

**OKLAHOMA  
MONTHLY SUMMARY  
REVISED  
MAY 1999**

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## MONTHLY SUMMARY FOR MAY 1999

Oklahoma suffered a devastating tornado outbreak on May 3-4. Upwards of 50 tornadoes killed at least 44 people in central Oklahoma in the state's deadliest tornado event since the 1947 Woodward tornado. One tornado on the 3<sup>rd</sup> produced F5 damage in the Bridge Creek community in northeastern Grady County and across northern Moore (Cleveland County) and F4 damage in southern Oklahoma City, extending into Del City and Midwest City (Oklahoma County). Most of the fatalities occurred in these densely populated areas. A mobile Doppler radar operated by researchers from the University of Oklahoma and the National Severe Storms Laboratory recorded a maximum wind of 318 miles per hour in the funnel, but above the level of surface winds.

Storms that struck Dover (Kingfisher) and Mulhall (Logan) on the 3<sup>rd</sup> gained F4 status and also produced fatalities. Additional F3 damage was reported near Apache (Caddo), between Chickasha and Verden (Grady), from Sparks to Stroud (Lincoln), and near Omega (Kingfisher) on the 3<sup>rd</sup> and near Short (Sequoyah) on the morning of the 4<sup>th</sup>. Tornadoes were reported in 29 counties from late afternoon on the 3<sup>rd</sup> through mid-day on the 4<sup>th</sup>. The final accounting is not yet complete, but the month's tornado total probably will surpass the state record for a single month (61 in May 1960).

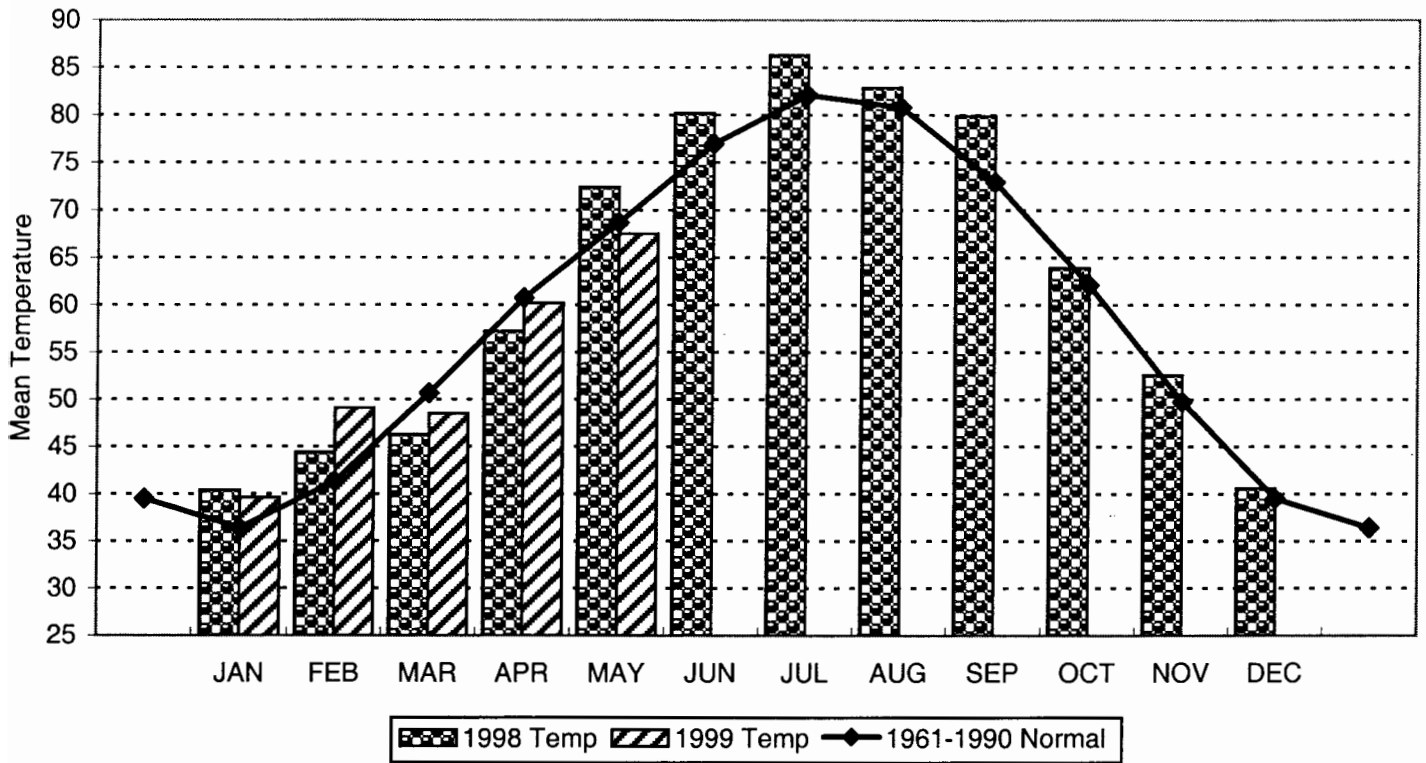
Overall, May 1999 was a month that was wetter than normal. Precipitation, averaged statewide, totaled 5.51 inches, according to preliminary data from the National Weather Service. The monthly total was 0.65 inch greater than normal and was the 40<sup>th</sup> greatest May rainfall since 1892. The spring season just completed was the 7<sup>th</sup> wettest of the 108 years on record, producing a total of 15.48 inches of precipitation (4.72 inches greater than normal). The year-to-date precipitation total of 18.55 inches is 4.80 inches greater than normal, ranking 1999 as the 12<sup>th</sup> wettest January-through-May on record in Oklahoma.

Frequent rainfall and abundant cloudiness held temperatures down for the most part. The month's average temperature, statewide, was 67.5 degrees, 1.2 degrees less than normal and the 35<sup>th</sup> lowest May temperature on record in Oklahoma. This completed the 30<sup>th</sup> coolest spring on record. The March-through-May average temperature of 58.7 degrees was 1.3 degrees lower than normal. The year-to-date remains higher than normal with a statewide average of 53.0 degrees, 1.3 degrees greater than normal, the 29<sup>th</sup> warmest January-through-May over 108 years of available records.

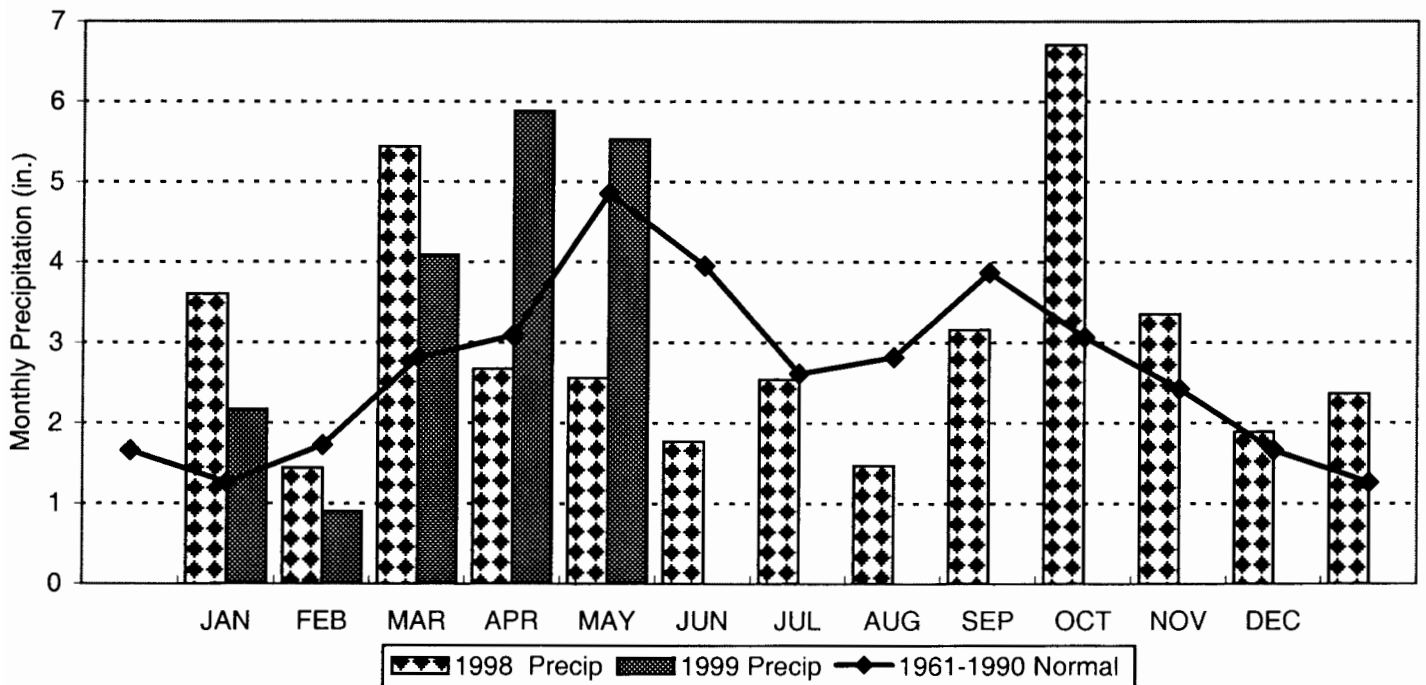
Tornadoes apart from the May 3-4 episode were reported near Beggs (Muskogee), Soper (Choctaw), and Box (Sequoyah) on the 11<sup>th</sup>. Oklahoma Mesonet maximum wind reports included 91 miles per hour at Mangum (Greer) and 85 miles per hour at May Ranch (Woods). Several flooding episodes were reported including: on the 4<sup>th</sup> in Rogers, Tulsa, Latimer and Ottawa counties; on the 11<sup>th</sup> in Cherokee, Mayes, Muskogee, Choctaw, Wagoner, and Pushmataha counties; on the 17<sup>th</sup> in Latimer and LeFlore counties; on the 21<sup>st</sup> in LeFlore County; and on the 22<sup>nd</sup> and 23<sup>rd</sup> in Kay, Tulsa, Cherokee, and Okmulgee counties. Softball-sized hail was reported near Altus (Jackson) and Minco (Grady) on the 4<sup>th</sup>.

Howard L. Johnson

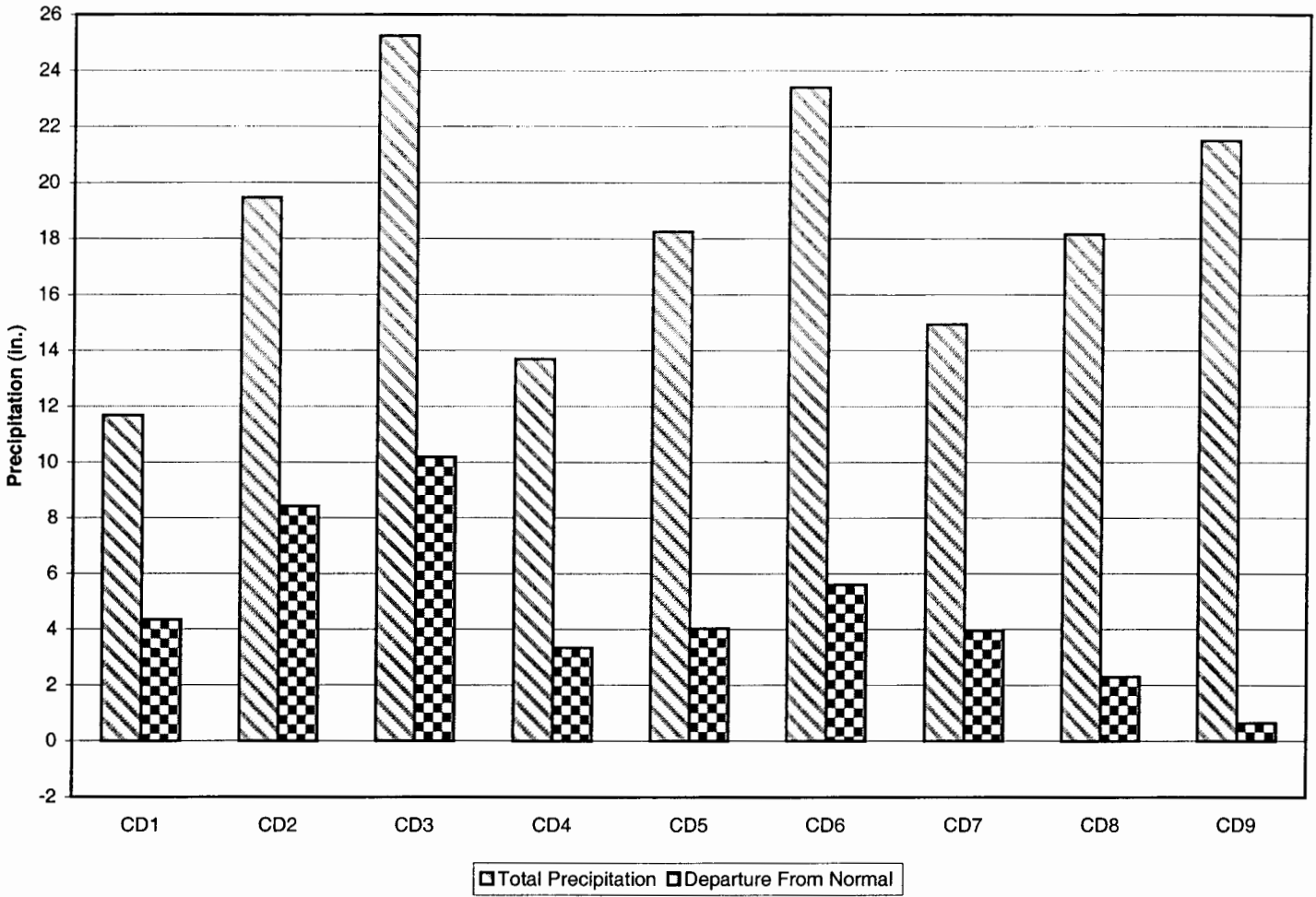
### 1998 and 1999 STATEWIDE TEMPERATURES Monthly Averages



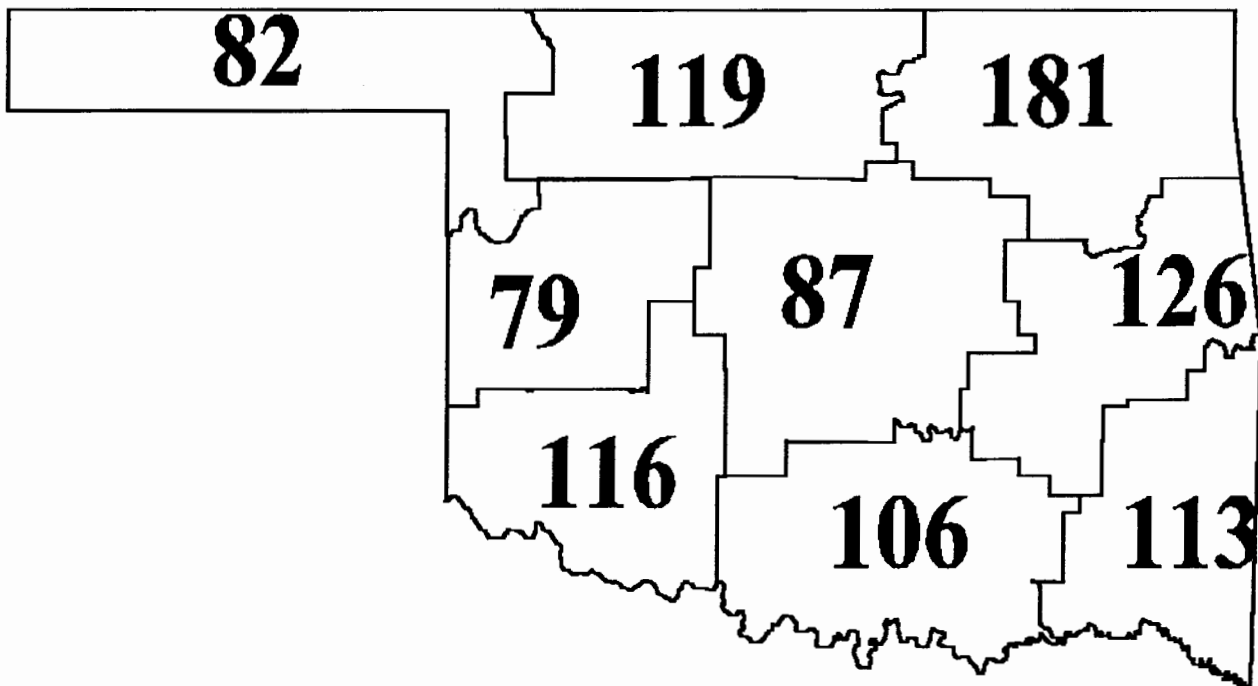
### 1998 and 1999 STATEWIDE PRECIPITATION Monthly Totals



### CD Averaged Precipitation January through April 1999



### CD PERCENT OF NORMAL PRECIPITATION May-99



**EXTREME VALUES OF TEMPERATURE AND PRECIPITATION IN EACH CLIMATE DIVISION  
MAY, 1999**

CD	MAX TEMP	DATE	LOCATION	MIN TEMP	DATE	LOCATION	24-HOUR PRECIP	DATE	LOCATION	MONTHLY PRECIP	LOCATION
1	95	30	BUFFALO	32	7	BOISE CITY	2.96	2	BOISE CITY	5.92	BOISE CITY
	95	31	BUFFALO	32	7	GOODWELL					
				32	7	KENTON					
2	96	16	FREEDOM	37	11	FT SUPPLY	3.15	16	JEFFERSON	8.94	PONCA CITY
3	88	28	WAGONER	40	22	KANSAS	2.78	17	CLEVELAND	11.08	HOMINY
4	95	16	ERICK	40	6	HAMMON	3.38	28	RETROP	5.81	CORDELL
5	91	22	CHICKASHA	40	7	GUTHRIE	2.76	29	SEMINOLE	8.06	EDMOND
	91	23	KINGFISHER	40	24	PURCELL					
	91	23	STILLWATER								
6	90	23	WEBBERS FALL	41	4	HANNA	4.12	4	WETUMKA	11.06	TAHLEQUAH
7	98	15	ALTUS	37	28	WICHITA MT	4.15	28	HOBART	8.89	FREDERICK
	98	16	ALTUS DAM								
	98	15	HOLLIS								
8	99	31	WAURIKA	36	7	TISHOMINGO	4.50	18	BOKCHITO	9.15	MCGEE CREEK
9	91	22	WILBURTON	40	6	BATTIEST	3.15	18	BENGAL	10.85	BATTIEST
				40	7	BATTIEST					

**TABLE OF 1998/1999 COMPARISONS**

**MAY  
Temperature (°F)**

**MAY  
Precipitation (in.)**

Station	1998	1999	1998	1999
Arnett	68.7	64.3	3.21	1.64
Enid	71.5	66.8	3.00	3.91
Tulsa	72.9	68.0	2.46	9.56
Elk City	71.5	66.8	2.42	3.69
Oklahoma City	72.5	68.0	2.13	3.10
McAlester	73.9	68.7	1.45	6.56
Altus Irr Station	75.3	69.3	1.01	5.73
Ardmore	76.9	70.6	0.23	4.32
Idabel	73.3	69.7	2.37	4.84

**EXTREMES**

VARIABLE	STATION	DIVISON	OBSERVATION	DATE
Minimum temperature (°F)	Boise City	1	32	7
	Goodwell	1	32	7
	Kenton	1	32	7
Maximum temperature (°F)	Waurika	8	99	31
Maximum 24-hour Precipitation	Bokchito	8	4.50"	18

**MAY 1999 SUMMARY FOR PANHANDLE DIVISION (CD1)**

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV		MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV		DAY	
					FROM NORM	MAX TEMP									FROM NORM	MAX 24-HR		
ARNETT	332	1	64.3	31	-1.4	90	17	40	8	91	5	69	-40	1.641	31	-2.49	0.56	2
BEAVER	593	1	63.2	31	-1.7	94	31	37	7	121	23	67	-29	1.710	31	-1.33	0.65	2
BOISE CITY	908	1	61.4	31	-1.9	91	22	32	7	154	34	43	-25	5.924	31	3.34	2.96	2
BUFFALO	1243	1	68.3	31	0.1	95	31	42	8	42	-15	143	-13	3.200	31	-1.16	1.60	2
FARGO	3070	1	****	0	****	****	0	****	0	****	****	****	****	2.632	31	-1.06	0.82	10
GAGE	3407	1	66.2	31	-1	93	16	37	7	73	8	110	-24	1.464	31	-1.89	0.80	2
GATE	3489	1	65.3	31	-1	91	31	42	7	80	-7	89	-38	3.912	31	0.88	1.34	2
GOODWELL	3628	1	62.6	31	-0.6	92	31	32	7	134	8	59	-13	2.190	31	-0.92	1.10	2
GUYMON	3835	1	62.0	31	****	92	31	36	7	139	****	45	****	0.710	31	****	0.44	27
HOOKER	4298	1	65.2	31	0.1	93	30	40	7	74	-21	81	-16	2.850	31	-0.11	2.14	1
KENTON	4766	1	61.9	27	****	90	22	32	7	118	****	36	****	2.823	29	****	2.19	2
LAVERNE	5045	1	****	0	****	****	0	****	0	****	****	****	****	3.692	31	0.40	1.13	2
RANGE	7412	1	****	0	****	****	0	****	0	****	****	****	****	2.091	31	****	1.23	2
REGNIER	7534	1	****	0	****	****	0	****	0	****	****	****	****	3.352	31	1.10	1.94	1
TURPIN	9017	1	63.6	31	****	93	31	39	7	105	****	62	****	1.330	31	****	0.96	3

**MAY 1999 SUMMARY FOR NORTH CENTRAL DIVISION (CD2)**

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV		MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV		DAY	
					FROM NORM	MAX TEMP									FROM NORM	MAX 24-HR		
ALVA	193	2	66.7	29	****	93	17	43	7	57	****	108	****	3.410	31	****	2.31	17
VANCE AFB	302	2	****	0	****	****	0	****	0	****	****	****	****	2.771	31	****	0.86	17
BILLINGS	755	2	65.5	31	-2.1	86	16	42	6	64	0	79	-67	5.400	31	0.89	1.65	17
BLACKWELL 2E	818	2	65.9	27	****	87	16	45	8	56	****	80	****	4.561	27	****	1.63	17
BRAMAN	1075	2	****	0	****	****	0	****	0	****	****	****	****	7.660	31	****	2.64	31
CEDARDALE	1620	2	****	0	****	****	0	****	0	****	****	****	****	2.131	31	****	0.68	2
CHEROKEE	1724	2	66.5	31	-2.5	93	16	41	7	56	20	103	-57	2.024	31	-1.87	1.40	17
ENID	2912	2	66.8	31	-2.3	90	31	45	7	53	23	107	-50	3.910	31	-0.89	1.07	4
FT SUPPLY	3304	2	66.4	31	0.5	92	16	37	11	74	-1	117	14	1.981	31	-1.71	0.53	24
FREEDOM	3358	2	66.8	30	-1.8	96	16	40	7	68	28	123	-32	1.730	30	****	0.57	25
GREAT SALT P	3740	2	67.9	31	0.1	92	16	45	6	39	-18	130	-13	3.700	31	-0.15	1.86	17
HARDY	3909	2	****	0	****	****	0	****	0	****	****	****	****	7.310	31	****	2.00	23
HELENA	4019	2	66.4	31	-0.1	91	16	41	6	61	-17	104	-21	3.782	31	-0.24	2.35	17
JEFFERSON	4573	2	68.4	31	-0.3	92	16	42	7	33	-10	139	-18	7.240	31	2.72	3.15	16
LAMONT	5013	2	****	0	****	****	0	****	0	****	****	****	****	6.490	31	****	2.45	17
MEDFORD	5768	2	****	0	****	****	0	****	0	****	****	****	****	6.660	31	****	2.56	16
MORRISON	6065	2	****	0	****	****	0	****	0	****	****	****	****	7.370	31	****	1.68	4
MUTUAL	6139	2	64.9	31	-1.1	91	17	40	6	79	-3	77	-36	1.330	31	-2.69	0.51	2
NEWKIRK	6278	2	64.8	31	-3.3	85	16	42	8	80	30	73	-73	7.442	31	2.55	2.13	23
PERRY	7012	2	69.1	31	-0.1	90	24	47	8	31	-6	159	-8	6.762	31	1.49	1.65	4
PONCA CITY	7201	2	68.7	31	0.9	89	15	44	7	22	-47	138	-18	8.940	31	4.38	1.89	31
RED ROCK	7505	2	****	0	****	****	0	****	0	****	****	****	****	8.560	31	3.95	3.14	22
WAYNOKA	9404	2	****	0	****	****	0	****	0	****	****	****	****	1.920	30	****	0.78	16
WOODWARD	9760	2	****	0	****	****	0	****	0	****	****	****	****	1.290	31	-2.67	0.37	11

MAY 1999 SUMMARY FOR NORTHEAST DIVISION (CD3)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV			MIN TEMP	DAY	HEAT			COOL			TOT PPT	NUM OBS	DEV		
					FROM NORM	MAX TEMP	DAY			DEG DAY	FROM NORM	DEG DAY	FROM NORM	DEG DAY	FROM NORM			MAX 24-HR	DAY	
BARNSDALL	535	3	67.1	31	-1.5	87	8	42	8	33	-1	97	-49	9.780	31	4.98	2.55	23		
BARTLESVILLE	548	3	67.4	31	-1.3	86	9	43	8	25	-10	99	-50	7.011	31	2.61	1.30	31		
BIXBY	782	3	66.9	31	-0.7	87	24	45	8	28	-23	85	-46	7.420	31	2.42	1.55	23		
BURBANK	1256	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.082	31	4.35	2.12	31		
CHELSEA	1717	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.050	31	*****	1.35	31		
CLAREMORE	1828	3	65.3	31	-1.7	84	9	44	8	52	-16	61	-69	8.510	31	3.87	1.88	12		
CLEVELAND 2	1902	3	66.3	29	*****	85	8	45	7	32	*****	69	*****	9.761	30	*****	2.78	17		
FORAKER	3250	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.630	31	-0.47	1.00	5		
HOLLOW	4258	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.461	31	4.44	2.12	5		
HOMINY	4289	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	11.082	31	6.53	1.78	22		
KANSAS	4672	3	64.5	26	*****	82	16	40	22	45	*****	32	*****	8.303	27	*****	2.30	23		
LENAPAH	5118	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.190	31	*****	2.07	31		
MANNFORD	5522	3	67.4	29	*****	87	8	42	18	29	*****	100	*****	8.401	30	*****	2.15	23		
MARAMEC	5540	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.482	31	4.69	2.27	23		
NOWATA	6485	3	66.9	29	*****	85	8	44	6	26	*****	82	*****	10.380	29	*****	2.00	21		
PAWHUSKA	6935	3	66.7	31	-1.3	85	8	42	8	36	-10	90	-49	8.981	31	4.14	2.01	4		
PAWNEE	6940	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.510	31	3.61	1.54	23		
PRYOR	7309	3	65.9	31	-1.1	85	10	42	1	50	-19	78	-52	8.703	31	4.03	2.65	12		
SKIATOOK	8258	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	10.360	31	5.67	1.93	5		
SPAVINAW	8380	3	68.7	31	0	84	10	47	8	16	-25	131	-26	8.151	31	3.38	1.75	4		
TULSA	8992	3	68.0	31	-1.3	87	8	48	13	21	-21	115	-60	9.555	31	3.96	2.30	4		
UPPER SPAV	9101	3	68.7	31	*****	87	8	46	1	14	*****	129	*****	8.863	31	*****	1.83	31		
VINITA	9203	3	66.5	30	-0.5	83	10	44	7	24	-46	70	-62	6.700	30	*****	1.10	31		
WAGONER	9247	3	69.1	31	0.1	88	28	45	7	15	-20	141	-17	10.511	31	5.56	2.20	4		
WANN	9298	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.370	31	*****	2.54	31		
WYNONA	9792	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.691	31	*****	1.48	23		

MAY 1999 SUMMARY FOR WEST CENTRAL DIVISION (CD 4)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV			MIN TEMP	DAY	HEAT			COOL			TOT PPT	NUM OBS	DEV		
					FROM NORM	MAX TEMP	DAY			DEG DAY	FROM NORM	DEG DAY	FROM NORM	DEG DAY	FROM NORM			MAX 24-HR	DAY	
CANTON DAM	1445	4	67.3	31	-0.1	93	16	45	13	50	-5	121	-7	1.591	31	-2.75	0.55	10		
CLINTON	1909	4	66.6	29	*****	94	16	43	7	56	*****	103	*****	3.632	29	*****	2.10	27		
COLONY	2039	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.502	31	*****	1.33	13		
CORDELL	2125	4	67.3	31	-1.8	94	16	43	7	52	23	124	-33	5.811	31	1.12	3.20	28		
ELK CITY	2849	4	66.8	31	-1.8	94	16	45	6	54	27	109	-30	3.690	31	-0.88	1.60	28		
ERICK	2944	4	66.5	31	-1.8	95	16	41	7	62	22	107	-35	4.380	31	0.29	1.20	2		
GEARY	3497	4	66.4	8	*****	89	17	49	19	9	*****	20	*****	1.650	9	*****	0.90	17		
HAMMON	3871	4	65.4	31	-1.5	92	16	40	6	79	17	91	-31	4.050	31	-0.19	1.02	28		
LEEDEY	5090	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.370	31	-0.05	1.25	24		
MACKIE	5463	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.100	31	*****	0.79	10		
MORAVIA	6035	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.501	31	-0.17	2.22	28		
OKEENE	6629	4	71.2	19	*****	92	15	45	13	6	*****	124	*****	1.490	22	*****	0.46	10		
RETROP	7565	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.820	31	*****	3.38	28		
REYDON	7579	4	64.3	22	*****	92	16	42	7	68	*****	53	*****	1.950	22	*****	0.76	2		
SAYRE	7952	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.240	31	-0.09	1.85	28		
SWEETWATER	8652	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.560	31	*****	1.06	2		
TALOGA	8708	4	67.1	31	-0.5	93	16	42	7	47	-5	112	-21	1.953	31	-2.79	0.78	17		
THOMAS	8815	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.010	31	*****	1.10	10		
VICI	9172	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.620	31	-2.79	0.63	1		
WATONGA	9364	4	68.3	31	-0.1	91	15	43	6	36	-1	138	-5	2.325	31	-2.29	0.51	10		
WEATHERFORD	9422	4	67.8	30	-0.5	91	15	43	6	38	1	122	-17	4.530	30	*****	1.50	22		

MAY 1999 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	*****	*****	*****	*****	1.670	31	*****	0.95	23
ARCADIA	288	5	****	0	****	****	0	****	0	*****	*****	*****	*****	4.821	31	*****	1.74	9
BLANCHARD	830	5	69.2	31	-0.4	89	22	45	7	25	4	154	-10	2.605	31	-2.35	0.92	10
BRISTOW	1144	5	67.7	31	-1.5	89	22	45	13	35	8	119	-38	5.230	31	-0.28	1.58	23
CHANDLER	1684	5	66.7	30	-2.5	88	23	46	7	38	11	90	-68	4.760	30	*****	1.02	10
CHICKASHA EXP	1750	5	70.3	31	-0.1	91	22	46	18	16	3	181	-1	3.671	31	-1.01	1.18	23
COX CITY	2196	5	****	0	****	****	0	****	0	*****	*****	*****	*****	4.640	31	*****	1.38	23
CRESCENT	2242	5	****	0	****	****	0	****	0	*****	*****	*****	*****	2.900	31	*****	0.90	10
CUSHING	2318	5	67.1	30	-0.9	88	23	48	7	32	-17	94	-48	5.301	30	*****	1.25	4
EDMOND	2788	5	****	0	****	****	0	****	0	*****	*****	*****	*****	8.060	31	*****	2.20	28
EL RENO	2818	5	68.5	31	-0.2	89	23	47	6	34	8	144	3	6.150	31	0.74	2.05	10
GUTHRIE	3821	5	67.1	30	-2.6	90	23	40	7	49	21	110	-64	5.122	30	*****	2.00	4
HENNESSEY	4055	5	67.1	21	****	87	30	41	7	30	*****	75	*****	4.023	31	-0.72	0.85	10
INGALLS	4489	5	****	0	****	****	0	****	0	*****	*****	*****	*****	7.320	31	*****	1.68	5
KINGFISHER	4861	5	67.8	31	-1.6	91	23	42	6	50	20	136	-32	3.080	31	-1.55	1.26	10
KONAWA	4915	5	****	0	****	****	0	****	0	*****	*****	*****	*****	6.930	31	1.23	1.80	16
MARSHALL	5589	5	****	0	****	****	0	****	0	*****	*****	*****	*****	4.410	31	-0.47	1.05	10
MEEKER	5779	5	65.7	31	-3.3	87	23	46	13	58	29	80	-73	3.690	31	-1.88	1.33	4
MULHALL	6110	5	****	0	****	****	0	****	0	*****	*****	*****	*****	2.190	31	*****	0.81	4
NORMAN NWS	6386	5	67.4	31	-2.3	87	22	46	6	38	23	113	-48	2.823	31	-2.34	0.82	9
OKEMAH	6638	5	70.5	31	1.5	90	22	51	7	4	-20	175	27	7.180	31	1.88	1.33	4
OKLAHOMA CTY	6659	5	****	0	****	****	0	****	0	*****	*****	*****	*****	3.194	31	*****	1.07	10
OKLAHOMA CTY	6661	5	68.0	31	-0.4	89	22	45	7	31	0	126	-11	3.104	31	-2.12	0.93	9
PERKINS	7003	5	****	0	****	****	0	****	0	*****	*****	*****	*****	4.140	31	-1.35	2.09	5
PIEDMONT	7068	5	****	0	****	****	0	****	0	*****	*****	*****	*****	3.960	31	*****	1.44	10
PRAGUE	7264	5	****	0	****	****	0	****	0	*****	*****	*****	*****	5.841	31	0.55	1.43	10
PURCELL	7327	5	65.9	30	-4.1	89	10	40	25	56	42	84	-85	4.520	31	-1.05	1.10	23
SEMINOLE	8042	5	67.9	30	-2.7	89	22	48	13	28	13	115	-74	7.371	31	2.14	2.76	29
SHAWNEE	8110	5	****	0	****	****	0	****	0	*****	*****	*****	*****	3.590	31	-2.08	0.96	10
STELLA	8479	5	****	0	****	****	0	****	0	*****	*****	*****	*****	3.731	31	****	1.19	10
STILLWATER	8501	5	67.9	31	0.2	91	23	46	13	37	-13	127	-6	4.522	31	-0.61	0.97	17
STROUD	8563	5	****	0	****	****	0	****	0	*****	*****	*****	*****	5.831	31	*****	2.61	4
TECUMSEH	8751	5	****	0	****	****	0	****	0	*****	*****	*****	*****	1.871	31	****	0.72	31
TROUSDALE	8960	5	67.4	31	****	87	23	45	7	36	*****	111	*****	4.950	31	*****	1.04	17
UNION CITY	9086	5	****	0	****	****	0	****	0	*****	*****	*****	*****	4.935	31	-0.66	2.28	5
WELTY	9479	5	****	0	****	****	0	****	0	*****	*****	*****	*****	6.831	31	*****	1.72	4
WEWOKA	9575	5	****	0	****	****	0	****	0	*****	*****	*****	*****	5.700	31	0.49	2.02	10

MAY 1999 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	*****	*****	*****	*****	5.450	31	*****	1.66	10
BEGGS	631	6	****	0	****	****	0	****	0	*****	*****	*****	*****	7.880	31	*****	2.21	23
CALVIN	1391	6	****	0	****	****	0	****	0	*****	*****	*****	*****	4.040	31	-1.64	2.02	11
CHECOTAH	1711	6	****	0	****	****	0	****	0	*****	*****	*****	*****	6.151	31	0.73	1.00	5
CLAYTON	1858	6	****	0	****	****	0	****	0	*****	*****	*****	*****	6.300	31	*****	1.45	10
DEWAR	2485	6	****	0	****	****	0	****	0	*****	*****	*****	*****	8.997	31	3.77	4.00	4
DUSTIN	2690	6	****	0	****	****	0	****	0	*****	*****	*****	*****	4.830	31	*****	1.25	10
EUFULA	2993	6	70.0	31	-0.4	89	22	48	1	7	-10	161	-23	7.260	31	1.58	1.25	31
HANNA	3884	6	67.9	31	-1.6	89	22	41	4	26	8	115	-43	4.263	31	-1.75	1.04	10
HASKELL	3956	6	****	0	****	****	0	****	0	*****	*****	*****	*****	9.000	31	3.79	2.88	12
HOLDENVILLE	4235	6	68.8	31	-0.6	89	24	47	6	21	1	140	-16	7.170	31	1.78	1.92	10
LAKE EUFAULA	4975	6	66.9	29	****	86	23	49	7	26	*****	82	*****	5.000	29	*****	0.95	23
LYONS	5437	6	****	0	****	****	0	****	0	*****	*****	*****	*****	7.520	31	1.91	1.46	18
MARBLE CITY	5546	6	****	0	****	****	0	****	0	*****	*****	*****	*****	5.800	31	*****	1.26	23
MCALESTER	5664	6	68.7	31	-0.4	88	22	44	7	23	-13	138	-24	6.558	31	0.67	2.01	11
MCCURTAIN	5693	6	69.3	31	-0.4	89	14	47	1	15	-12	147	-24	7.661	31	1.62	2.00	18
MUSKOGEE	6130	6	67.8	31	-1.3	87	22	48	1	20	-14	106	-54	6.644	31	1.52	1.90	4
OKMULGEE	6670	6	****	0	****	****	0	****	0	*****	*****	*****	*****	*****	0	*****	*****	0
OKTAHA	6678	6	****	0	****	****	0	****	0	*****	*****	*****	*****	6.150	31	*****	1.38	23
SALLISAW	7862	6	68.1	31	-1.3	87	23	49	13	15	-12	113	-52	7.280	31	1.47	2.36	5
SCIPIO	7979	6	****	0	****	****	0	****	0	*****	*****	*****	*****	4.250	31	*****	1.37	10
SHORT	8170	6	****	0	****	****	0	****	0	*****	*****	*****	*****	8.740	31	*****	2.57	10
STILWELL	8506	6	64.6	31	-2.8	83	16	42	13	56	4	43	-83	8.500	31	2.83	2.10	5
TAHLEQUAH	8677	6	66.6	31	-1.4	83	22	42	7	36	-27	85	-70	11.061	31	5.68	2.28	4
WEBBERS FALL	9445	6	67.0	31	-1.5	90	23	44	8	36	-6	99	-52	5.071	31	-0.57	1.00	23
WESTVILLE	9523	6	****	0	****	****	0	****	0	*****	*****	*****	*****	7.880	31	*****	1.70	31
WETUMKA	9571	6	****	0	****	****	0	****	0	*****	*****	*****	*****	10.051	31	4.76	4.12	4



MAY 1999 SUMMARY FOR SOUTHWEST DIVISION (CD7)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV		MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV		DAY	
					FROM NORM	MAX TEMP									FROM NORM	MAX 24-HR		
ALTUS	179	7	69.3	31	-2.3	98	15	43	7	24	12	158	-59	5.730	31	1.50	1.48	26
ALTUS DAM	184	7	69.4	31	-0.7	98	16	43	7	35	14	171	-8	4.820	31	0.41	1.24	28
ANADARKO	224	7	66.5	31	-3.2	87	23	42	7	60	37	105	-64	4.650	31	-0.03	1.63	10
APACHE	260	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.600	31	-1.41	1.02	10
ALTUS AFB	447	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.922	28	*****	2.24	28
CARNEGIE	1504	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.652	31	-0.47	1.49	9
CHATTANOOGA	1706	7	68.9	29	*****	94	23	41	8	32	*****	144	*****	5.150	29	*****	1.52	17
DUNCAN 11 W	2668	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.974	31	*****	0.69	17
FREDERICK	3353	7	69.9	31	-0.4	96	15	41	6	26	7	179	-4	8.890	31	4.59	2.12	27
HEADRICK	3998	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.211	31	*****	1.54	28
HOBART	4204	7	69.9	26	*****	95	15	40	7	26	*****	154	*****	6.272	27	*****	4.15	28
HOLLIS	4249	7	69.8	31	-1.4	98	15	43	7	32	15	180	-29	5.490	31	1.97	1.45	21
LAWTON	5063	7	69.6	31	-0.4	91	16	49	8	20	5	162	-8	3.821	31	-1.10	0.85	10
LOOKEBA	5329	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.062	31	-0.75	1.87	10
MANGUM	5509	7	68.5	31	-2.9	97	22	43	6	44	30	154	-59	5.721	31	1.47	2.90	28
RANDLETT	7403	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.670	31	*****	0.97	10
ROOSEVELT	7727	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.260	31	2.41	2.45	28
SEDAN	8016	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.780	31	*****	3.20	28
SNYDER	8299	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.371	31	2.69	3.94	28
VINSON	9212	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.880	31	0.91	1.11	2
WALTERS	9278	7	69.1	30	-2.4	91	16	45	6	18	9	139	-72	4.170	31	-0.95	1.20	17
WICHITA MT	9629	7	66.9	31	-1.3	89	16	37	28	52	20	111	-20	3.461	31	-1.52	1.00	31
WILLOW	9668	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.720	31	*****	2.86	28

MAY 1999 SUMMARY FOR SOUTH CENTRAL DIVISION (CD8)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV		MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV		DAY	
					FROM NORM	MAX TEMP									FROM NORM	MAX 24-HR		
ADA	17	8	68.9	31	-0.7	88	23	47	6	17	-3	138	-26	6.262	31	0.64	1.62	23
ALLEN	147	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.550	31	*****	2.25	10
ARDMORE	292	8	70.6	31	-1.4	90	23	48	6	11	6	184	-39	4.321	31	-0.66	1.14	10
ATOKA DAM	394	8	68.3	19	*****	91	24	46	7	10	*****	73	*****	4.911	20	*****	1.70	10
BOKCHITO	917	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.540	31	*****	4.50	18
CANEY	1437	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.090	31	*****	2.67	10
CENTRAHOMA	1648	8	68.0	31	*****	89	23	44	7	23	*****	117	*****	6.900	31	*****	2.40	10
CHICKASAW	1745	8	67.7	30	-1.3	88	24	39	7	36	18	117	-25	4.681	31	-1.07	1.38	10
COLEMAN	2011	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.770	31	*****	2.60	10
COMANCHE	2054	8	69.7	31	*****	86	22	47	7	16	*****	161	*****	4.220	31	-0.79	1.20	10
DAISY	2354	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.871	31	-1.04	2.00	10
DUNCAN	2660	8	68.7	30	-1.3	88	23	46	7	18	3	130	-41	4.871	30	*****	1.41	10
ELMORE CITY	2872	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.820	31	*****	2.07	23
GRADY	3688	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.610	31	*****	1.55	10
HEALDTON	4001	8	68.9	30	-1.5	89	23	46	8	20	7	137	-43	5.480	30	*****	1.94	10
HENNEPIN	4052	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.210	31	*****	2.08	23
KETCHUM RAN	4780	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.390	31	*****	1.25	10
KINGSTON	4865	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.692	31	1.40	2.65	10
LEHIGH	5108	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.456	31	*****	2.10	10
LINDSAY	5216	8	67.8	31	-2.2	88	22	44	6	38	24	126	-43	5.320	31	-0.12	1.35	31
LOCO	5247	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.210	31	*****	0.70	23
MADILL	5468	8	70.6	31	-0.3	91	24	48	7	11	2	185	-6	6.510	31	1.16	2.75	10
MARIETTA	5563	8	68.5	31	-2.2	86	16	41	6	31	20	139	-49	5.730	31	0.80	2.25	10
MARLOW	5581	8	69.3	31	-0.2	90	22	40	7	28	12	161	5	4.980	31	-0.17	1.68	17
MCGEE CREEK	5713	8	69.7	31	*****	90	23	45	7	13	*****	160	*****	9.151	31	*****	3.28	12
PAULS VALLEY	6926	8	67.3	31	-3.3	87	23	43	7	40	23	111	-80	5.080	31	-0.66	1.50	23
PONTOTOC	7214	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.500	31	1.81	2.50	28
TISHOMINGO	8884	8	68.1	27	*****	95	22	36	7	15	*****	98	*****	7.770	30	*****	3.54	31
TUSSY	9032	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.720	31	*****	1.50	22
WAURIKA	9395	8	71.7	31	0	99	31	44	7	12	4	219	3	3.270	31	-1.13	0.95	9

MAY 1999 SUMMARY FOR SOUTHEAST DIVISION (CD9)

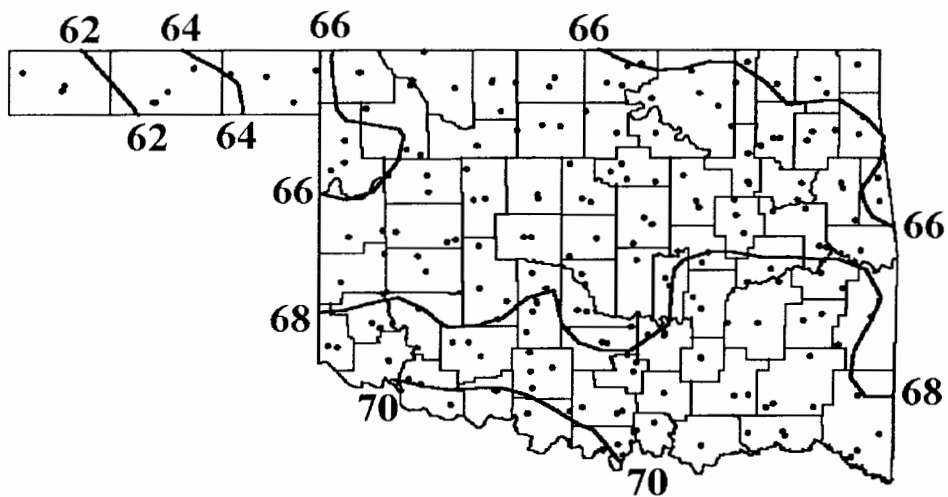
NAME	ID	CD	DEV					HEAT				COOL				DEV			
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	DEG DAY	FROM NORM	DEG DAY	FROM NORM	DEG DAY	TOT PPT	NUM OBS	FROM NORM	MAX 24-HR	DAY
ANTLERS	256	9	69.6	31	-0.1	88	23	42	7	15	-2	157	-5	6.320	31	0.12	2.00	11	
BATTIEST	567	9	66.5	21	*****	90	23	40	7	29	*****	61	*****	10.850	31	*****	2.88	12	
BENGAL	670	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.440	31	*****	3.15	18	
BOSWELL	980	9	69.0	31	-0.9	89	24	47	9	21	7	144	-23	6.120	31	0.45	2.37	12	
BROKEN BOW	1162	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.440	31	-0.88	1.56	12	
CARNASAW	1499	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.730	31	-2.06	1.04	10	
CARTER TWR	1544	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.080	31	1.26	2.03	10	
FANSHAWE	3065	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.320	31	-0.31	2.44	18	
HEAVENER	4008	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.270	31	1.77	1.92	22	
HUGO	4384	9	70.0	30	-1	97	21	48	6	14	4	165	-32	2.250	30	*****	1.25	9	
IDABEL	4451	9	69.7	31	0	91	23	46	7	12	-7	157	-8	3.451	31	-2.45	0.85	11	
PAGE	6842	9	65.5	29	*****	89	17	41	1	51	*****	65	*****	8.180	29	*****	1.72	22	
POTEAU	7254	9	68.2	31	*****	89	22	46	7	17	*****	116	*****	9.510	31	*****	2.37	17	
SPIRO	8416	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.360	31	2.64	2.45	17	
TUSKAHOMA	9023	9	69.7	31	0	90	22	41	7	13	-3	158	-5	4.841	31	-1.86	1.52	10	
VALLIANT	9118	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.420	31	-1.76	0.96	10	
WILBURTON	9634	9	68.4	31	-0.5	91	22	42	7	22	-17	126	-33	10.200	31	4.11	2.95	17	
WISTER	9724	9	67.7	31	*****	88	23	45	1	23	*****	107	*****	8.080	31	*****	2.00	18	

MAY 1999 CLIMATE DIVISION SUMMARY

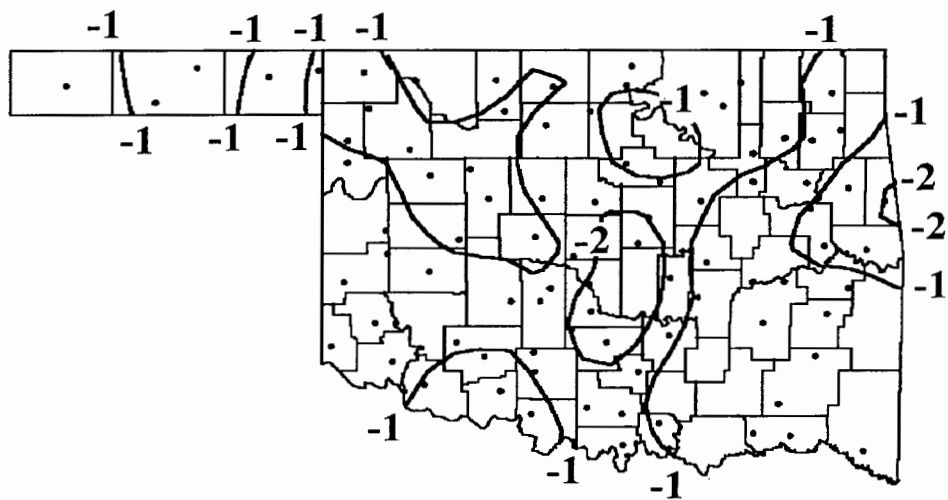
CD	DEV					HEAT				COOL				DEV			
	MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	DEG DAY	FROM NORM	DEG DAY	FROM NORM	DEG DAY	TOT PPT	NUM OBS	FROM NORM	MAX 24-HR	DAY
1	64.2	10	-0.9	95	31	32	7	101	6	77	-23	2.620	14	-0.57	2.96	2	
2	66.9	12	-1.1	96	16	37	11	55	2	112	-32	5.060	21	0.75	3.15	16	
3	67.3	11	-0.8	88	28	40	22	28	-20	99	-43	8.780	21	3.92	2.78	17	
4	67.1	8	-1.2	95	16	40	6	52	11	115	-27	3.530	16	-0.94	3.38	28	
5	67.8	16	-1.3	91	23	40	25	35	8	122	-34	4.570	34	-0.67	2.76	29	
6	67.9	10	-1.1	90	23	41	4	25	-8	115	-42	6.980	25	1.42	4.12	4	
7	68.8	9	-1.6	98	15	37	28	34	17	151	-33	5.300	20	0.72	4.15	28	
8	69.1	14	-1.2	99	31	36	7	22	8	149	-31	5.690	26	0.34	4.50	18	
9	69.0	8	-0.8	97	21	40	7	17	-2	141	-27	7.090	16	0.82	3.15	18	

MESONET MONTHLY SUMMARY FOR MAY 1999

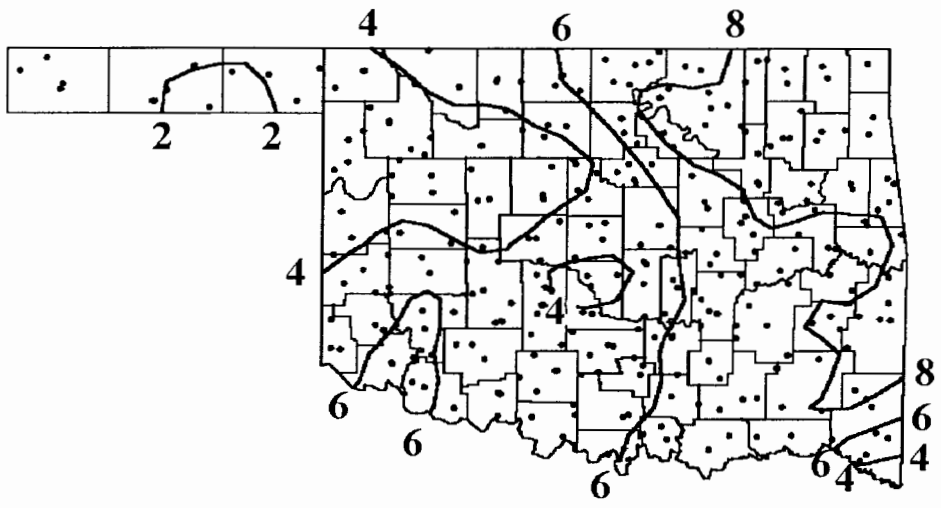
NAME	MEAN TEMP	MAX TEMP	MIN DAY	MIN TEMP	HDD	CDD	TOT PPT	MAX 24-HR	DAY	NAME	MEAN TEMP	MAX TEMP	MIN DAY	MIN TEMP	HDD	CDD	TOT PPT	MAX 24-HR	DAY											
PANHANDLE																														
Arnett	66.4	91	15	44	12	63	106	3.39	1.46	23	Goodwell	61.6	90	30	37	7	144	40	1.82	1.17	1									
Beaver	65.5	95	14	36	7	87	101	1.40	.77	1	Hooker	63.4	93	30	37	7	116	66	1.83	1.68	1									
Boise City	59.7	88	22	32	7	196	30	3.18	2.01	1	Kenton	60.0	90	22	32	7	190	36	2.37	1.71	1									
Buffalo	66.5	93	30	41	6	70	116	3.25	1.16	2	Slapout	65.4	93	30	39	7	85	97	2.07	.88	1									
NORTH CENTRAL																														
Alva	66.7	93	15	40	6	56	108	6.50	1.84	17	Lahoma	66.6	89	15	42	6	54	104	4.64	1.07	9									
Blackwell	67.2	89	15	43	7	38	107	7.56	2.07	31	May Ranch	66.8	92	16	43	6	53	107	5.69	2.27	31									
Breckenridge	66.3	88	22	43	7	55	96	3.11	1.12	17	Medford	67.0	89	15	42	7	47	109	6.28	2.53	17									
Cherokee	67.3	92	15	40	7	48	119	3.78	1.26	17	Newkirk	65.8	83	8	44	7	52	77	7.25	1.74	4									
Fairview	67.8	93	15	45	6	42	129	2.06	.65	16	Red Rock	66.5	87	15	43	7	43	90	5.95	1.72	3									
Freedom	66.2	93	16	38	7	69	106	2.08	.88	25	Seiling	66.6	91	15	44	6	52	102	1.61	.40	2									
NORTHEAST																														
Bixby	67.7	86	8	46	7	22	107	8.08	1.11	17	Miami	65.6	82	9	44	8	42	61	10.20	5.27	4									
Burbank	66.1	86	8	42	7	48	81	9.65	2.37	31	Nowata	65.6	82	9	44	7	45	63	10.29	2.73	4									
Catoosa	67.4	86	8	47	7	23	98	8.98	2.03	4	Pawnee	66.8	87	8	46	7	38	93	7.33	1.63	3									
Claremore	67.0	86	8	43	7	30	91	9.07	1.71	17	Pryor	66.0	84	9	44	7	39	72	9.99	1.58	17									
Copan	65.6	82	9	44	7	44	64	10.83	2.36	31	Skiatook	66.4	85	8	47	7	33	72	7.34	1.73	4									
Foraker	65.9	85	8	43	7	45	73	6.55	1.26	31	Tulahassee	67.9	88	22	44	7	21	110	9.79	3.43	4									
Jay	64.6	82	8	42	1	63	52	6.86	1.36	4	Vinita	65.1	82	8	45	1	46	47	11.39	5.63	4									
WEST CENTRAL																														
Bessie	68.1	94	15	44	7	40	135	5.58	3.01	27	Putnam	66.8	92	15	42	7	52	108	2.75	.86	23									
Butler	67.8	93	15	42	7	42	130	4.28	1.36	23	Retrop	68.3	94	15	45	6	41	144	5.94	3.40	27									
Camargo	66.3	91	15	41	6	62	103	2.84	.72	23	Watonga	66.9	90	15	45	6	48	107	2.43	.69	9									
Cheyenne	66.8	91	15	44	6	54	109	4.43	.87	27	Weatherford	66.9	91	15	40	6	56	116	4.04	1.35	27									
Erick	66.7	92	15	38	7	61	113	7.32	2.63	31																				
CENTRAL																														
Acme	68.1	87	15	46	6	29	126	6.22	1.48	31	Minco	67.4	87	22	46	7	40	115	4.65	1.36	4									
Bowlegs	67.0	87	22	45	1	32	95	5.85	.90	10	Ninnekah	68.3	89	22	45	7	33	134	4.62	1.80	23									
Bristow	66.3	87	22	45	13	41	81	5.62	.92	17	Norman	67.6	89	22	47	6	35	117	3.01	.89	9									
Chandler	67.2	87	22	46	7	34	102	6.62	3.08	3	Oilton	66.1	86	8	44	1	50	83	7.32	1.60	23									
Chickasha	68.0	91	22	44	18	37	131	3.69	1.18	23	Okemah	67.3	88	22	41	7	30	102	7.02	1.26	4									
El Reno	65.5	86	22	39	7	69	85	4.28	1.51	9	Perkins	68.0	91	22	46	6	33	125	4.30	1.72	4									
Guthrie	67.9	89	22	44	7	34	124	4.67	1.84	9	Shawnee	67.5	88	22	47	6	34	112	3.56	.54	9									
Kingfisher	67.6	91	22	43	7	43	124	2.74	1.14	9	Spencer	67.3	88	22	46	6	43	115	4.03	1.27	9									
Marena	67.3	88	22	45	6	35	107	4.04	.81	4	Stillwater	67.1	89	22	46	1	41	106	4.96	1.15	4									
Marshall	67.3	89	22	43	6	42	113	3.08	.97	9	Washington	68.0	86	22	47	6	27	119	3.84	.95	9									
EAST CENTRAL																														
Calvin	68.3	87	22	47	1	19	122	6.48	1.12	10	Preston	68.5	88	22	48	6	14	122	7.21	1.21	3									
Cookson	65.6	86	22	42	7	54	72	7.65	1.98	17	Sallisaw	68.0	88	22	44	7	24	117	7.02	2.96	4									
Eufaula	68.0	87	22	48	1	20	113	5.76	1.37	4	Stigler	68.1	89	22	47	1	23	120	5.75	1.02	21									
Haskell	67.5	88	22	46	7	25	101	11.07	4.03	4	Stuart	68.3	86	22	48	1	21	123	5.48	1.10	10									
Hectorville	67.9	87	22	46	7	20	110	8.10	1.23	22	Tahlequah	65.5	84	22	42	7	52	67	10.25	3.30	4									
McAlester	68.3	88	22	44	7	25	129	8.05	2.22	11	Webbers Falls	68.9	88	8	47	7	16	137	6.22	1.35	21									
Okmulgee	67.8	88	22	45	7	24	112	9.78	2.50	4	Westville	65.4	83	9	44	13	50	62	9.39	2.33	4									
SOUTHWEST																														
Altus	70.3	99	15	44	6	23	187	5.46	1.31	27	Hollis	68.5	95	15	40	7	45	153	6.29	1.66	27									
Apache	67.6	88	22	44	6	39	120	5.29	1.25	29	Mangum	68.9	96	15	41	7	36	157	7.81	2.96	27									
Fort Cobb	68.2	91	15	42	7	36	134	5.57	1.71	9	Medicine Park	68.3	88	15	49	6	23	126	4.43	1.19	23									
Grandfield	70.6	94	15	44	6	17	192	4.71	1.22	16	Tipton	70.9	97	15	41	7	21	203	6.33	1.63	25									
Hinton	67.3	89	15	42	6	47	118	3.01	1.08	9	Walters	70.1	91	15	44	6	18	176	4.97	1.20	9									
Hobart	67.8	93	15	41	7	50	137	8.89	4.38	27																				
SOUTH CENTRAL																														
Ada	67.8	87	22	46	1	26	112	6.03	1.52	23	Madill	69.8	88	22	44	7	20	169	8.45	3.06	29									
Ardmore	69.8	88	22	46	6	19	166	4.28	.89	23	Pauls Valley	68.8	87	22	44	7	24	143	5.53	1.75	23									
Burneyville	70.4	89	22	45	6	15	172	6.12	2.05	10	Ringling	70.3	88	22	42	7	19	184	6.19	2.11	21									
Byars	67.9	85	22	45	7	28	117	4.83	1.18	16	Sulphur	68.3	87	22	42	7	29	131	4.50	1.14	9									
Centrahoma	68.1	87	22	41	7	32	127	7.26	1.73	9	Tishomingo	68.5	87	22	44	7	23	133	6.26	1.61	29									
Durant	69.8	88	22	46	7	13	163	6.04	2.59	10	Vannoss	68.4	87	22	46	7	23	128	7.46	1.82	3									
Ketchum Ranch	69.0	88	22	45	7	24	147	4.75	1.25	9	Waurika	70.3	90	15	45	6	16	181	3.69	1.03	9									
Lane	69.3	89	22	46	6	16	150	9.80	4.14	11																				
SOUTHEAST																														
Antlers	68.6	89	22	39	7	27	140	****	****	**	Idabel	69.8	90	22	43	7	17	162	3.86	1.13	31									
Broken Bow	69.0	90	22	41	7	17	142	3.84	1.11	10	Mt Herman	67.2	85	22	43	7	29	98	10.88	2.76	10									
Clayton	****	***	**	***	**	****	****	****	****	**	Talihina	68.1	88	22	43	7	26	121	8.18	1.85	4									
Cloudy	68.4	87	22	43	7	24	128	9.81	3.46	11	Wilburton	68.5	89	22	42	7	23	132	11.29	3.05	4									
Hugo	69.5	88	22	49	1	15	155	10.30	5.85	11																				



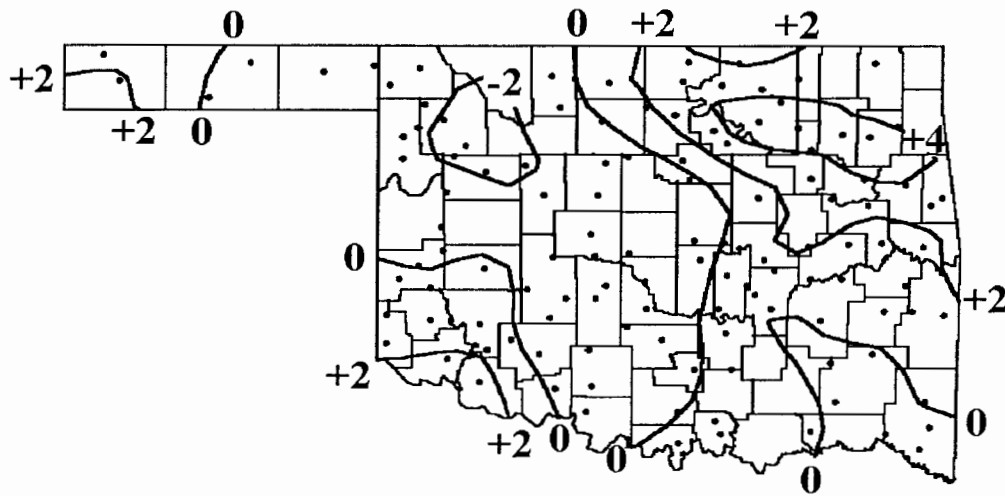
**MAY 1999 AVERAGE MONTHLY TEMPERATURE (F)**



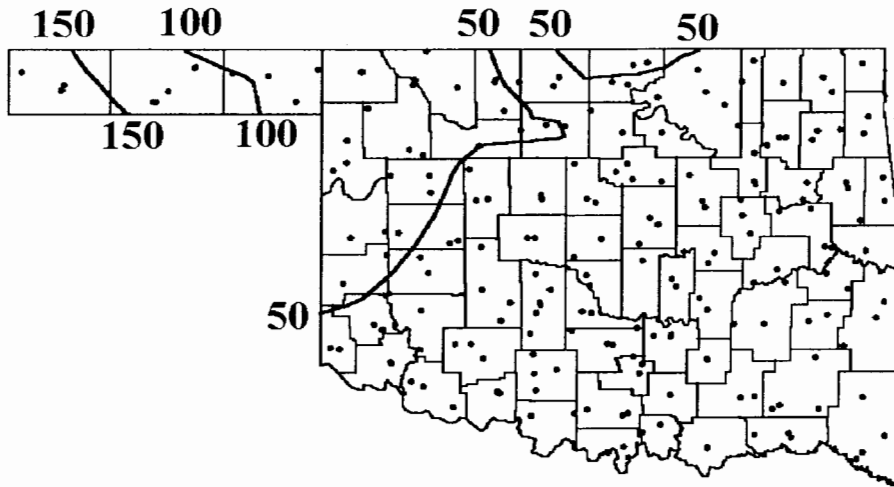
**MAY 1999 DEPARTURE FROM NORMAL TEMPERATURE (F)**



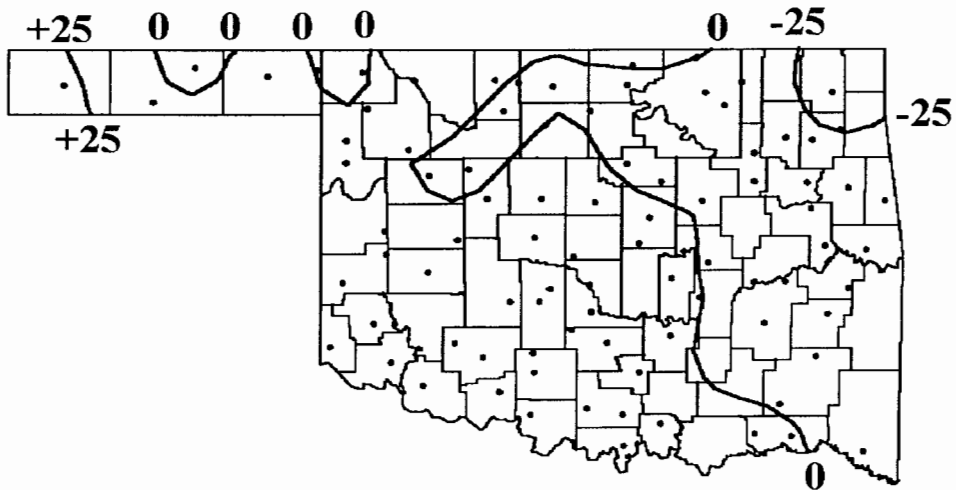
**MAY 1999 TOTAL PRECIPITATION (INCHES)**



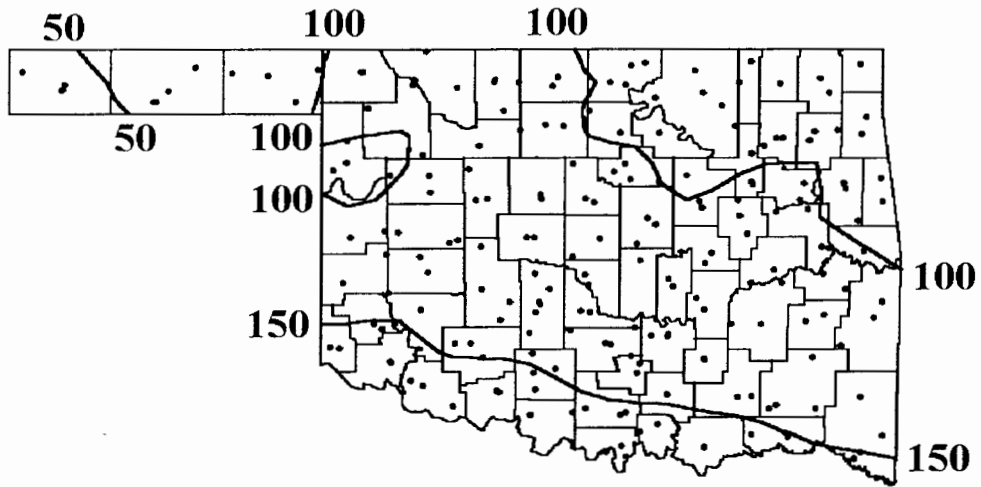
**MAY 1999 DEPARTURE FROM NORMAL PRECIPITATION (INCHES)**



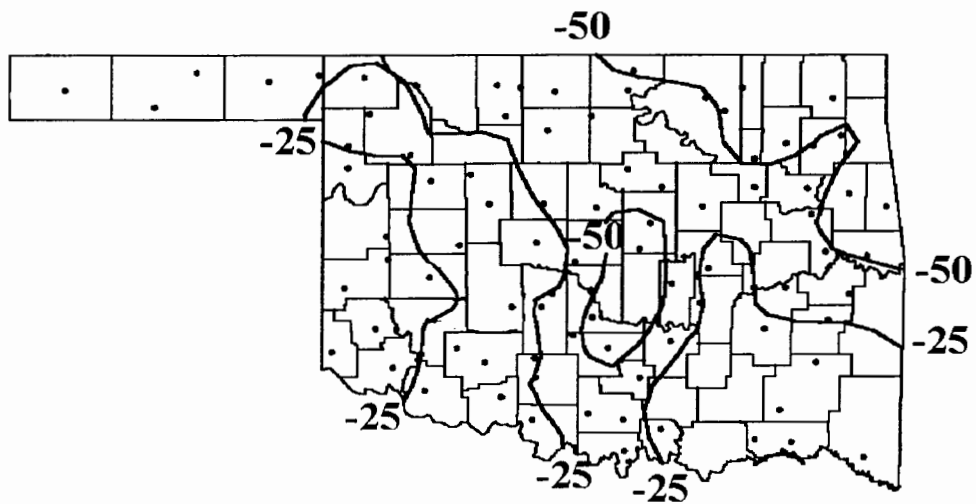
**MAY 1999 ACCUMULATED HEATING DEGREE DAYS (F)**



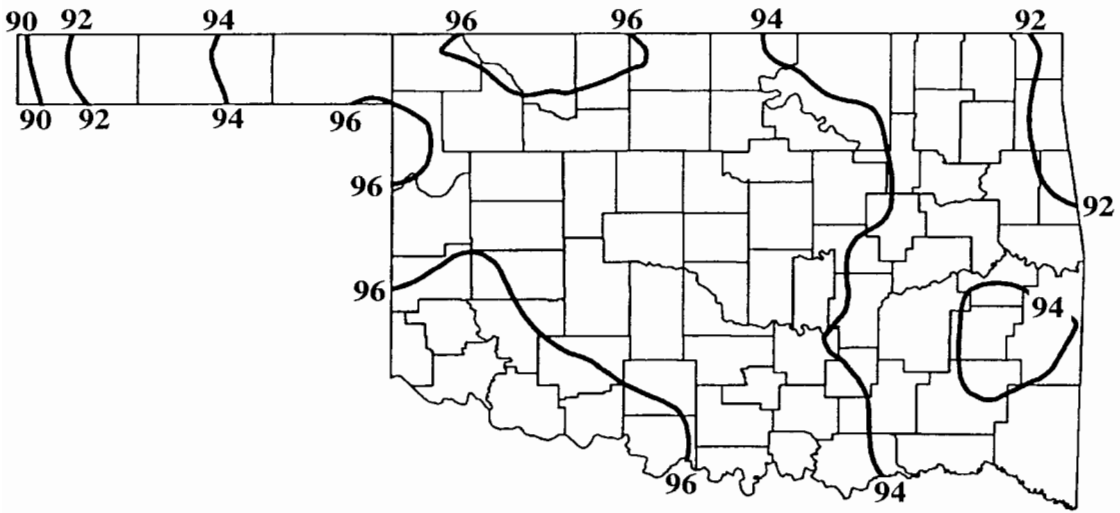
**MAY 1999 DEPARTURE FROM NORMAL HEATING DEGREE DAYS (F)**



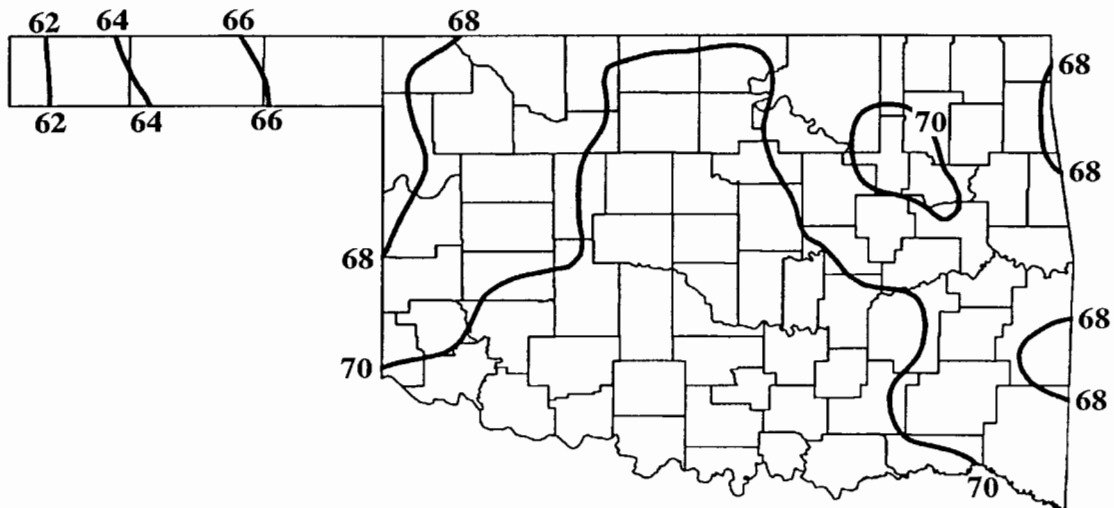
**MAY 1999 ACCUMULATED COOLING DEGREE DAYS (F)**



**MAY 1999 DEPARTURE FROM NORMAL COOLING DEGREE DAYS (F)**

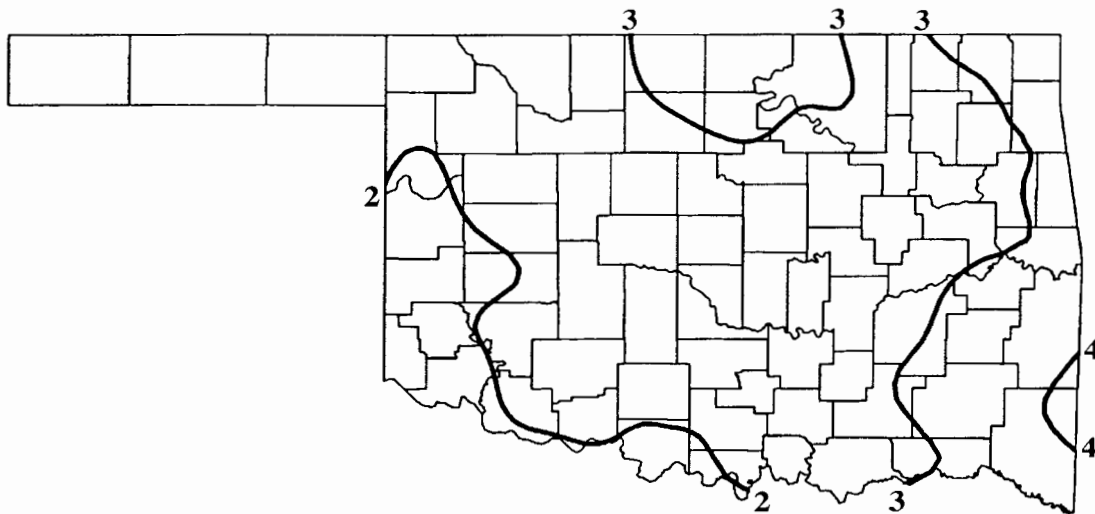


**JULY NORMAL DAILY MAXIMUM TEMPERATURE (F)**



**JULY NORMAL DAILY MINIMUM TEMPERATURE (F)**



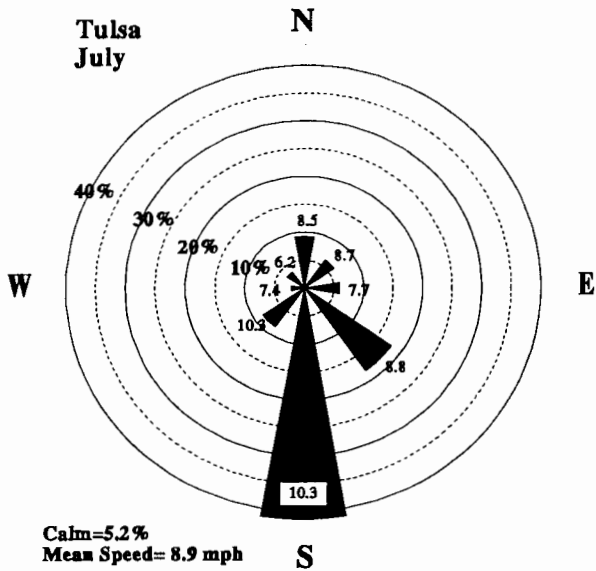
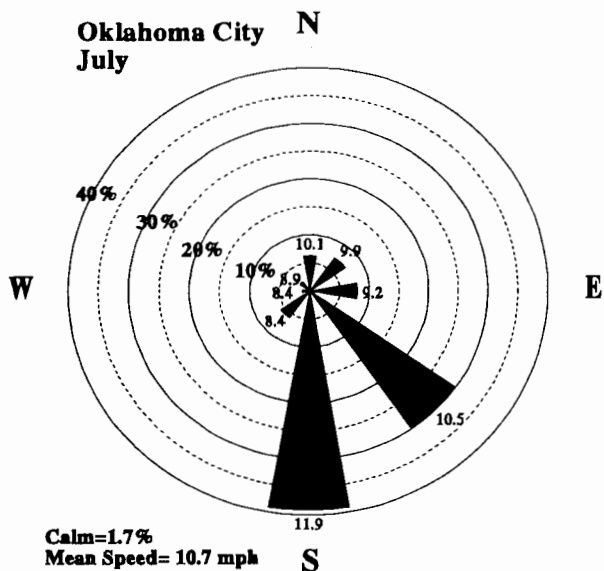


**JULY NORMAL MONTHLY PRECIPITATION (INCHES)**

**OUTLOOK FOR JULY 1999 THROUGH SEPTEMBER 1999  
BASED ON SEASONAL OUTLOOK PROVIDED BY THE CLIMATE PREDICTION CENTER**

**TEMPERATURE:      BELOW NORMAL TEMPERATURE STATEWIDE**

**PRECIPITATION:    NORMAL PRECIPITATION STATEWIDE**



**July Wind Roses for Oklahoma City and Tulsa.** The frequency (percent) of winds from each direction is represented by length of its bar. The numbers at the ends of the bars indicate the average wind speed from that direction in miles per hour.

**JULY SUNRISE/SUNSET TIMES FOR 1999**

ALL TIMES ARE CENTRAL STANDARD TIME

**OKLAHOMA CITY**

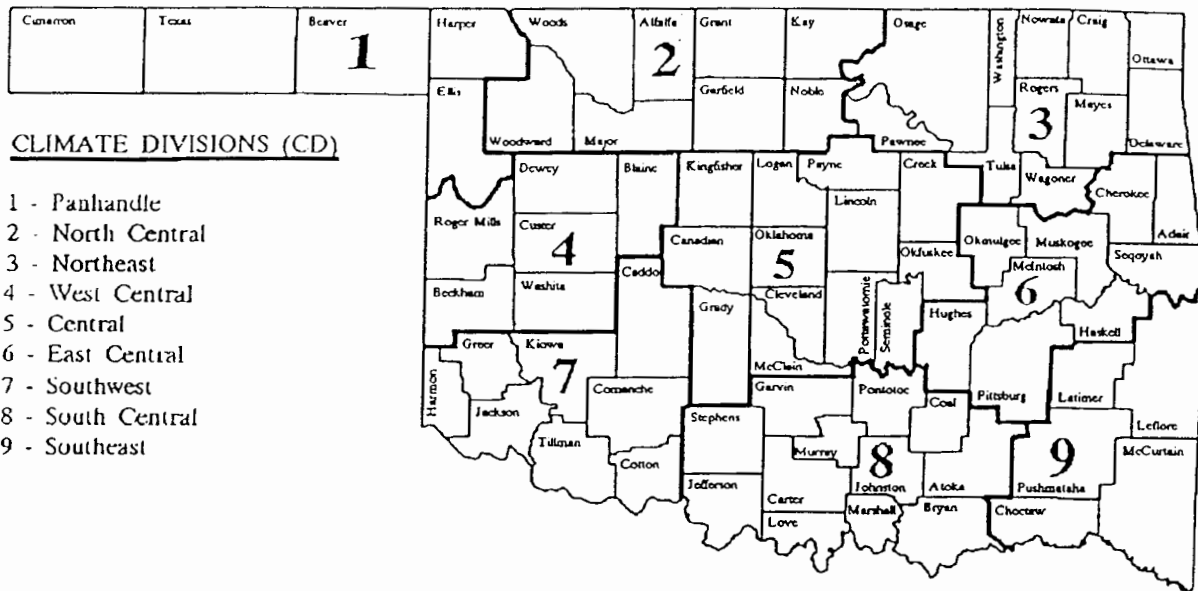
**TULSA**

DATE	SUNRISE	SUNSET
7/1/99	518	1949
7/2/99	519	1949
7/3/99	519	1949
7/4/99	520	1949
7/5/99	520	1949
7/6/99	521	1949
7/7/99	521	1949
7/8/99	522	1948
7/9/99	522	1948
7/10/99	523	1948
7/11/99	524	1947
7/12/99	524	1947
7/13/99	525	1947
7/14/99	525	1946
7/15/99	526	1946
7/16/99	527	1945
7/17/99	527	1945
7/18/99	528	1944
7/19/99	529	1944
7/20/99	529	1943
7/21/99	530	1943
7/22/99	531	1942
7/23/99	532	1941
7/24/99	532	1941
7/25/99	533	1940
7/26/99	534	1939
7/27/99	535	1938
7/28/99	535	1938
7/29/99	536	1937
7/30/99	537	1936
7/31/99	538	1935

DATE	SUNRISE	SUNSET
7/1/99	510	1945
7/2/99	511	1945
7/3/99	511	1945
7/4/99	512	1945
7/5/99	512	1944
7/6/99	513	1944
7/7/99	513	1944
7/8/99	514	1944
7/9/99	514	1943
7/10/99	515	1943
7/11/99	515	1943
7/12/99	516	1942
7/13/99	517	1942
7/14/99	517	1942
7/15/99	518	1941
7/16/99	519	1941
7/17/99	519	1940
7/18/99	520	1940
7/19/99	521	1939
7/20/99	521	1938
7/21/99	522	1938
7/22/99	523	1937
7/23/99	524	1936
7/24/99	524	1936
7/25/99	525	1935
7/26/99	526	1934
7/27/99	527	1933
7/28/99	527	1933
7/29/99	528	1932
7/30/99	529	1931
7/31/99	530	1930

ADD ONE HOUR FOR CENTRAL DAYLIGHT TIME

# 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 is less than 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 exceeds 65 degrees. Daily values are summed to give a monthly total. They are a proxy measure of how much cooling was required to maintain a comfortable indoor temperature. Missing observations may result in an artificially high or low value. For June, CDD would be calculated as:

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

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

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

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

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

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

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

OKLAHOMA CITY CLIMATE CALENDAR  
 DATA COURTESY OF NATIONAL WEATHER SERVICE NORMAN

JULY

The data on this calendar is for Oklahoma City.  
 Normal values are calculated for the period 1961-1990.  
 Temperature extremes are for the period 1891-1997.  
 Precipitation extremes are for the period 1891-1997.

Day	Avg. Temp	Avg. High	Record High	Year	Lowest Max	Year	1999	Avg. Low	Highest Min	Year	Record Low	Year	1999	Avg. Ppt.	Greatest Ppt.	Year	1999
1	79.9	90.3	103	1917	67	1951		69.5	86	1937	57	1951		0.19	5.06	1913	
2	81.1	92.0	105	1980	72	1924		70.3	78	1980	58	1924		0.08	1.70	1922	
3	81.9	92.6	105	1980	75	1908		71.2	79	1953	57	1906		0.06	2.97	1947	
4	80.6	91.3	105	1996	73	1915		70.0	80	1980	57	1924		0.07	1.37	1900	
5	80.5	91.4	108	1996	77	1958		69.5	80	1933	55	1915		0.10	3.21	1979	
6	81.0	92.0	110	1996	73	1958		69.9	80	1953	55	1972		0.07	1.84	1929	
7	81.4	92.5	106	1996	76	1960		70.3	79	1996	57	1952		0.06	2.03	1895	
8	81.6	92.8	105	1964	70	1905		70.5	78	1970	57	1958		0.03	1.32	1959	
9	81.8	93.1	106	1964	71	1905		70.5	80	1933	56	1891		0.04	2.14	1898	
10	81.9	93.4	104	1978	66	1895		70.4	80	1933	56	1905		0.05	2.79	1996	
11	81.9	93.1	107	1933	67	1895		70.8	81	1933	58	1905		0.04	3.02	1996	
12	81.8	92.9	107	1954	62	1953		70.7	82	1933	56	1953		0.08	1.80	1926	
13	81.3	92.6	106	1954	73	1953		69.9	81	1934	56	1975		0.12	2.10	1963	
14	81.3	92.8	107	1954	80	1926		69.8	80	1934	57	1950		0.06	1.98	1996	
15	81.5	92.5	108	1936	71	1891		70.6	82	1936	59	1967		0.08	2.30	1921	
16	81.8	92.8	106	1980	74	1967		70.8	79	1939	61	1891		0.04	3.54	1900	
17	82.0	93.2	106	1980	80	1950		70.9	79	1943	63	1992		0.15	1.71	1959	
18	82.7	93.6	108	1936	72	1967		71.8	81	1936	62	1911		0.06	1.53	1893	
19	82.4	93.4	109	1936	74	1953		71.4	82	1936	63	1898		0.06	2.77	1916	
20	82.1	93.3	107	1936	77	1944		70.9	79	1934	60	1970		0.05	1.48	1897	
21	81.9	93.1	107	1939	78	1970		70.7	80	1981	54	1970		0.14	1.47	1950	
22	81.9	92.8	107	1974	73	1947		71.0	79	1981	57	1970		0.10	2.49	1899	
23	81.3	92.4	104	1981	77	1989		70.1	79	1981	55	1970		0.17	3.02	1960	
24	82.3	93.5	106	1943	73	1947		71.0	79	1993	61	1970		0.08	2.92	1975	
25	83.0	94.1	106	1977	76	1906		71.8	83	1934	58	1911		0.07	1.96	1906	
26	82.9	93.7	106	1978	75	1959		72.0	79	1981	63	1911		0.08	0.88	1978	
27	82.5	93.7	105	1986	75	1959		71.3	78	1939	59	1994		0.25	5.60	1981	
28	81.8	92.7	108	1986	75	1981		70.8	80	1946	58	1994		0.20	1.80	1963	
29	82.2	93.4	109	1986	76	1892		71.0	79	1966	60	1994		0.16	2.02	1975	
30	82.3	93.5	108	1986	73	1925		71.2	80	1986	57	1971		0.04	1.05	1996	
31	81.7	92.7	107	1980	76	1925		70.8	79	1943	53	1971		0.06	1.07	1978	
MONTH	81.8	92.8	110	1996	62	1953		70.7	86	1937	53	1971		2.84	5.60	1981	

\*The most tornadoes reported in July for Oklahoma was 7 in 1956.

TULSA CLIMATE CALENDAR  
 DATA COURTESY OF NATIONAL WEATHER SERVICE TULSA

The data on this calendar is for Tulsa.  
 Normal values are calculated for the period 1961-1990.  
 Temperature extremes are for the period 1905-1998.  
 Precipitation extremes are for the period 1888-1998.

Day	Avg. Temp	Avg. High	Record High Year	Lowest Max Year	1999	Avg. Low	Highest Min Year	Record Low Year	1999	Avg. Ppt.	Greatest Ppt. Year	1999
1	81	92	1917	1995		71	1980	1951		0.12	1.95	1922
2	82	92	1933	1924		72	1980	1995		0.12	2.51	1929
3	82	92	1911	1924		72	1983	1941		0.12	2.75	1903
4	82	92	1911	1924		72	1980	1915		0.11	1.93	1930
5	82	92	1911	1915		72	1980	1972		0.11	1.55	1950
6	82	93	1996	1972		72	1980	1960		0.11	1.62	1932
7	83	93	1917	1967		73	1980	1908		0.11	1.35	1994
8	83	93	1917	1958		73	1980	1905		0.11	1.02	1906
9	83	93	1925	1952		73	1980	1905		0.11	3.80	1915
10	83	93	1933	1961		73	1980	1950		0.10	2.20	1906
11	83	93	1954	1905		73	1969	1996		0.10	2.30	1963
12	83	93	1954	1975		73	1980	1953		0.10	1.61	1998
13	83	94	1954	1975		73	1980	1953		0.10	1.95	1994
14	83	94	1954	1967		73	1954	1961		0.10	3.25	1994
15	83	94	1936	1967		73	1980	1959		0.10	3.91	1961
16	84	94	1980	1967		73	1980	1967		0.10	2.55	1967
17	84	94	1936	1967		73	1980	1989		0.10	1.85	1989
18	84	94	1936	1984		73	1954	1967		0.10	2.72	1924
19	84	94	1936	1947		73	1980	1908		0.09	2.20	1933
20	84	94	1936	1971		73	1981	1970		0.09	2.35	1906
21	84	94	1939	1970		73	1996	1950		0.09	1.89	1994
22	84	94	1974	1970		73	1954	1947		0.09	3.12	1960
23	84	94	1936	1970		73	1954	1947		0.09	1.85	1973
24	84	95	1934	1927		73	1993	1947		0.09	1.95	1973
25	84	95	1934	1911		73	1934	1950		0.09	2.34	1931
26	84	95	1978	1905		73	1981	1959		0.09	1.81	1928
27	84	95	1936	1971		73	1986	1977		0.09	7.54	1963
28	84	95	1936	1920		73	1986	1911		0.09	2.72	1976
29	84	95	1986	1969		73	1986	1981		0.09	1.24	1950
30	84	95	1986	1971		73	1980	1971		0.09	3.78	1981
31	84	95	1980	1971		73	1958	1925		0.09	1.04	1979
MONTH	83.3	93.7	1936	1971		72.8	1980	1953		3.09	7.54	1963

\*The average number of tornadoes reported in July for Oklahoma is 2.2.