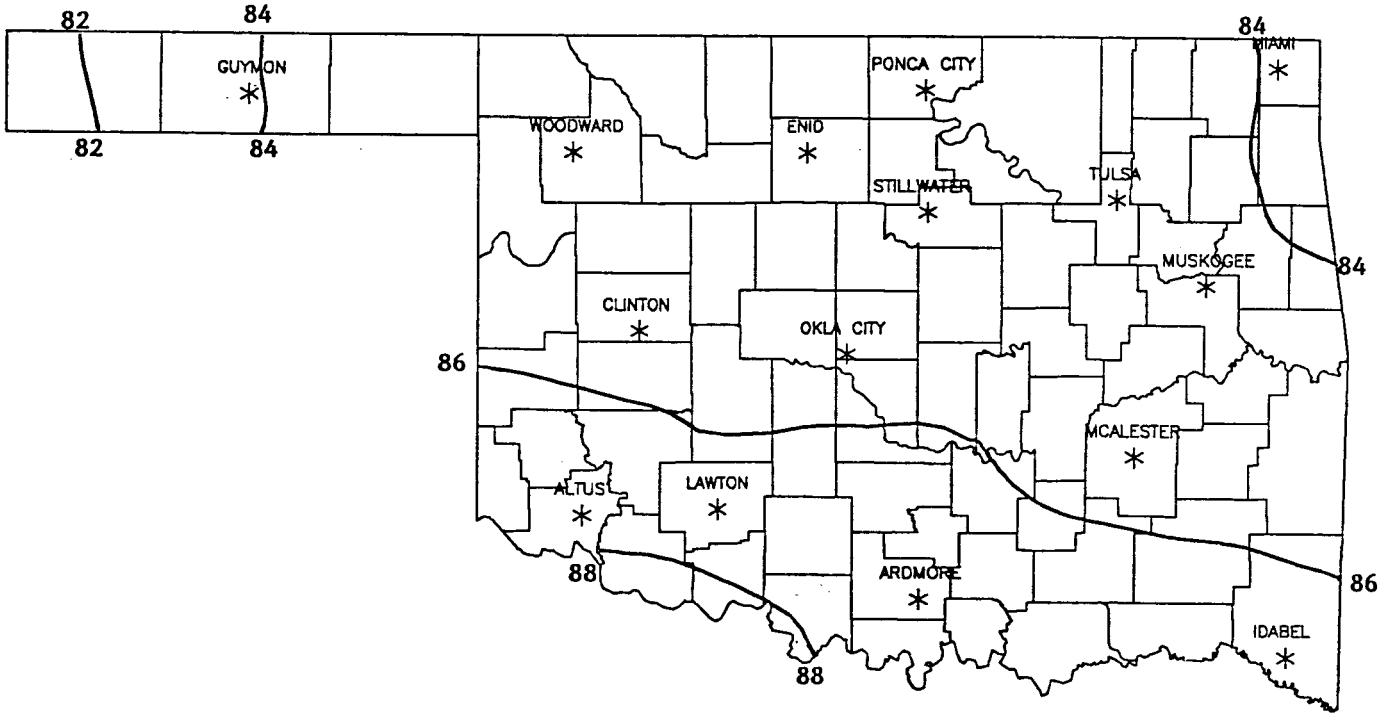
SEPTEMBER 1991 SUNRISE AND SUNSET

Oklahoma City

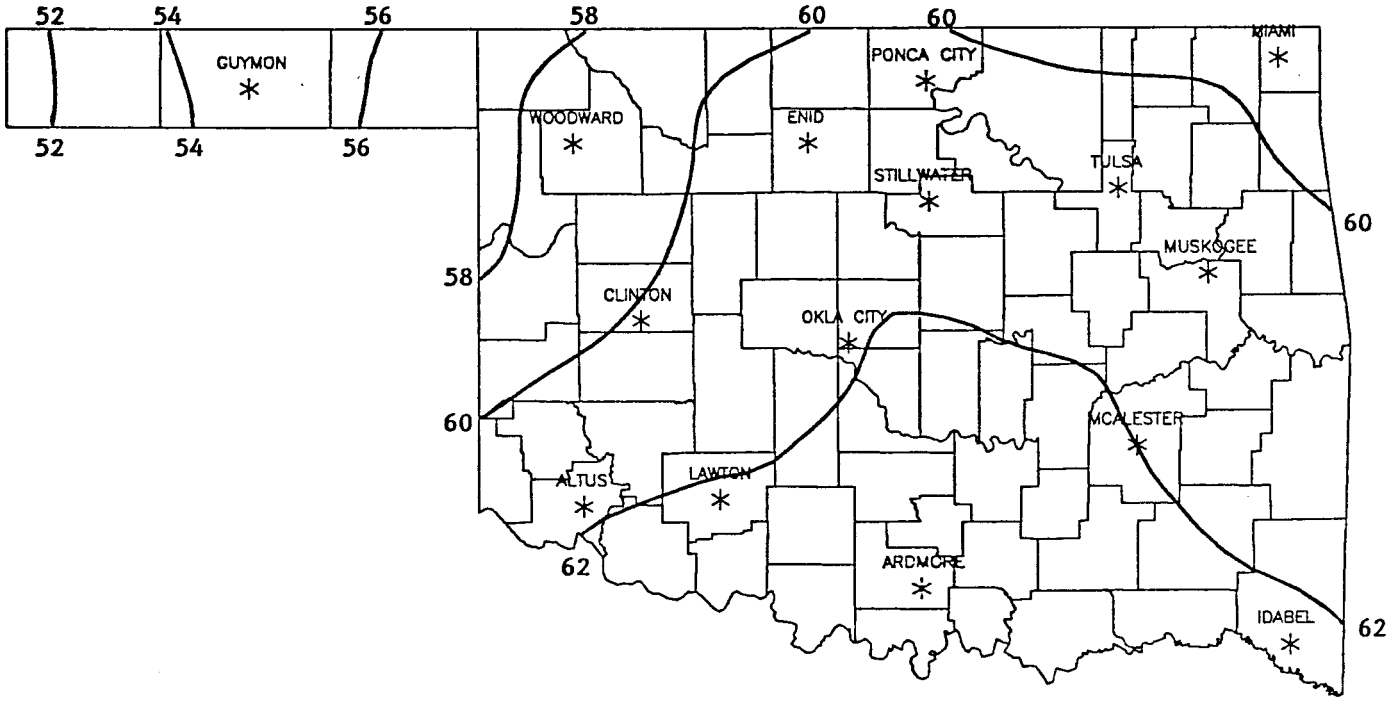
DATE	SUNRISE	SUNSET	DAYLIGHT
910901	7: 2AM	7:59PM LT	12:58
910902	7: 2AM	7:58PM LT	12:56
910903	7: 3AM	7:56PM LT	12:53
910904	7: 4AM	7:55PM LT	12:51
910905	7: 4AM	7:54PM LT	12:49
910906	7: 5AM	7:52PM LT	12:47
910907	7: 6AM	7:51PM LT	12:45
910908	7: 7AM	7:49PM LT	12:43
910909	7: 7AM	7:48PM LT	12:41
910910	7: 8AM	7:46PM LT	12:38
910911	7: 9AM	7:45PM LT	12:36
910912	7: 9AM	7:44PM LT	12:34
910913	7:10AM	7:42PM LT	12:32
910914	7:11AM	7:41PM LT	12:30
910915	7:12AM	7:39PM LT	12:28
910916	7:12AM	7:38PM LT	12:25
910917	7:13AM	7:36PM LT	12:23
910918	7:14AM	7:35PM LT	12:21
910919	7:15AM	7:33PM LT	12:19
910920	7:15AM	7:32PM LT	12:16
910921	7:16AM	7:30PM LT	12:14
910922	7:17AM	7:29PM LT	12:12
910923	7:18AM	7:27PM LT	12:10
910924	7:18AM	7:26PM LT	12: 8
910925	7:19AM	7:24PM LT	12: 5
910926	7:20AM	7:23PM LT	12: 3
910927	7:21AM	7:21PM LT	12: 1
910928	7:21AM	7:20PM LT	11:59
910929	7:22AM	7:19PM LT	11:57
910930	7:23AM	7:17PM LT	11:54

Tulsa

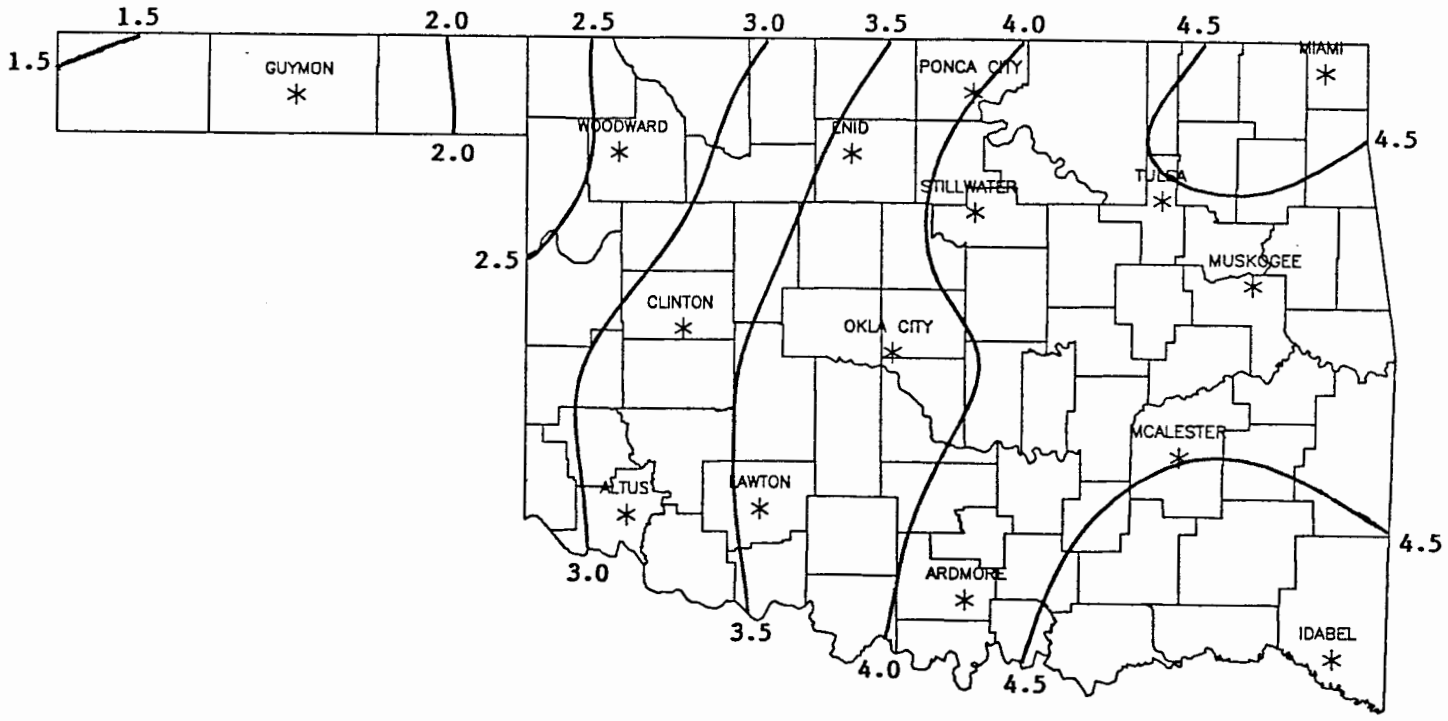
DATE	SUNRISE	SUNSET	DAYLIGHT
910901	6:54AM	7:53PM LT	12:59
910902	6:55AM	7:52PM LT	12:57
910903	6:56AM	7:50PM LT	12:55
910904	6:56AM	7:49PM LT	12:53
910905	6:57AM	7:48PM LT	12:50
910906	6:58AM	7:46PM LT	12:48
910907	6:59AM	7:45PM LT	12:46
910908	6:59AM	7:43PM LT	12:44
910909	7: 0AM	7:42PM LT	12:42
910910	7: 1AM	7:40PM LT	12:39
910911	7: 2AM	7:39PM LT	12:37
910912	7: 2AM	7:37PM LT	12:35
910913	7: 3AM	7:36PM LT	12:33
910914	7: 4AM	7:34PM LT	12:30
910915	7: 5AM	7:33PM LT	12:28
910916	7: 5AM	7:31PM LT	12:26
910917	7: 6AM	7:30PM LT	12:24
910918	7: 7AM	7:28PM LT	12:21
910919	7: 8AM	7:27PM LT	12:19
910920	7: 8AM	7:25PM LT	12:17
910921	7: 9AM	7:24PM LT	12:15
910922	7:10AM	7:22PM LT	12:12
910923	7:11AM	7:21PM LT	12:10
910924	7:11AM	7:19PM LT	12: 8
910925	7:12AM	7:18PM LT	12: 5
910926	7:13AM	7:16PM LT	12: 3
910927	7:14AM	7:15PM LT	12: 1
910928	7:15AM	7:13PM LT	11:59
910929	7:15AM	7:12PM LT	11:56
910930	7:16AM	7:10PM LT	11:54



30-YEAR MEAN SEPTEMBER DAILY MAXIMUM TEMPERATURE



30-YEAR MEAN SEPTEMBER DAILY MINIMUM TEMPERATURE



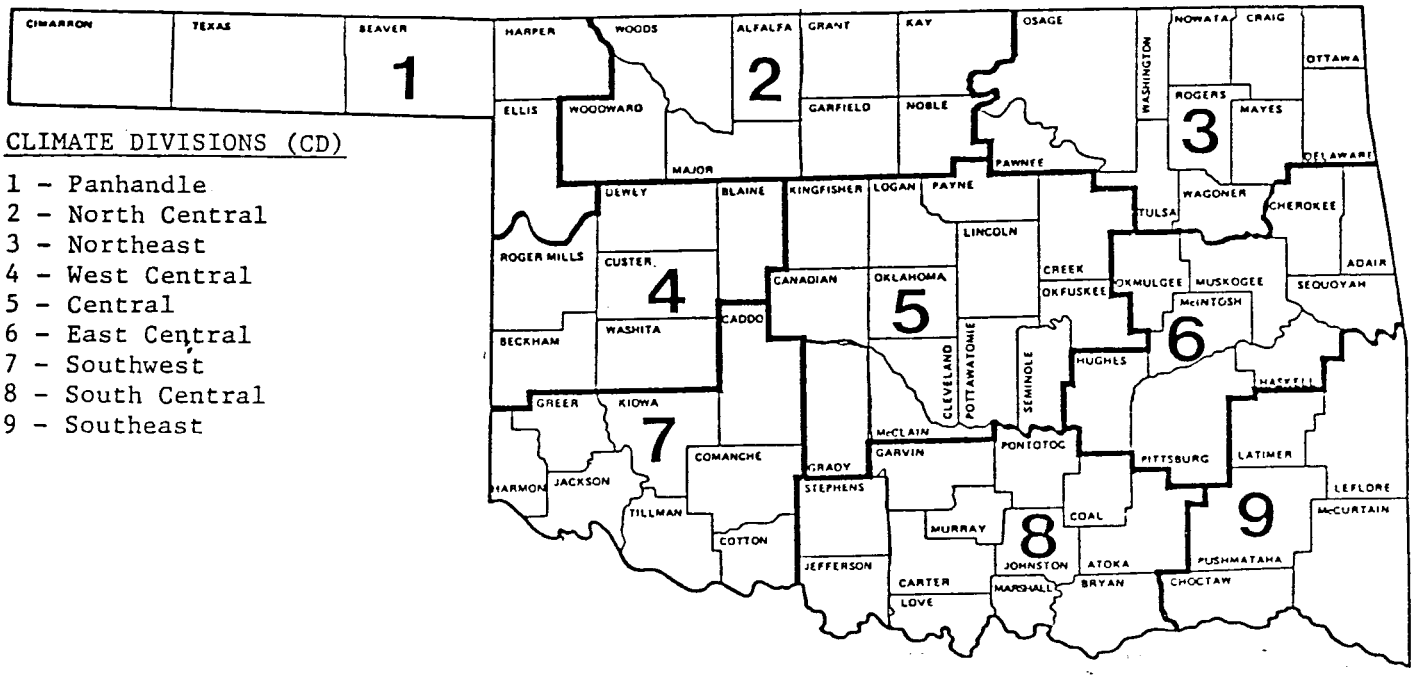
30-YEAR MEAN SEPTEMBER PRECIPITATION

90-DAY NATIONAL WEATHER SERVICE OUTLOOK

(August-October 1991)

Precipitation - Above Normal Statewide

Temperature - Near Normal Statewide



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 summed. 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 summed. 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.

OKLAHOMA CITY CLIMATE CALENDAR

September 1991

The data on this calendar are for Oklahoma City. Normal values are calculated for the period 1948-1988. Extremes are found for the period of record (1924-present).

Normal 1	Actual	Normal 2	Actual	Normal 3	Actual	Normal 4	Actual	Normal 5	Actual	Normal 6	Actual	Normal 7	Actual
89.0 max		89.0 max		90.0 max		89.0 max		88.0 max		89.0 max		88.0 max	
66.0 min		66.0 min		66.0 min		66.0 min		66.0 min		66.0 min		66.0 min	
.160 ppt		.110 ppt		.260 ppt		.070 ppt		.060 ppt		.030 ppt		.080 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	105-1939	Highest Max	104-1939	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	72-1962	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	52-1950
Highest Min	77-1936	Highest Min	78-1936	Highest Min	80-1939	Highest Min	79-1936	Highest Min	77-1939	Highest Min	76-1936	Highest Min	77-1936
Greatest Ppt	2.53-1974	Greatest Ppt	2.04-1969	Greatest Ppt	3.16-1926	Greatest Ppt	1.74-1940	Greatest Ppt	.70-1926	Greatest Ppt	.75-1973	Greatest Ppt	.86-1951

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		86.0 max		87.0 max		86.0 max		85.0 max		84.0 max	
65.0 min		65.0 min		64.0 min		63.0 min		63.0 min		62.0 min		62.0 min	
.030 ppt		.070 ppt		.090 ppt		.040 ppt		.170 ppt		.160 ppt		.210 ppt	
0 hdd		0 hdd		0 hdd		0 hdd		0 hdd		0 hdd		1 hdd	
12 cdd		11 cdd		10 cdd		11 cdd		10 cdd		9 cdd		9 cdd	
Highest Max	98-1936	Highest Max	99-1936	Highest Max	100-1936	Highest Max	98-1930	Highest Max	102-1930	Highest Max	102-1965	Highest Max	102-1965
Lowest Max	75-1957	Lowest Max	67-1928	Lowest Max	64-1928	Lowest Max	70-1928	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	48-1959	Lowest Min	49-1989	Lowest Min	47-1961
Highest Min	77-1936	Highest Min	77-1936	Highest Min	77-1938	Highest Min	77-1936	Highest Min	78-1930	Highest Min	78-1978	Highest Min	77-1931
Greatest Ppt	2.66-1940	Greatest Ppt	1.22-1951	Greatest Ppt	1.98-1934	Greatest Ppt	1.69-1943	Greatest Ppt	3.03-1961	Greatest Ppt	1.16-1989	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
83.0 max		83.0 max		82.0 max		85.0 max		84.0 max		84.0 max		82.0 max	
63.0 min		62.0 min		62.0 min		62.0 min		62.0 min		61.0 min		61.0 min	
.130 ppt		.130 ppt		.130 ppt		.090 ppt		.060 ppt		.090 ppt		.100 ppt	
1 hdd		0 hdd		1 hdd		1 hdd		0 hdd		1 hdd		1 hdd	
9 cdd		9 cdd		8 cdd		9 cdd		9 cdd		8 cdd		7 cdd	
Highest Max	100-1965	Highest Max	101-1978	Highest Max	99-1931	Highest Max	99-1952	Highest Max	98-1954	Highest Max	100-1954	Highest Max	97-1980
Lowest Max	58-1949	Lowest Max	66-1966	Lowest Max	58-1973	Lowest Max	53-1971	Lowest Max	56-1971	Lowest Max	56-1983	Lowest Max	61-1934
Lowest Min	47-1961	Lowest Min	47-1979	Lowest Min	46-1981	Lowest Min	42-1981	Lowest Min	44-1971	Lowest Min	41-1971	Lowest Min	39-1983
Highest Min	78-1931	Highest Min	76-1965	Highest Min	78-1978	Highest Min	78-1978	Highest Min	76-1978	Highest Min	76-1931	Highest Min	76-1931
Greatest Ppt	2.30-1982	Greatest Ppt	1.15-1969	Greatest Ppt	1.42-1936	Greatest Ppt	1.17-1971	Greatest Ppt	1.49-1942	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
83.0 max		82.0 max		81.0 max		81.0 max		80.0 max		80.0 max		80.0 max	
60.0 min		60.0 min		59.0 min		59.0 min		58.0 min		59.0 min		58.0 min	
.280 ppt		.060 ppt		.180 ppt		.060 ppt		.150 ppt		.120 ppt		.050 ppt	
1 hdd		1 hdd		1 hdd		1 hdd		1 hdd		1 hdd		2 hdd	
7 cdd		7 cdd		6 cdd		6 cdd		6 cdd		6 cdd		6 cdd	
Highest Max	96-1956	Highest Max	93-1984	Highest Max	98-1939	Highest Max	97-1938	Highest Max	98-1977	Highest Max	96-1953	Highest Max	103-1953
Lowest Max	64-1972	Lowest Max	59-1989	Lowest Max	56-1974	Lowest Max	53-1926	Lowest Max	46-1936	Lowest Max	48-1926	Lowest Max	53-1926
Lowest Min	45-1975	Lowest Min	42-1989	Lowest Min	36-1989	Lowest Min	41-1989	Lowest Min	39-1942	Lowest Min	38-1942	Lowest Min	41-1936
Highest Min	76-1931	Highest Min	75-1931	Highest Min	74-1931	Highest Min	74-1933	Highest Min	73-1981	Highest Min	70-1971	Highest Min	73-1977
Greatest Ppt	7.53-1970	Greatest Ppt	1.47-1988	Greatest Ppt	3.87-1959	Greatest Ppt	.95-1955	Greatest Ppt	1.74-1973	Greatest Ppt	1.75-1936	Greatest Ppt	2.88-1945

Normal 29	Actual	Normal 30	Actual
80.0 max		79.0 max	
57.0 min		55.0 min	
.110 ppt		.090 ppt	
2 hdd		3 hdd	
6 cdd		5 cdd	
Highest Max	98-1953	Highest Max	100-1977
Lowest Max	47-1945	Lowest Max	54-1985
Lowest Min	41-1976	Lowest Min	37-1972
Highest Min	71-1933	Highest Min	72-1977
Greatest Ppt	2.90-1986	Greatest Ppt	1.79-1986

SEPTEMBER AVERAGES

Temperature	:	73.3°F
Precipitation	:	3.37"
Heating Degree Days	:	19
Cooling Degree Days	:	275

TULSA CLIMATE CALENDAR

September 1991

The data on this calendar are for Tulsa. Normal values are calculated for the period 1948-1987. Temperature extremes are for the period 1905-1990; precipitation extremes are for the period 1948-1990.

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	
.160 ppt		.180 ppt		.190 ppt		.220 ppt		.100 ppt		.160 ppt		.060 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	106-1936
Lowest Max	77-1974	Lowest Max	68-1974	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	76-1963	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	
.070 ppt		.130 ppt		.030 ppt		.140 ppt		.150 ppt		.160 ppt		.250 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	105-1938	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	75-1983	Highest Min	74-1986	Highest Min	77-1983	Highest Min	75-1984	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	
.250 ppt		.250 ppt		.090 ppt		.110 ppt		.200 ppt		.070 ppt		.070 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	68-1971	Lowest Max	62-1975
Lowest Min	46-1961	Lowest Min	45-1934	Lowest Min	44-1981	Lowest Min	42-1981	Lowest Min	45-1938	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	
.160 ppt		.130 ppt		.140 ppt		.110 ppt		.140 ppt		.100 ppt		.030 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	
.160 ppt		.090 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