

The Oklahoma Climatological Survey was established with its own budget and offices in the spring of 1980. The mission of the Survey is to provide a climatological archiving and information service to the State of Oklahoma. Although as many as 160 stations may appear in any one summary, it may not be possible to list every station report received at the Survey as we plan to have the summaries in the mail before the middle of each month. If you would like information about a station that does appear, please feel free to contact the Climate Survey. If you would like to know more about the services we offer or our plans for the future, please let us hear from you. You can help us by contributing to our newspaper clipping file. If you see an article in your local newspaper dealing with some impact of climate on your community, please clip it and send it to us along with the name of the newspaper and the date the article appeared.

OKLAHOMA CLIMATE SUMMARY JULY 1988

Several days of isolated thunderstorms delivered above normal precipitation to most of the State. Unfortunately, these rains were insufficient to alleviate long-established dry conditions. CD's 3-9 began the month with negative drought index values. Index declines in each of these 7 CD's by month's end indicate that long-term moisture reserves continue to deteriorate (see Table 1).

Very little rain fell during the first week of July, much to the benefit of the wheat harvest. By the 3rd, an estimated 99% of the crop had been harvested, some 20% above the 5-year average for that date. The inadequate soil moisture supplies, however, aggravated by the continued dry weather, began to stress recently-planted crops. The Oklahoma Department of Agriculture reported 40% of the corn and 35% of the sorghum crop in only fair or poor condition.

Thunderstorm development was aided by a relatively weak surface trough which moved eastward across the State on July 9-11. On the 9th, numerous stations in the western one-third of Oklahoma recorded about .50" of precipitation. Two days later the disturbance encountered moister air in southeastern Oklahoma, where resulting rainfall reports included Hugo 2.30" and Valliant 3.20". Rains in the area produced business and street flooding in Idabel and Broken Bow.

Temperatures rose quickly to above normal following the departure of the trough and its associated cloudiness. By the 13th, locations in all but southeastern Oklahoma recorded 100 degree temperatures. The Heat Stress Index reached 114 degrees at Enid and Tinker Air Force Base, well into the danger category. On the 14th, the National Weather Service issued a heat alert. Oklahoma hospitals treated at least 10 heat exhaustion patients. High temperatures in the upper 90's, a few degrees above normal, remained Statewide for several days.

Scattered thunderstorms associated with a weak cold front delivered some spotty relief on July 16-19. On the 17th, north central Oklahoma realized the localized nature of such convective storms when Billings recorded 2.55" of rain while Perry, approximately 20 miles away, recorded only .07". Elsewhere, storms produced 60 mph winds and 1" hail in Ellis County, and marble-size hail at Bartlesville. The same storm system provided Tulsa with 1.37" of rain, its first rainfall in excess of 1 inch in 106 days. (Tulsa averages one such rainfall per spring and summer month.) Strong thunderstorms along a cold front on July 19th prompted the National Weather Service to issue a tornado warning for Hughes County where the Highway Patrol reported funnel clouds. Severe drought conditions in CD 3 were moderated when many stations in northeastern Oklahoma reported over one inch of rain. The front, with its cloudy skies and rain-cooled air, lowered the Tulsa temperatures 15 degrees in one hour.

Temperatures averaged 2-5 degrees (southeast to northwest) below normal during the week ending the 24th. On the 24th, an upper level disturbance triggered another strong thunderstorm near Tulsa. The storm produced 60-70 mph winds, golfball-size hail, street flooding and downburst winds which severely damaged a shopping area.

During the final week of the month, a weak surface low and a slow moving front assisted the development of scattered thunderstorms across the State (see Table 2). Winds estimated near 70 mph during one of the strongest storms on the 28th downed large tree limbs and broke windows on the OU Campus in Norman. Although these and earlier rains boosted the percent of sorghum and cotton in good condition (85% and 100%, respectively), 50% of topsoil and 70% of subsoil moisture supplies were reported to be inadequate by the end of the month.

NATIONAL WEATHER SERVICE 30 AND 90-DAY OUTLOOK

30-DAY OUTLOOK (AUGUST)

Precipitation - Above normal in western Panhandle.
Near normal elsewhere.
Temperature - Below normal in western one-third.
Near normal elsewhere.

90-DAY OUTLOOK (AUGUST-OCTOBER)

Precipitation - Above normal in eastern four-fifths.
Near normal elsewhere.
Temperature - Above normal statewide.

Table 1. Palmer Drought Index Values for each CD.

<u>Area</u>	<u>*Drought Severity</u>	<u>(30 July) PDI</u>	<u>(30 July) Inches of Rainfall Needed To End Drought</u>
Northwest	ND	-	-
North Central	ND	-	-
Northeastern	Moderate	-2.90	9.52
West Central	Moderate	-2.00	4.14
Central	Moderate	-2.46	6.64
East Central	Moderate	-2.62	8.22
Southwest	Mild	-1.85	3.65
South Central	Moderate	-2.82	8.26
Southeast	Severe	-3.57	12.59

* ND = No Drought at this time
Mild = PDI = -1.0 to -2.0
Moderate = PDI = -2.0 to -3.0
Severe = PDI = -3.0 to -4.0
Extreme = PDI = Less than -4.0
PDI = Palmer Drought Index

Table 2. Rainfall accumulations for the period July 26-30, 1988 for selected Oklahoma stations. (Amounts in Inches)

<u>Climate Division</u>	<u>Amount</u>	<u>Station</u>
1	.25	Arnett
2	1.84	Perry
3	.70	Pawhuska
3	2.17	Tulsa
4	1.50	Leedey
5	.83	Purcell
5	1.54	Oklahoma City
6	2.08	Tahlequah
7	1.00	Altus AFB
8	.96	Pauls Valley
9	1.46	Tuskahoma

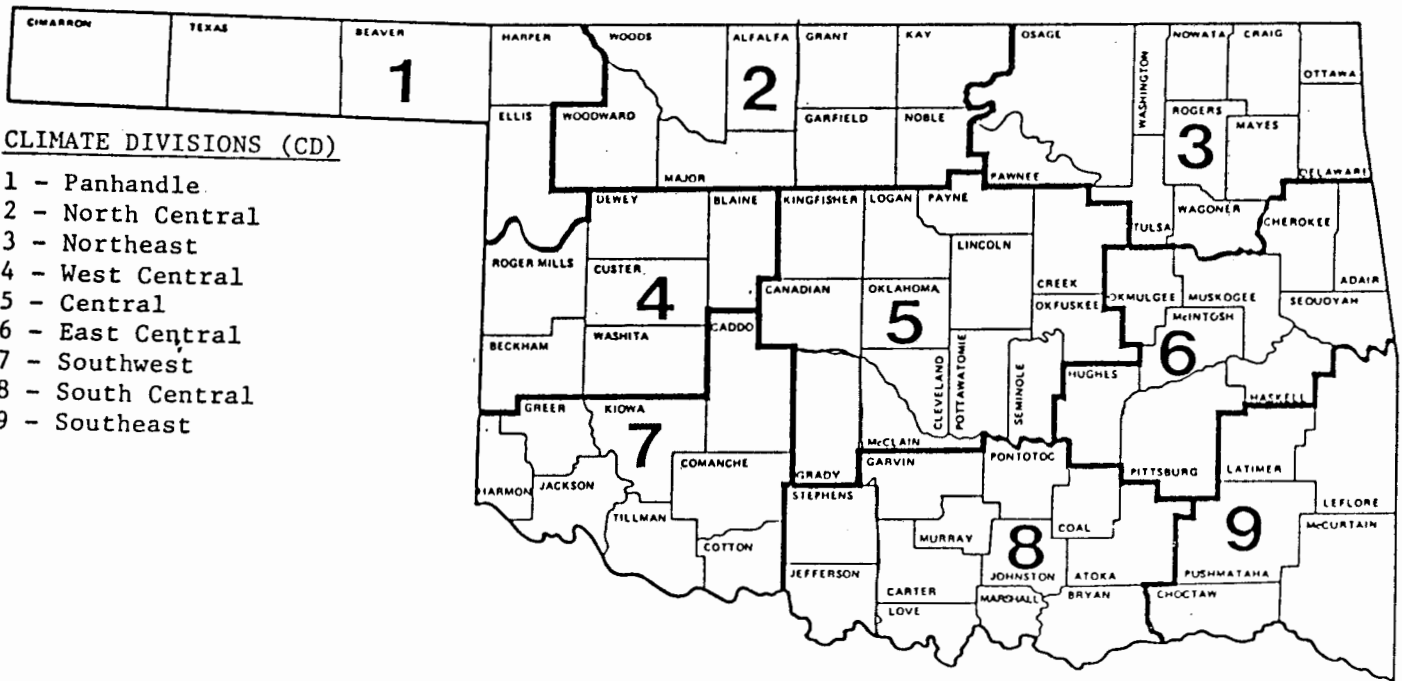
TABLE OF 1987/1988 COMPARISONS

Station	July Temperatures (F)		July Precipitation (in.)	
	1987	1988	1987	1988
Arnett	77.7	78.6	1.77	1.21
Enid	81.0	82.2	3.59	2.69
Mutual	79.0	79.8	1.88	2.22
Tulsa	81.9	82.7	4.39	4.20
Elk City	78.1	*	2.05	*
Oklahoma City	80.0	81.7	3.09	1.97
McAlester	79.9	81.7	5.93	3.18
Altus Irr. Sta.	82.4	82.9	0.00	2.10
Durant	79.8	81.8	3.35	1.25
Ada	79.7	82.3	3.14	2.63
Antlers	80.2	82.4	1.98	3.88

EXTREMES

Variable	Station	Division	Observation	Date
Minimum temperature (F)	Jay Tower	3	48	14
Maximum temperature (F)	Mannford	3	106	13
Maximum 24-hour precipitation	Okemah	5	6.14"	28

O K L A H O M A



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:

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

JULY 1988 SUMMARY FOR NORTHWEST DIVISION (CD1)

NAME	ID	CD	DEV					MIN	DAY	HEAT		DEV		COOL		DEV		TOT	PPT	NUM	OBS	FROM	NORM	MAX	24-HR	DAY
			MEAN	NUM	FROM	MAX	TEMP			DEG	FROM	DEG	FROM	DEG	FROM	DEG	FROM									
ARNETT	332	1	78.6	31	-2.2	97.	31	57.	21	.0	.0	423.0	-67.0	1.212	31	-.88	.46	9								
BEAVER	593	1	79.0	31	-2.5	101.	16	56.	22	.0	.0	432.5	-79.5	9.840	31	6.97	4.44	1								
BOISE CITY 2 E	908	1	75.9	31	-2.1	98.	23	56.	22	.0	.0	337.5	-65.5	1.320	31	-1.28	.40	17								
BUFFALO	1243	1	80.7	31	-2.7	104.	29	54.	20	.0	.0	487.5	-82.5	3.650	31	.33	1.80	1								
FARGO	3070	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.310	31	2.12	1.34	9								
GAGE FAA APT	3407	1	79.6	31	-1.9	98.	16	55.	21	.0	.0	452.5	-59.5	1.780	31	-.33	.73	18								
GATE	3489	1	81.0	31	*****	102.	15	59.	19	.0	*****	497.0	*****	2.940	31	*****	1.10	18								
GOODWELL RES	ST3628	1	76.8	31	-2.6	101.	16	55.	21	.0	.0	364.5	-81.5	2.996	31	.12	1.14	1								
GUYMON	3835	1	78.3	30	*****	101.	16	57.	21	.0	*****	399.0	*****	2.440	30	*****	1.59	7								
HOOKER	4298	1	78.2	31	-2.1	101.	16	58.	21	.0	.0	408.0	-66.0	2.910	31	-.02	1.05	19								
KENTON	4766	1	75.1	31	-3.5	99.	24	55.	25	.0	.0	312.0	-110.0	5.490	31	2.60	1.99	10								
LAVERNE	5045	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.901	31	1.41	2.40	1								
OPTIMA LAKE	6740	1	77.1	30	*****	99.	16	48.	7	.0	*****	364.0	*****	7.130	31	*****	5.37	7								
REGNIER	7534	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.690	31	-1.81	.38	9								
TURPIN 4 SSE	9017	1	78.4	31	*****	100.	16	56.	21	.0	*****	414.5	*****	6.800	31	*****	3.00	1								

JULY 1988 SUMMARY FOR NORTH CENTRAL DIVISION (CD2)

NAME	ID	CD	DEV					MIN	DAY	HEAT		DEV		COOL		DEV		TOT	PPT	NUM	OBS	FROM	NORM	MAX	24-HR	DAY
			MEAN	NUM	FROM	MAX	TEMP			DEG	FROM	DEG	FROM	DEG	FROM	DEG	FROM									
ALVA 1 ENE	194	2	80.8	31	-2.6	103.	13	57.	21	.0	.0	490.0	-80.0	2.060	31	-.53	.69	17								
VANCE AFB	302	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.744	31	*****	3.33	20								
BILLINGS	755	2	81.2	31	*****	100.	17	62.	21	.0	*****	501.5	*****	5.590	31	2.07	2.55	17								
BLACKWELL 2E	818	2	81.9	31	*****	102.	30	60.	21	.0	*****	525.0	*****	2.232	31	*****	1.62	1								
BRAMAN	1075	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.133	31	*****	.39	1								
CEDARDALE	1620	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.892	31	*****	1.78	17								
CHEROKEE	1724	2	84.0	31	.3	105.	16	61.	21	.0	.0	589.5	9.5	4.080	31	1.32	1.94	27								
ENID	2912	2	82.2	31	-1.3	101.	13	63.	21	.0	.0	533.0	-41.0	2.691	31	-.49	.68	27								
FT SUPPLY DAM	3304	2	78.4	31	-3.4	97.	16	56.	21	.0	.0	415.5	-105.5	1.520	31	-.67	.45	17								
FREEDOM	3358	2	80.2	31	*****	101.	14	59.	20	.0	*****	472.5	*****	4.960	31	*****	1.77	17								
GREAT SALT PLNS	3740	2	82.2	31	*****	103.	16	61.	21	.0	*****	533.0	*****	2.691	22	*****	1.23	1								
HARDY	3909	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.511	31	*****	1.08	19								
HELENA 1 SSE	4019	2	80.3	31	*****	101.	16	60.	21	.0	*****	474.0	*****	3.021	31	-.06	1.41	27								
JEFFERSON	4573	2	82.5	31	-1.1	102.	15	60.	21	.0	.0	543.5	-33.5	2.742	31	-1.18	.69	26								
LAMONT	5013	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.350	31	*****	.65	12								
MEDFORD	5768	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.711	31	*****	.49	17								
MORRISON	6065	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.940	31	*****	1.30	17								
MUTUAL	6139	2	79.8	31	-2.8	100.	16	58.	21	.0	.0	459.5	-86.5	2.220	31	-.34	1.31	9								
NEWKIRK	6278	2	81.0	31	-1.5	99.	15	61.	21	.0	.0	496.0	-47.0	4.880	31	1.33	1.45	17								
ORIENTA	6751	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.460	31	*****	1.70	20								
PERRY	7012	2	82.3	31	-.9	100.	24	62.	21	.0	.0	536.5	-27.5	6.000	31	2.47	2.15	20								
PONCA CITY FAA	7201	2	81.9	15	*****	101.	14	62.	21	.0	*****	253.0	*****	.640	26	*****	.22	20								
RED ROCK 1 NNE	7505	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.770	31	.05	1.05	12								
RENFROW	7556	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.580	31	-1.93	.66	1								
WAYNOKA	9404	2	80.6	31	-2.9	101.	15	58.	2	.0	.0	484.5	-89.5	1.930	31	-.62	.60	19								
WOODWARD	9760	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.720	31	*****	1.79	17								

JULY 1988 SUMMARY FOR NORTHEAST DIVISION (CD3)

NAME	ID	CD	DEV						HEAT	DEV	COOL	DEV	TOT	NUM	FROM	MAX	24-HR	DAY
			MEAN	NUM	FROM	MAX	MIN	DAY	DEG	FROM	DEG	FROM						
BARNSDALL	535	3	80.9	30	*****	99.	14	59.	22	.0	*****	476.0	*****	5.143	31	1.94	2.08	12
BARTLESVILLE ZW	548	3	81.7	31	-.3	102.	13	59.	22	.0	.0	516.5	-10.5	2.960	31	-.03	1.05	12
BIXBY	782	3	81.1	31	-.7	100.	26	59.	22	.0	.0	499.0	-22.0	5.180	31	1.97	1.40	28
BURBANK	1256	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.700	31	*****	.96	19
CHELSEA 4 S	1717	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.520	31	*****	1.57	20
CLAREMORE	1828	3	81.2	31	-.4	101.	1	58.	22	.0	.0	503.5	-11.5	4.181	31	1.10	1.28	20
CLEVELAND 5 WSW	1902	3	80.8	25	*****	100.	13	60.	21	.0	*****	395.0	*****	4.211	31	*****	1.07	12
FORAKER	3250	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.621	31	-.85	1.43	18
HOLLOW	4258	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.470	31	-.28	1.73	1
HOMINY	4289	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.853	31	2.43	2.38	29
HULAH DAM	4393	3	80.5	20	*****	103.	1	58.	22	.0	*****	310.0	*****	2.681	20	*****	1.56	20
JAY TOWER	4567	3	82.5	31	*****	102.	18	58.	22	.0	*****	542.5	*****	3.410	31	*****	.90	20
KANSAS 1 ESE	4672	3	79.6	31	*****	98.	25	57.	22	.0	*****	453.0	*****	2.482	31	*****	.60	28
KEYSTONE DAM	4812	3	81.0	31	*****	101.	14	60.	22	.0	*****	495.0	*****	6.123	31	*****	2.30	28
LENAPAH	5118	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.690	31	*****	.42	20
MANNFORD 6 NW	5523	3	81.9	31	*****	106.	13	58.	21	.0	*****	524.5	*****	4.230	31	*****	1.02	20
MARAMEC	5540	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.030	31	.91	2.19	20
MIAMI	5855	3	79.0	31	-2.1	96.	31	59.	22	.0	.0	432.5	-66.5	5.360	31	1.43	3.40	1
NOWATA	6485	3	81.0	29	*****	102.	1	61.	22	.0	*****	464.5	*****	4.200	31	1.26	2.20	20
ONETA 1 WNW	6713	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.961	31	*****	1.65	28
PAWHUSKA	6935	3	80.6	31	-1.2	100.	14	60.	21	.0	.0	484.5	-36.5	3.964	31	.51	1.82	19
PAWHUSKA	6937	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.473	31	*****	1.45	20
PAWNEE	6940	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.510	31	3.38	3.50	20
PRYOR 6 N	7309	3	79.8	29	*****	101.	17	56.	22	.0	*****	429.5	*****	3.762	29	*****	1.16	17
QUAPAW	7358	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.331	31	1.56	3.50	1
RALSTON	7390	3	82.3	31	*****	101.	1	61.	21	.0	*****	535.5	*****	6.601	31	3.11	2.85	12
RAMONA 4 N	7394	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.150	31	*****	2.09	20
SKIATOOK	8258	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.710	31	-.70	1.23	28
SPAVINAW	8380	3	81.0	31	*****	97.	26	60.	22	.0	*****	496.5	*****	2.873	31	-.86	.96	11
TULSA WSO APT	8992	3	82.7	31	-.5	101.	24	64.	22	.0	.0	549.5	-14.5	4.202	31	.69	2.12	28
UPPER SPAVINAW	9101	3	84.6	31	*****	105.	15	60.	22	.0	*****	609.0	*****	1.612	31	*****	.41	28
VINITA 2 N	9203	3	80.1	31	-1.0	99.	16	58.	21	.0	.0	468.0	-31.0	3.870	31	.49	2.42	1
WAGONER	9247	3	81.9	31	-.5	100.	18	61.	22	.0	.0	523.5	-15.5	7.280	31	3.78	1.67	20
WANN	9298	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.150	31	*****	1.70	20
WYONONA	9792	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.866	31	*****	4.40	11

JULY 1988 SUMMARY FOR WEST CENTRAL DIVISION (CD4)

NAME	ID	CD	DEV				HEAT		DEV		COOL		DEV		TOT	NUM	FROM	MAX	24-HR	DAY
			MEAN	NUM	FROM	MAX	MIN	DEG	FROM	DEG	FROM	DEG	FROM	DEG						
CANTON DAM	1445	4	80.5	31	-2.4	101.	14	58.	21	.0	.0	481.5	-73.5	2.571	31	.16	1.09	27		
CHEYENNE	1738	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.680	31	*****	.76	10		
CLINTON	1909	4	83.5	31	.2	103.	30	58.	21	.0	.0	575.0	8.0	.531	31	-1.99	.22	1		
COLONY	2039	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.763	31	*****	1.43	5		
CORDELL	2125	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.110	31	.59	1.46	9		
ELK CITY 1 E	2849	4	80.5	31	*****	96.	30	60.	21	.0	*****	482.0	*****	2.601	31	.19	.85	10		
ERICK 4 E	2944	4	80.0	30	-1.9	98.	13	60.	21	.0	.0	451.0	-73.0	3.573	31	1.44	2.17	17		
GEARY	3497	4	80.5	25	*****	98.	24	61.	21	.0	*****	387.5	*****	1.800	25	*****	1.00	29		
HAMMON 1 NNE	3871	4	79.9	31	-3.1	98.	7	57.	21	.0	.0	463.0	-95.0	4.111	31	1.96	1.45	10		
LEEDEY	5090	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.563	31	1.59	.92	5		
MACKIE 4 NNW	5463	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.650	31	*****	1.22	9		
MORAVIA 2 NNE	6035	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.580	31	-.71	.67	10		
OKEENE	6629	4	81.6	31	-2.3	101.	13	59.	4	.0	.0	515.0	-71.0	4.610	31	2.27	1.78	27		
RETROP	7565	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.210	31	*****	.75	9		
REYDON	7579	4	80.3	28	*****	100.	28	55.	21	.0	*****	428.5	*****	1.271	28	*****	.38	10		
SAYRE	7952	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.461	31	.39	1.10	10		
SWEETWATER 2 E	8652	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.721	31	*****	.90	10		
TALOGA	8708	4	81.5	31	-.7	101.	12	55.	21	.0	.0	512.5	-20.5	4.450	31	1.83	2.07	25		
THOMAS	8815	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.710	31	*****	1.10	29		
VICI	9172	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.752	31	*****	.45	18		
WATONGA	9364	4	81.9	31	*****	101.	14	60.	21	.0	*****	524.5	*****	2.502	31	.26	.83	27		
WEATHERFORD	9422	4	82.4	31	-.6	104.	31	59.	21	.0	.0	540.5	-17.5	1.252	31	-1.24	.75	18		

JULY 1988 SUMMARY FOR CENTRAL DIVISION (CD5)

NAME	ID	CD	DEV						HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	DEV				
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN DAY	TEMP DAY						NUM OBS	FROM NORM	MAX 24-HR	DAY	
AMBER	200	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.800	31	*****	.37	25
ARCADIA	288	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.132	31	*****	1.07	1
TINKER AFB	325	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.999	31	*****	1.03	27
BLANCHARD 2 SSW	830	5	82.3	31	*****	100.	17	63.	22	.0	*****	536.5	*****	.287	31	*****	.17	27
BRISTOW	1144	5	82.4	28	*****	101.	16	61.	21	.0	*****	488.0	*****	3.174	31	-.39	1.40	28
CHANDLER	1684	5	82.1	31	-.7	101.	24	61.	22	.0	.0	529.0	-23.0	2.611	31	-.73	1.86	28
CHICKASHA EX ST1750	5	5	81.6	31	-1.4	100.	17	57.	21	.0	.0	516.0	-42.0	.461	31	-2.06	.20	25
COX CITY 1 E	2196	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.960	31	*****	.30	26
CRESCENT	2242	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.360	31	*****	1.50	27
CUSHING	2318	5	81.5	29	*****	100.	25	64.	3	.0	*****	479.0	*****	5.740	29	*****	2.24	27
EL RENO 1 N	2818	5	82.0	31	-.5	101.	16	60.	21	.0	.0	525.5	-17.5	1.181	31	-1.59	.52	1
GUTHRIE	3821	5	83.6	29	*****	103.	25	59.	21	.0	*****	538.0	*****	1.090	30	*****	.50	1
HENNESSEY 2 SE	4055	5	81.2	31	-2.5	101.	17	59.	21	.0	.0	501.0	-79.0	5.232	31	2.72	2.17	1
INGALLS	4489	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.112	31	*****	.53	28
KINGFISHER 2 SE4861	5	5	82.6	31	-1.1	103.	16	58.	21	.0	.0	546.5	-33.5	1.870	31	-.70	.85	27
KONAWA	4915	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.330	31	1.80	2.79	19
MARSHALL	5589	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.580	31	-.01	1.34	20
MEEKER 4 W	5779	5	81.5	31	-.8	100.	24	59.	22	.0	.0	513.0	-23.0	1.930	31	-1.08	1.30	27
MULHALL	6110	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.680	31	*****	1.18	27
NORMAN 3 S	6386	5	82.4	25	*****	102.	26	60.	21	.0	*****	434.0	*****	2.112	31	-1.12	1.36	29
OILTON 2 SE	6616	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.590	31	*****	.94	28
OKEMAH	6638	5	81.2	31	-.9	99.	18	63.	3	.0	.0	503.0	-27.0	8.232	31	4.85	6.14	28
OKLAHOMA CTY WS6661	5	5	81.7	31	-.4	100.	24	64.	21	.0	.0	517.5	-12.5	1.973	31	-1.07	.84	28
PERKINS	7003	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.450	31	-1.08	1.22	26
PIEDMONT	7068	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.110	31	*****	.87	27
PRAGUE	7264	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.871	31	-.34	1.70	28
PURCELL 5 SW	7327	5	81.6	31	-1.2	101.	26	55.	21	.0	.0	515.5	-36.5	1.472	31	-1.53	.55	27
SEMINOLE	8042	5	83.4	31	-.3	101.	28	62.	23	.0	.0	571.0	-9.0	.740	31	-2.21	.28	27
SHAWNEE	8110	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.540	31	-1.12	.72	27
STELLA	8479	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.660	31	*****	.73	9
STILLWATER 2 W	8501	5	81.7	31	-.4	99.	26	60.	21	.0	.0	517.5	-12.5	2.663	31	-1.13	1.17	27
STROUD 1 N	8563	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.081	31	*****	3.05	28
TECUMSEH	8751	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.770	31	*****	.63	27
TROUSDALE	8960	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.030	31	*****	2.21	29
UNION CITY 1 SE9086	5	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.680	31	-.46	.69	1
WELTY 1 SSE	9479	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.561	31	*****	3.50	28
WEWOKA	9575	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.541	31	.75	1.20	19

JULY 1988 SUMMARY FOR EAST CENTRAL DIVISION (CD6)

NAME	ID	CD	DEV						HEAT		DEV		COOL		DEV		TOT	NUM	FROM	MAX	24-HR	DAY
			MEAN	NUM	FROM	MAX	MIN	DAY	DEG	FROM	DEG	FROM	PPT	OBS	NORM							
ASHLAND	364	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.050	31	*****	1.72	19				
BEGGS	631	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.610	31	*****	3.82	28				
BOYNTON	1027	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.450	31	*****	1.65	28				
CALVIN	1391	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.203	31	1.65	2.61	19				
CHECOTAH	1711	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.083	31	2.62	2.79	28				
DEWAR 2 NE	2485	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.570	31	6.03	4.65	28				
DUSTIN	2690	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	10.240	31	*****	4.50	28				
EUFULA	2993	6	83.8	18	*****	101.	18	66.	9	.0	*****	338.0	*****	6.561	31	2.91	3.50	28				
HANNA	3884	6	81.4	31	*****	99.	18	59.	22	.0	*****	509.5	*****	7.191	31	4.03	2.62	28				
HARTSHORNE	3946	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.600	31	*****	2.33	19				
HASKELL	3956	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.740	31	2.56	2.02	27				
HOLDENVILLE	4235	6	81.5	31	-1.1	100.	18	61.	22	.0	.0	511.5	-34.5	5.380	31	1.92	1.62	19				
LAKE EUFAULA	4975	6	81.9	31	*****	103.	25	63.	22	.0	*****	524.0	*****	5.750	31	*****	2.31	28				
LYONS 2 N	5437	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.592	31	-.63	.90	11				
MCALESTER FAA	5664	6	81.7	31	-1.0	100.	24	59.	22	.0	.0	518.0	-56.0	3.181	31	-.23	1.01	8				
MCCURTAIN 1 SE	5693	6	83.5	31	*****	102.	18	58.	22	.0	*****	573.5	*****	2.243	31	-1.57	1.06	28				
MUSKOGEE	6130	6	82.5	31	-.1	102.	19	58.	22	.0	.0	542.5	-3.5	4.690	31	1.59	1.28	27				
OKMULGEE W W	6670	6	80.2	31	-1.5	101.	16	57.	21	.0	.0	470.0	-48.0	6.451	31	3.40	4.57	28				
OKTAHA 2 NE	6678	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.390	31	*****	1.73	28				
QUINTON	7372	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.522	31	3.72	1.95	28				
SALLISAW 2 NE	7862	6	82.7	19	*****	103.	18	56.	22	.0	*****	337.0	*****	3.060	31	-.49	1.03	20				
SCIPIO	7979	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.220	31	*****	1.62	19				
SCRAPER	7993	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.320	31	*****	.97	6				
SHORT	8170	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.671	31	*****	1.42	12				
STILWELL 1 NE	8506	6	80.1	31	*****	97.	24	59.	21	.0	*****	467.0	*****	3.433	31	-.30	1.17	12				
TAHLEQUAH	8677	6	79.4	31	-1.3	100.	4	57.	22	.0	.0	445.5	-41.5	8.561	31	5.17	2.07	19				
WEBBERS FALLS	9445	6	80.8	31	-1.3	103.	1	57.	22	.0	.0	490.5	-39.5	3.930	31	.78	1.45	28				
WESTVILLE	9523	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.630	31	*****	1.14	11				
WETUMKA 3 NE	9571	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	11.643	31	8.45	3.76	29				

JULY 1988 SUMMARY FOR SOUTHWEST DIVISION (CD7)

NAME	ID	CD	DEV						HEAT		DEV		COOL		DEV		TOT	NUM	FROM	MAX	24-HR	DAY
			MEAN	NUM	FROM	MAX	MIN	DAY	TEMP	DAY	DEG	FROM	DEG	FROM	PPT	OBS						
ALTUS IRR STA	179	7	83.0	31	-1.6	103.	17	62.	22	.0	.0	557.0	-51.0	2.103	31	.18	.60	9				
ALTUS DAM	184	7	82.9	31	*****	101.	14	58.	21	.0	*****	555.5	*****	.940	31	-1.66	.30	10				
ANADARKO	224	7	82.7	26	*****	101.	17	62.	22	.0	*****	460.5	*****	2.330	31	-.23	.71	9				
APACHE	260	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.840	31	*****	.47	25				
ALTUS AFB	447	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.331	28	*****	.66	25				
CARNEGIE 2 ENE	1504	7	82.5	30	-1.2	101.	17	57.	21	.0	.0	526.0	-54.0	3.240	31	.68	.88	1				
CHATTANOOGA	1706	7	83.5	31	-.8	102.	18	62.	21	.0	.0	574.0	-24.0	1.272	31	-1.28	.35	12				
DUNCAN 12 W	2668	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.770	31	*****	.35	2				
FREDERICK	3353	7	82.9	25	*****	100.	25	66.	21	.0	*****	447.0	*****	2.230	25	*****	.70	9				
GRANDFIELD 4 NW	3709	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.990	31	-1.07	.67	19				
HOBART FAA APT	4204	7	82.2	31	-1.3	102.	14	57.	21	.0	.0	532.0	-42.0	1.283	31	-1.21	.51	25				
HOLLIS	4249	7	81.8	30	-3.1	102.	24	56.	22	.0	.0	505.5	-111.5	1.541	30	*****	.56	29				
LAWTON	5063	7	83.2	31	-.5	100.	28	62.	20	.0	.0	564.0	-16.0	.382	31	-2.13	.11	18				
FORT SILL	5068	7	83.8	31	*****	101.	28	64.	21	.0	*****	583.5	*****	1.322	31	-1.19	.65	18				
LOOKEBA 2 ENE	5329	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.660	31	*****	1.41	29				
MANGUM RES STA	5509	7	84.7	31	.8	104.	29	66.	25	.0	.0	610.0	24.0	1.112	31	-2.09	.48	10				
RANDLETT 9 E	7403	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.931	31	*****	.96	19				
ROOSEVELT	7727	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.830	31	-.54	.76	25				
SEDAN	8016	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.140	31	*****	2.56	11				
SNYDER	8299	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.022	31	-.45	.94	25				
VINSON 3 WNW	9212	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.980	31	-.98	.60	10				
WALTERS	9278	7	83.0	31	-1.5	101.	27	62.	21	.0	.0	557.5	-47.5	2.061	31	-.90	.78	19				
WICHITA MT WLR	9629	7	82.4	31	-.2	101.	1	57.	21	.0	.0	540.0	-6.0	2.790	31	.30	1.70	10				
WILLOW	9668	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.570	31	*****	1.35	27				

JULY 1988 SUMMARY FOR SOUTH CENTRAL DIVISION (CD8)

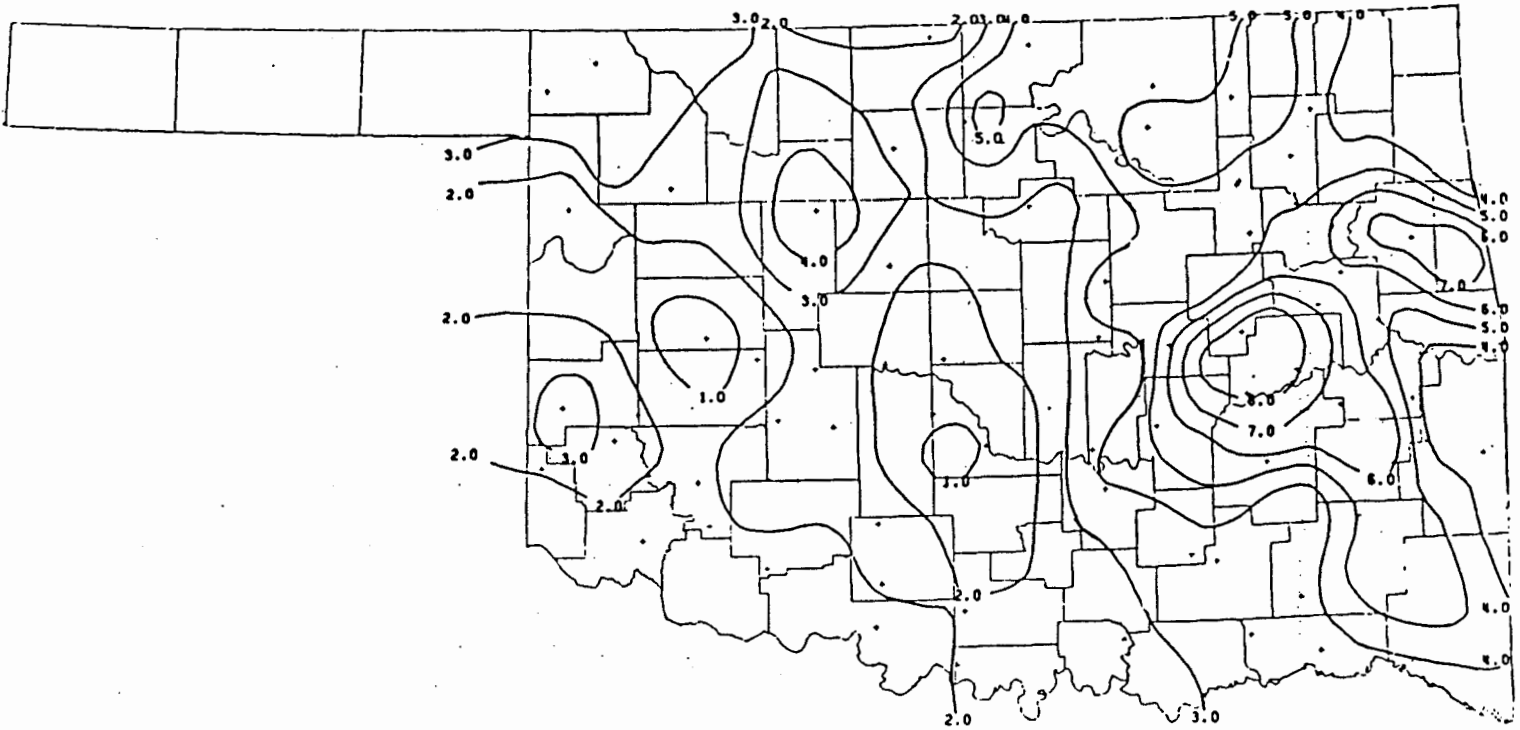
NAME	ID	CD	DEV						HEAT	DEV	COOL	DEV	TOT	NUM	FROM	MAX	24-HR	DAY
			MEAN	NUM	FROM	MAX	MIN	DAY	DEG	FROM	DEG	FROM						
ADA	17	8	82.3	31	-.4	100.	18	60.	21	.0	.0	537.5	-11.5	2.631	31	-.06	1.47	19
ALLEN	147	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.720	31	*****	1.65	19
ARDMORE	292	8	82.2	31	-2.6	98.	19	64.	22	.0	.0	532.0	-82.0	4.950	31	2.65	1.91	11
ATOKA DAM	394	8	83.2	31	*****	101.	19	62.	22	.0	*****	564.5	*****	2.900	31	*****	1.06	12
BOKCHITO	917	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.950	31	*****	2.50	12
CANEY	1437	8	81.7	31	*****	99.	18	61.	22	.0	*****	518.5	*****	2.160	31	*****	1.12	12
CENTRAHOMA	1648	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.510	31	*****	2.00	18
CHICKASAW NRA	1745	8	81.1	31	*****	99.	19	58.	21	.0	*****	499.5	*****	2.460	31	*****	1.12	12
COLEMAN	2011	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.900	31	*****	2.10	12
COMANCHE	2054	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.180	31	*****	4.01	19
DAISY 4 ENE	2354	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.131	31	4.81	4.90	19
DUNCAN	2660	8	82.0	31	-1.8	99.	18	63.	21	.0	.0	526.0	-57.0	4.760	31	2.43	3.60	19
DURANT USDA	2678	8	81.8	30	*****	99.	26	59.	22	.0	*****	504.5	*****	1.250	30	*****	.77	12
ELMORE CITY	2872	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.251	31	*****	.20	2
FARRIS 3 WNW	3083	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.260	31	*****	2.93	12
GRADY	3688	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.502	31	*****	1.05	19
HEALDTON	4001	8	82.0	31	*****	101.	18	61.	21	.0	*****	526.0	*****	2.410	31	.04	.98	19
HENNEPIN	4052	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.233	31	*****	.29	26
KINGSTON	4865	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.332	31	-1.00	1.22	12
LEHIGH	5108	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.931	31	*****	1.75	12
LINDSAY 2 W	5216	8	82.3	31	*****	99.	28	58.	21	.0	*****	537.5	*****	1.482	31	-1.13	.66	9
LOCO 6 SE	5247	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.170	31	*****	1.14	19
MADILL	5468	8	82.7	31	-1.0	100.	26	63.	22	.0	.0	547.5	-32.5	2.270	31	-.01	2.02	12
MARIETTA	5563	8	83.8	31	.2	101.	18	67.	21	.0	.0	581.5	4.5	3.900	31	1.76	1.65	12
MARLOW 1 WSW	5581	8	82.1	31	*****	100.	18	57.	21	.0	*****	530.0	*****	3.520	31	.95	1.70	19
MCGEE CREEK DAM	5713	8	83.1	31	*****	101.	2	61.	22	.0	*****	562.5	*****	3.150	31	*****	2.94	12
OSWALT	6787	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.320	31	*****	2.40	12
PAULS VALLEY	6926	8	82.5	31	-1.6	100.	26	59.	21	.0	.0	541.5	-50.5	2.312	31	-.02	.90	8
PONTOTOC	7214	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.700	31	1.11	1.50	3
TISHOMINGO NWLR	8884	8	81.9	29	*****	100.	18	58.	22	.0	*****	490.5	*****	3.341	31	.64	2.42	12
TUSSY	9032	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.851	31	*****	.49	27
WAURIKA	9395	8	84.0	31	-.7	103.	26	62.	21	.0	.0	590.0	-21.0	1.430	31	-.85	.73	19
WAURIKA DAM	9399	8	83.0	31	*****	101.	19	65.	22	.0	*****	557.0	*****	1.013	31	*****	.35	19

JULY 1988 SUMMARY FOR SOUTHEAST DIVISION (CD9)

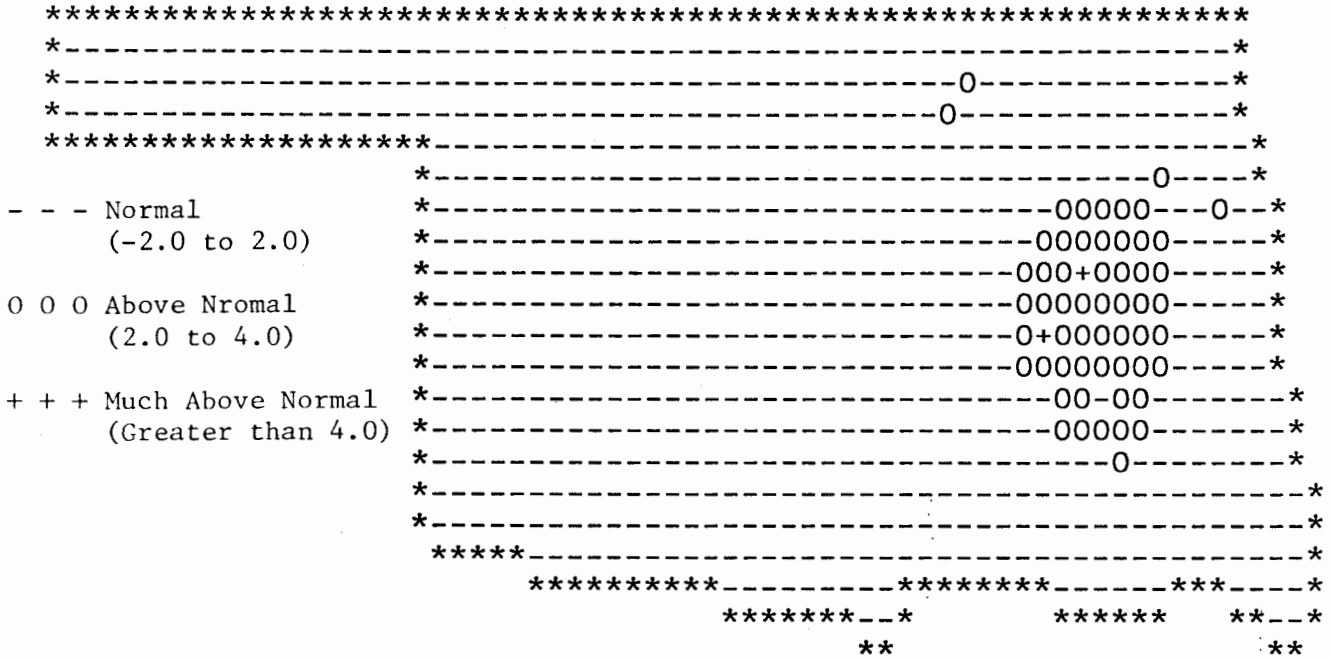
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		MEAN	NUM	FROM	MAX	MIN	DAY	TEMP	DAY	DEG	FROM	DEG	FROM	TOT	NUM	FROM	MAX
ANTLERS	256 9	82.4	31	.4	100.	25	58.	22	.0	.0	540.5	13.5	3.880	31	.71	3.35	12
BEAR MT TWR	584 9	81.6	20	*****	101.	1	59.	21	.0	*****	332.5	*****	6.630	31	2.58	2.68	12
BENGAL	670 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.922	31	*****	2.40	28
BOSWELL 4 NNW	980 9	82.0	31	*****	101.	25	58.	22	.0	*****	526.0	*****	4.432	31	1.78	2.11	2
BROKEN BOW 1 N	1162 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.720	31	.85	3.10	12
CARNASAW TWR	1499 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.690	31	1.55	3.35	12
CARTER TWR	1544 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.590	31	1.20	4.80	12
FANSHAWE	3065 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.070	31	.04	1.35	19
HEAVENER 1 SE	4008 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.510	31	-1.05	.73	20
HEE MT TWR	4017 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.250	31	*****	4.20	12
HUGO	4384 9	83.8	31	.8	102.	1	59.	22	.0	.0	582.5	24.5	2.610	31	-.44	2.30	12
IDABEL	4451 9	81.3	31	-.6	97.	27	59.	22	.0	.0	505.5	-18.5	5.960	31	2.41	2.22	13
POTEAU W W	7254 9	81.2	31	*****	100.	25	56.	21	.0	*****	502.0	*****	3.142	31	*****	1.37	11
SPIRO	8416 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.840	31	-.95	1.19	27
TUSKAHOMA	9023 9	81.8	31	*****	100.	18	54.	22	.0	*****	520.5	*****	6.221	31	*****	1.60	12
VALLIANT 3 W	9118 9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.541	31	.96	3.20	12

JULY 1988 CLIMATE DIVISION SUMMARY

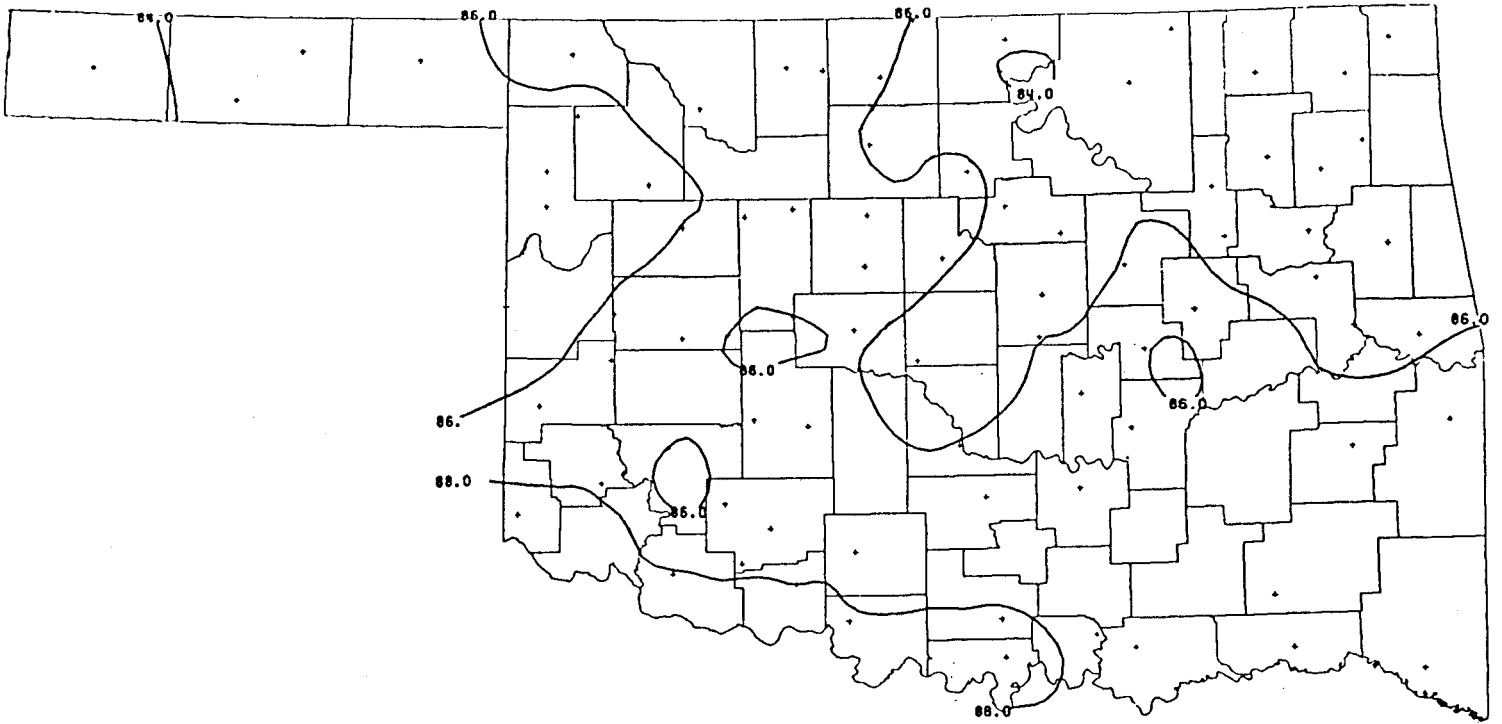
CLIMATE	MEAN	NUM	DEV				HEAT	DEV	COOL	DEV	DEV					
			FROM	MAX	MIN	DAY	DEGREE	FROM	DEGREE	FROM	TOT	NUM	FROM	MAX		
DIV	TEMP	STA	NORM	TEMP	DAY	TEMP	DAY	DAYS	NORM	DAYS	NORM	PPT	STA	NORM	24-HR	DAY
1	78.2	12	-2.2	104.0	29	48.0	7	.0	.0	407.7	-71.0	3.93	14	1.30	5.37	7
2	81.3	14	-1.8	105.0	16	56.0	21	.0	.0	503.9	-55.6	3.16	24	-.04	3.33	20
3	81.4	16	-.4	106.0	13	56.0	22	.0	.0	506.8	-14.0	4.39	33	1.04	4.40	11
4	81.3	9	-1.6	104.0	31	55.0	21	.0	.0	505.0	-49.9	2.62	20	.31	2.17	17
5	81.9	12	-.8	103.0	16	55.0	21	.0	.0	524.3	-26.0	2.45	35	-.53	6.14	28
6	81.3	10	-.8	103.0	1	56.0	22	.0	.0	505.2	-27.8	5.65	29	2.24	4.65	28
7	83.0	11	-1.1	104.0	29	56.0	22	.0	.0	555.0	-36.2	1.74	21	-.69	2.56	11
8	82.5	16	-1.4	103.0	26	57.0	21	.0	.0	541.0	-45.6	2.93	32	.37	4.00	19
9	82.1	6	-.2	102.0	1	54.0	22	.0	.0	529.5	-6.8	4.63	16	.97	4.80	12



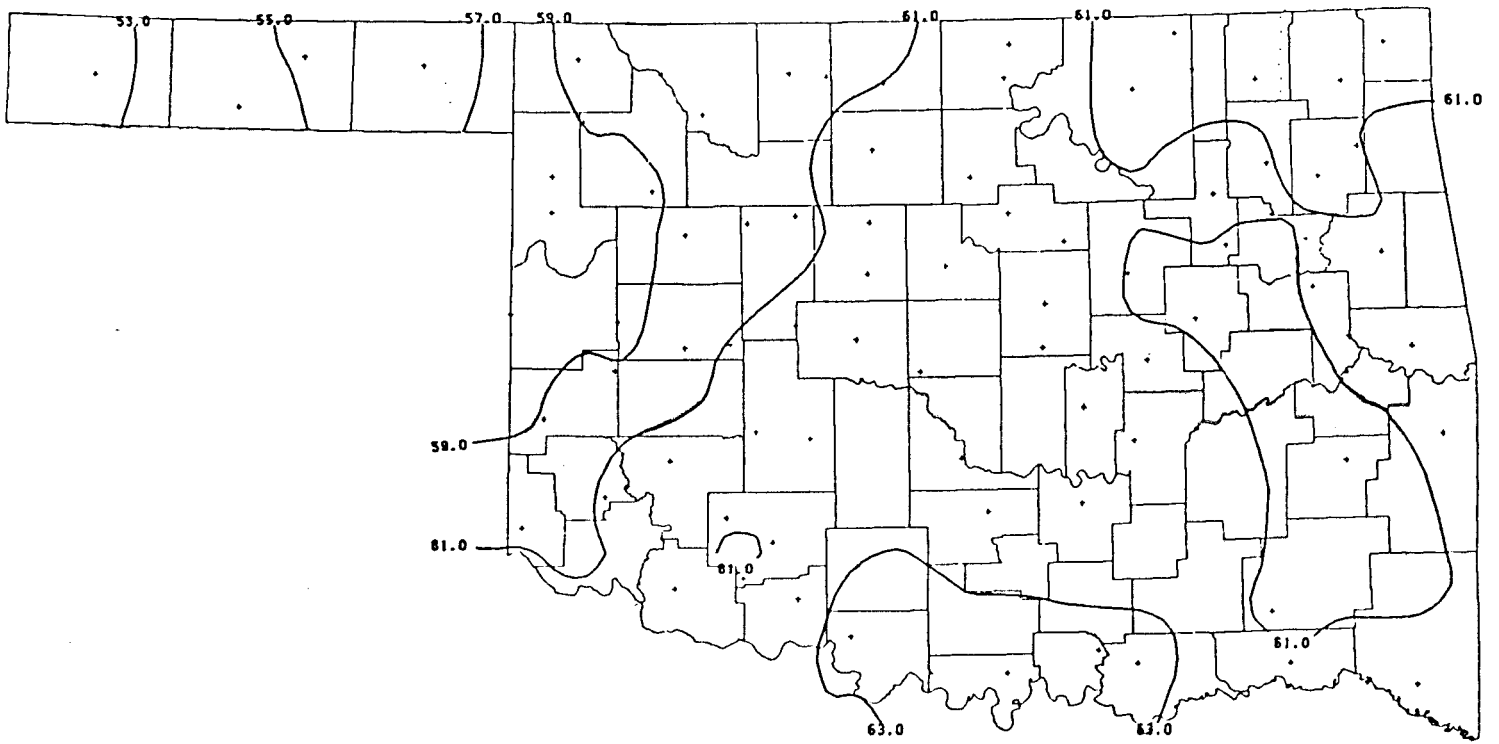
JULY 1988 TOTAL PRECIPITATION
(Inches)



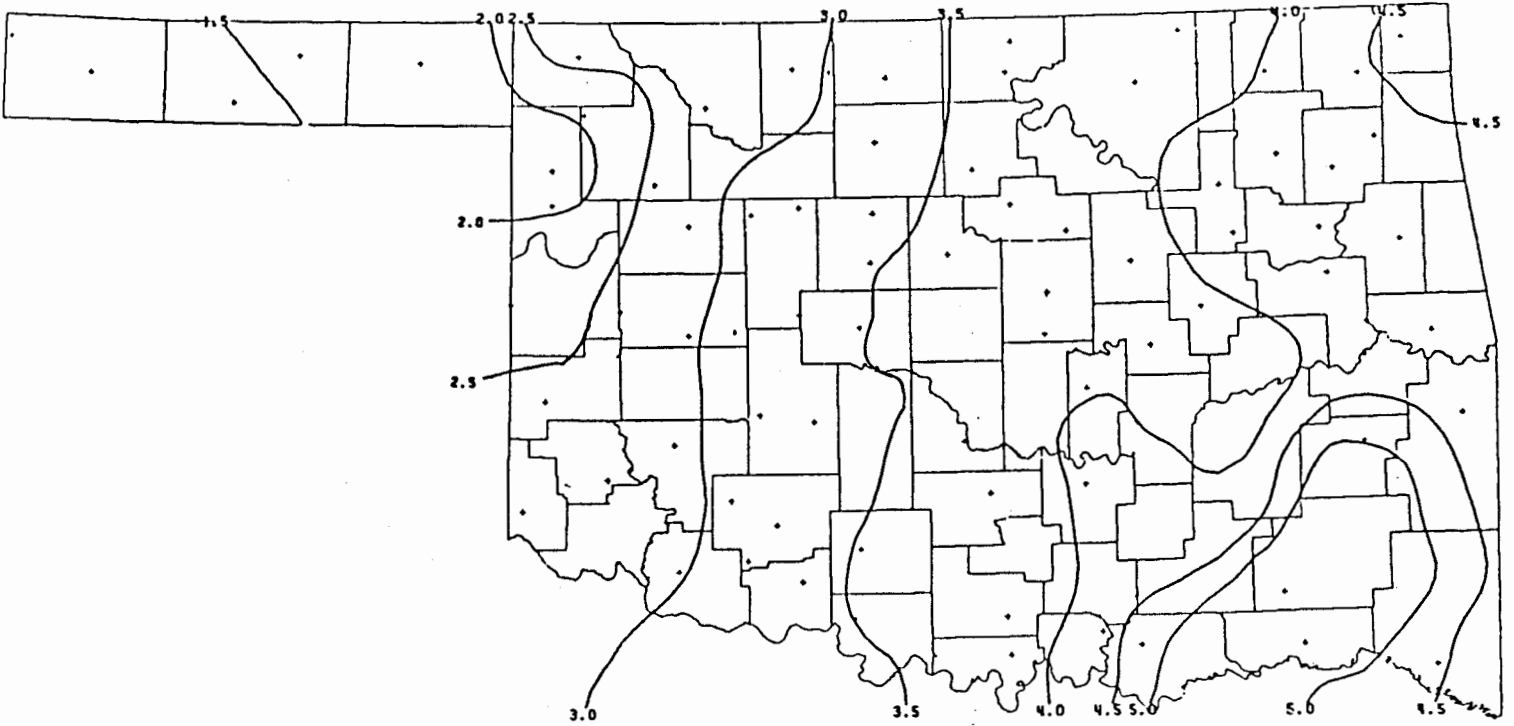
JULY 1988 DEVIATION FROM NORMAL PRECIPITATION



30-YEAR MEAN SEPTEMBER DAILY MAXIMUM TEMPERATURE



30-YEAR MEAN SEPTEMBER DAILY MINIMUM TEMPERATURE



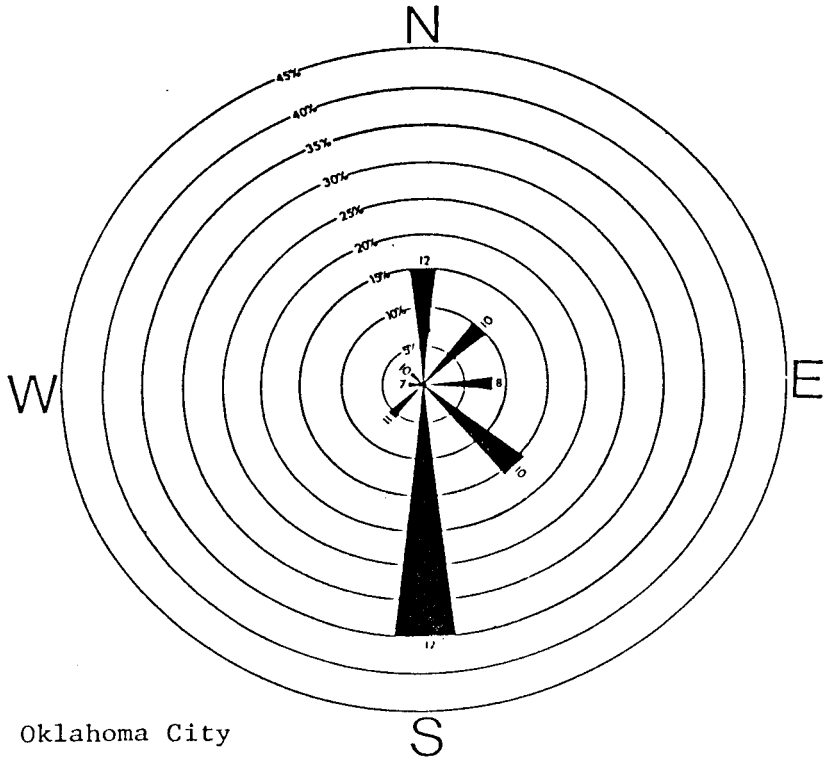
30-YEAR MEAN SEPTEMBER PRECIPITATION

OKLAHOMA CITY SEPTEMBER 1988

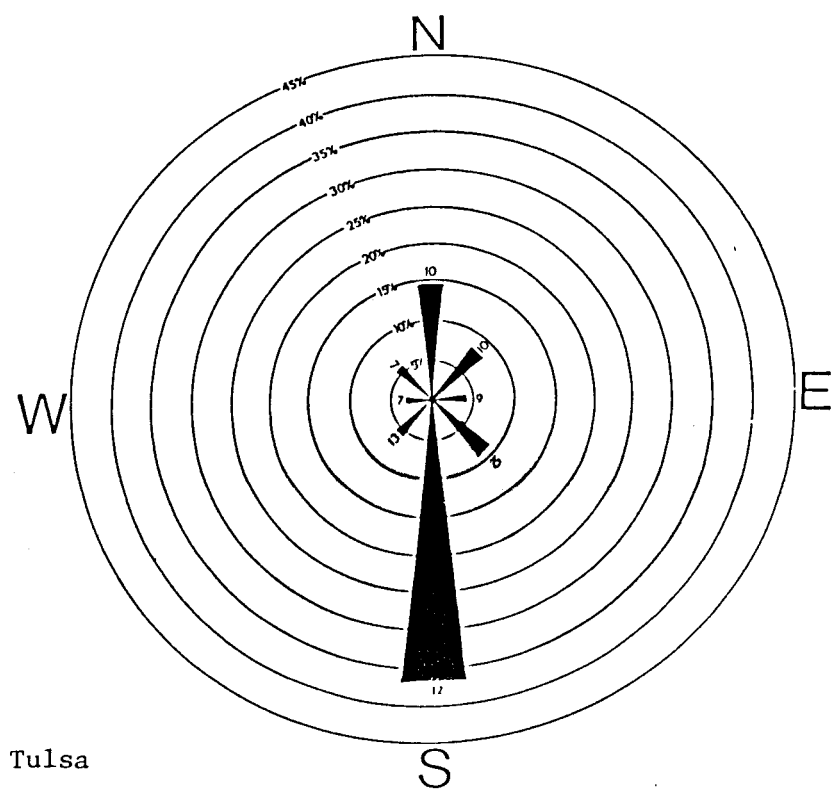
SUNRISE AND SUNSET

DATE	SUNRISE	SUNSET	HOURS OF DAYLIGHT
880901	7: 5AM	7:56PM	12:51
880902	7: 5AM	7:54PM	12:49
880903	7: 6AM	7:53PM	12:47
880904	7: 6AM	7:52PM	12:45
880905	7: 7AM	7:50PM	12:43
880906	7: 8AM	7:49PM	12:41
880907	7: 8AM	7:48PM	12:39
880908	7: 9AM	7:46PM	12:37
880909	7:10AM	7:45PM	12:35
880910	7:10AM	7:44PM	12:33
880911	7:11AM	7:42PM	12:32
880912	7:11AM	7:41PM	12:30
880913	7:12AM	7:40PM	12:28
880914	7:13AM	7:38PM	12:26
880915	7:13AM	7:37PM	12:24
880916	7:14AM	7:35PM	12:22
880917	7:15AM	7:34PM	12:20
880918	7:15AM	7:33PM	12:18
880919	7:16AM	7:31PM	12:16
880920	7:16AM	7:30PM	12:13
880921	7:17AM	7:29PM	12:11
880922	7:18AM	7:27PM	12: 9
880923	7:18AM	7:26PM	12: 7
880924	7:19AM	7:24PM	12: 5
880925	7:20AM	7:23PM	12: 3
880926	7:20AM	7:22PM	12: 1
880927	7:21AM	7:20PM	11:59
880928	7:22AM	7:19PM	11:57
880929	7:22AM	7:18PM	11:55
880930	7:23AM	7:16PM	11:53

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 percentage of winds coming from a direction. The numbers at the end of the bars indicate the average speed of winds from that direction. Graphics by Tim Johnson.



Oklahoma City



Tulsa

The data on this calendar are for Oklahoma City.
 Normal values are calculated for the period
 1950-1979. Extremes are found for the period
 of record (1924-present).

SEPTEMBER 1988
 CLIMATE CALENDAR

1		2		3		4		5		6		7	
Normal	89.3	Normal	89.0	Normal	90.2	Normal	88.2	Normal	87.4	Normal	88.2	Normal	87.9
Actual	—	Actual	—	Actual	—	Actual	—	Actual	—	Actual	—	Actual	—
max	65.9	max	66.0	max	66.4	max	65.1	max	65.1	max	65.0	max	65.0
min	.155	min	.110	min	.316	min	.096	min	.050	min	.030	min	.085
pcpn	0	pcpn	0	pcpn	0	pcpn	0	pcpn	0	pcpn	0	pcpn	0
HDD	13	HDD	13	HDD	13	HDD	13	HDD	12	HDD	12	HDD	12
CDD	105-1939	CDD	104-1939	CDD	105-1947	CDD	106-1947	CDD	103-1931	CDD	106-1947	CDD	102-1936
Highest Max	69-1932	Highest Max	68-1967	Highest Max	71-1974	Highest Max	66-1961	Highest Max	64-1962	Highest Max	72-1962	Highest Max	66-1962
Lowest Max	53-1956	Lowest Max	52-1974	Lowest Max	47-1974	Lowest Max	46-1974	Lowest Max	47-1974	Lowest Max	51-1974	Lowest Max	52-1950
Lowest Min	77-1936	Lowest Min	78-1936	Lowest Min	80-1939	Lowest Min	79-1936	Lowest Min	77-1939	Lowest Min	76-1936	Lowest Min	77-1936
Highest Min	2.53-1974	Highest Min	2.04-1969	Highest Min	3.16-1926	Highest Min	1.74-1940	Highest Min	.70-1926	Highest Min	.75-1973	Highest Min	.86-1951
Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—
Greatest pcpn	2.30-1982	Greatest pcpn	2.53-1970	Greatest pcpn	3.87-1959	Greatest pcpn	1.98-1934	Greatest pcpn	3.03-1961	Greatest pcpn	.78-1977	Greatest pcpn	3.61-1957
Normal	88.2	Normal	87.1	Normal	85.5	Normal	86.5	Normal	84.1	Normal	83.4	Normal	83.5
Actual	—	Actual	—	Actual	—	Actual	—	Actual	—	Actual	—	Actual	—
max	64.4	max	64.6	max	62.9	max	62.2	max	62.7	max	61.2	max	61.9
min	.030	min	.056	min	.090	min	.049	min	.209	min	.137	min	.184
pcpn	0	pcpn	0	pcpn	0	pcpn	0	pcpn	0	pcpn	0	pcpn	0
HDD	12	HDD	11	HDD	10	HDD	10	HDD	9	HDD	8	HDD	9
CDD	96-1936	CDD	99-1936	CDD	100-1936	CDD	98-1930	CDD	102-1930	CDD	107-1965	CDD	102-1965
Highest Max	73-1957	Highest Max	67-1928	Highest Max	64-1928	Highest Max	70-1928	Highest Max	65-1975	Highest Max	61-1975	Highest Max	58-1975
Lowest Max	48-1957	Lowest Max	51-1962	Lowest Max	47-1962	Lowest Max	48-1940	Lowest Max	48-1959	Lowest Max	50-1959	Lowest Max	47-1961
Lowest Min	77-1936	Lowest Min	77-1936	Lowest Min	77-1938	Lowest Min	77-1936	Lowest Min	78-1930	Lowest Min	78-1978	Lowest Min	77-1931
Highest Min	2.66-1940	Highest Min	1.22-1951	Highest Min	1.98-1934	Highest Min	1.69-1943	Highest Min	1.17-1971	Highest Min	.78-1977	Highest Min	77-1931
Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—
Greatest pcpn	2.30-1982	Greatest pcpn	1.22-1951	Greatest pcpn	1.98-1934	Greatest pcpn	1.69-1943	Greatest pcpn	1.49-1942	Greatest pcpn	.99-1946	Greatest pcpn	3.61-1957
Normal	83.8	Normal	83.4	Normal	84.1	Normal	84.9	Normal	84.1	Normal	83.8	Normal	81.2
Actual	—	Actual	—	Actual	—	Actual	—	Actual	—	Actual	—	Actual	—
max	62.6	max	62.6	max	62.0	max	61.5	max	62.4	max	61.4	max	61.0
min	.093	min	.157	min	.149	min	.054	min	.078	min	.093	min	.128
pcpn	0	pcpn	0	pcpn	0	pcpn	0	pcpn	0	pcpn	0	pcpn	0
HDD	9	HDD	9	HDD	8	HDD	9	HDD	9	HDD	8	HDD	7
CDD	100-1965	CDD	101-1978	CDD	99-1952	CDD	99-1952	CDD	98-1954	CDD	100-1954	CDD	97-1980
Highest Max	58-1949	Highest Max	66-1966	Highest Max	58-1973	Highest Max	53-1971	Highest Max	56-1971	Highest Max	56-1983	Highest Max	61-1934
Lowest Max	47-1961	Lowest Max	47-1979	Lowest Max	46-1981	Lowest Max	42-1981	Lowest Max	44-1971	Lowest Max	41-1971	Lowest Max	39-1983
Lowest Min	78-1931	Lowest Min	76-1965	Lowest Min	78-1978	Lowest Min	78-1978	Lowest Min	76-1978	Lowest Min	76-1978	Lowest Min	76-1931
Highest Min	2.30-1982	Highest Min	1.15-1969	Highest Min	1.42-1936	Highest Min	1.17-1971	Highest Min	1.49-1942	Highest Min	.99-1946	Highest Min	76-1931
Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—
Greatest pcpn	2.30-1982	Greatest pcpn	1.15-1969	Greatest pcpn	1.42-1936	Greatest pcpn	1.17-1971	Greatest pcpn	1.49-1942	Greatest pcpn	.99-1946	Greatest pcpn	1.48-1957
Normal	81.4	Normal	82.0	Normal	80.4	Normal	81.1	Normal	81.3	Normal	80.9	Normal	80.7
Actual	—	Actual	—	Actual	—	Actual	—	Actual	—	Actual	—	Actual	—
max	59.4	max	60.0	max	59.0	max	59.3	max	59.2	max	59.0	max	57.5
min	.363	min	.037	min	.250	min	.079	min	.155	min	.115	min	.005
pcpn	1	pcpn	1	pcpn	1	pcpn	1	pcpn	1	pcpn	1	pcpn	0
HDD	6	HDD	7	HDD	6	HDD	6	HDD	6	HDD	6	HDD	2
CDD	96-1956	CDD	93-1984	CDD	98-1939	CDD	97-1938	CDD	98-1977	CDD	96-1953	CDD	103-1953
Highest Max	64-1972	Highest Max	63-1974	Highest Max	56-1974	Highest Max	53-1926	Highest Max	46-1936	Highest Max	48-1926	Highest Max	53-1926
Lowest Max	43-1975	Lowest Max	46-1983	Lowest Max	48-1942	Lowest Max	43-1926	Lowest Max	39-1942	Lowest Max	38-1942	Lowest Max	53-1926
Lowest Min	78-1931	Lowest Min	73-1931	Lowest Min	74-1931	Lowest Min	74-1933	Lowest Min	73-1981	Lowest Min	70-1971	Lowest Min	41-1936
Highest Min	7.53-1970	Highest Min	.71-1985	Highest Min	3.87-1959	Highest Min	.95-1955	Highest Min	1.74-1973	Highest Min	1.75-1936	Highest Min	73-1977
Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—
Greatest pcpn	7.53-1970	Greatest pcpn	.71-1985	Greatest pcpn	3.87-1959	Greatest pcpn	.95-1955	Greatest pcpn	1.74-1973	Greatest pcpn	1.75-1936	Greatest pcpn	2.88-1945
Normal	81.7	Normal	80.3	Normal	81.7	Normal	81.7	Normal	81.7	Normal	80.9	Normal	80.7
Actual	—	Actual	—	Actual	—	Actual	—	Actual	—	Actual	—	Actual	—
max	57.6	max	55.4	max	55.4	max	55.4	max	59.2	max	59.0	max	57.5
min	.005	min	.068	min	.068	min	.068	min	.037	min	.037	min	.005
pcpn	1	pcpn	2	pcpn	2	pcpn	2	pcpn	1	pcpn	1	pcpn	0
HDD	6	HDD	5	HDD	5	HDD	5	HDD	6	HDD	6	HDD	2
CDD	98-1953	CDD	100-1977	CDD	100-1977	CDD	100-1977	CDD	98-1939	CDD	96-1953	CDD	103-1953
Highest Max	47-1945	Highest Max	47-1945	Highest Max	47-1945	Highest Max	47-1945	Highest Max	46-1983	Highest Max	48-1926	Highest Max	53-1926
Lowest Max	41-1976	Lowest Max	37-1972	Lowest Max	37-1972	Lowest Max	37-1972	Lowest Max	73-1931	Lowest Max	70-1971	Lowest Max	41-1936
Lowest Min	71-1933	Lowest Min	72-1977	Lowest Min	72-1977	Lowest Min	72-1977	Lowest Min	74-1933	Lowest Min	70-1971	Lowest Min	41-1936
Highest Min	2.90-1986	Highest Min	1.79-1986	Highest Min	1.79-1986	Highest Min	1.79-1986	Highest Min	1.74-1973	Highest Min	1.75-1936	Highest Min	73-1977
Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—	Greatest pcpn	—
Greatest pcpn	2.90-1986	Greatest pcpn	1.79-1986	Greatest pcpn	1.79-1986	Greatest pcpn	1.79-1986	Greatest pcpn	1.74-1973	Greatest pcpn	1.75-1936	Greatest pcpn	2.88-1945