# OKLAHOMA
# MONTHLY SUMMARY
# NOVEMBER 1989

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## NOVEMBER 1989 OKLAHOMA SUMMARY

Dry weather during November, Oklahoma's second consecutive extremely dry month, lead to further depletion of soil moisture supplies threatening crops and pasture and supporting numerous extensive wildfires. Each Climate Division (CD) received less than 20% of its normal precipitation for the month (see Map 1) as the State suffered its third driest November on record (see Table 1). Many stations recorded no precipitation during the entire month. Above normal temperatures and extremely dry weather Statewide aggravated the moisture shortage.

A weak surface front on November 1 delivered the only recorded precipitation of the month for several northern and central stations. Little available low-level moisture and only weak upper-level support limited most precipitation accumulations to less than .10". Nighttime sub-freezing temperatures briefly changed the precipitation to snow producing Oklahoma City's earliest snowfall in 22 years.

Sunny skies and an unusually warm, very dry southwesterly wind which followed the cold frontal passage sustained unseasonally high temperatures for several days. The warm air, more typical of mid-October, was very dry (see Figure 1) resulting in high evaporation rates which further tapped moisture from the critically dry soil. These conditions and abundant dead and drying organic matter remaining after a prolific and very wet summer combined to support hundreds of wildfires. Officials reported 42 fires on November 11, including one blaze which forced the evacuation of 50 Mannford homes. Over the next several days, while Forestry Division firefighters fought 50 to 60 fires daily, several thousand acres were destroyed. A State-mandated ban on outdoor fires issued in mid-month helped reduce fires by about 50%, according to Rob Doye of the State Agriculture Department.

A cold front produced limited additional precipitation in the eastern two-thirds of the State on November 21 and 22. Amounts ranged from nearly .10" in the central one-third to over .50" in the eastern one-third of the State. Strong high pressure behind the cold front accompanied a Canadian air mass into Oklahoma. The 20-30 mph winds and dry air associated with the air mass again increased fire danger. Southerly winds quickly returned, however, and temperatures returned to normal by November 26. Another dry cold front quickly followed on November 27. This cold Arctic air mass lowered temperatures into the teens as far south as Altus on the morning of November 29.

By month's end, a virtually Statewide topsoil moisture shortage was adversely affecting agriculture. The Panhandle and northeastern parts of the State reported forage shortages. Cattle grazing on western Oklahoma pastureland uprooted weakly-rooted wheat plants. Small grain and late-maturing row crop growth lagged behind expected rates. In spite of surface moisture shortages, the adequate subsoil moisture supply established during Oklahoma's excessively wet summer months remains over nearly one-half of the State.

-R. J. Sladewski

**Map 1. November 1989 percent of normal precipitation.**

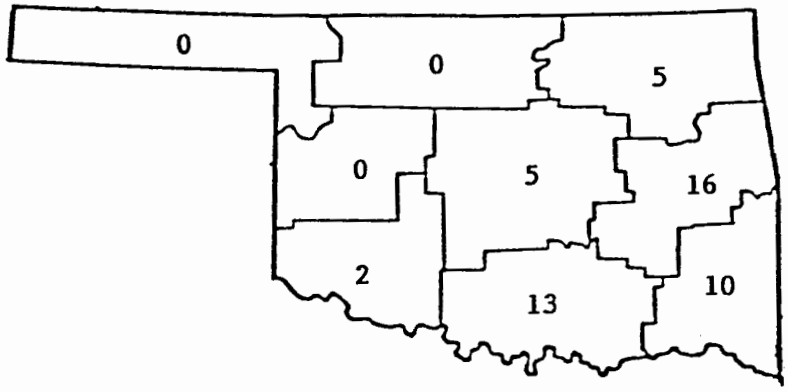



Table 1. Oklahoma's five driest Novembers (1892-1989).

| RANK | YEAR | STATEWIDE-AVERAGED PRECIPITATION |
|---|---|---|
| 1. | 1910 | .12" |
| 2. | 1949 | .14" |
| 3. | 1989 | .15" |
| 4. | 1955 | .19" |
| 5. | 1904 | .21" |

These plots of Tulsa dew point and relative humidity for November 15-17, 1989 verse the long-term November mean conditions reveal the extremely dry conditions during one of Oklahoma's most destructive wildfire months on record. Although low air moisture itself does not trigger a wildfire, Department of Agriculture expert Rob Doye notices more dangerously erratic and powerful fires under such conditions. Strong winds and abundant drying organic matter also fueled this year's destruction.

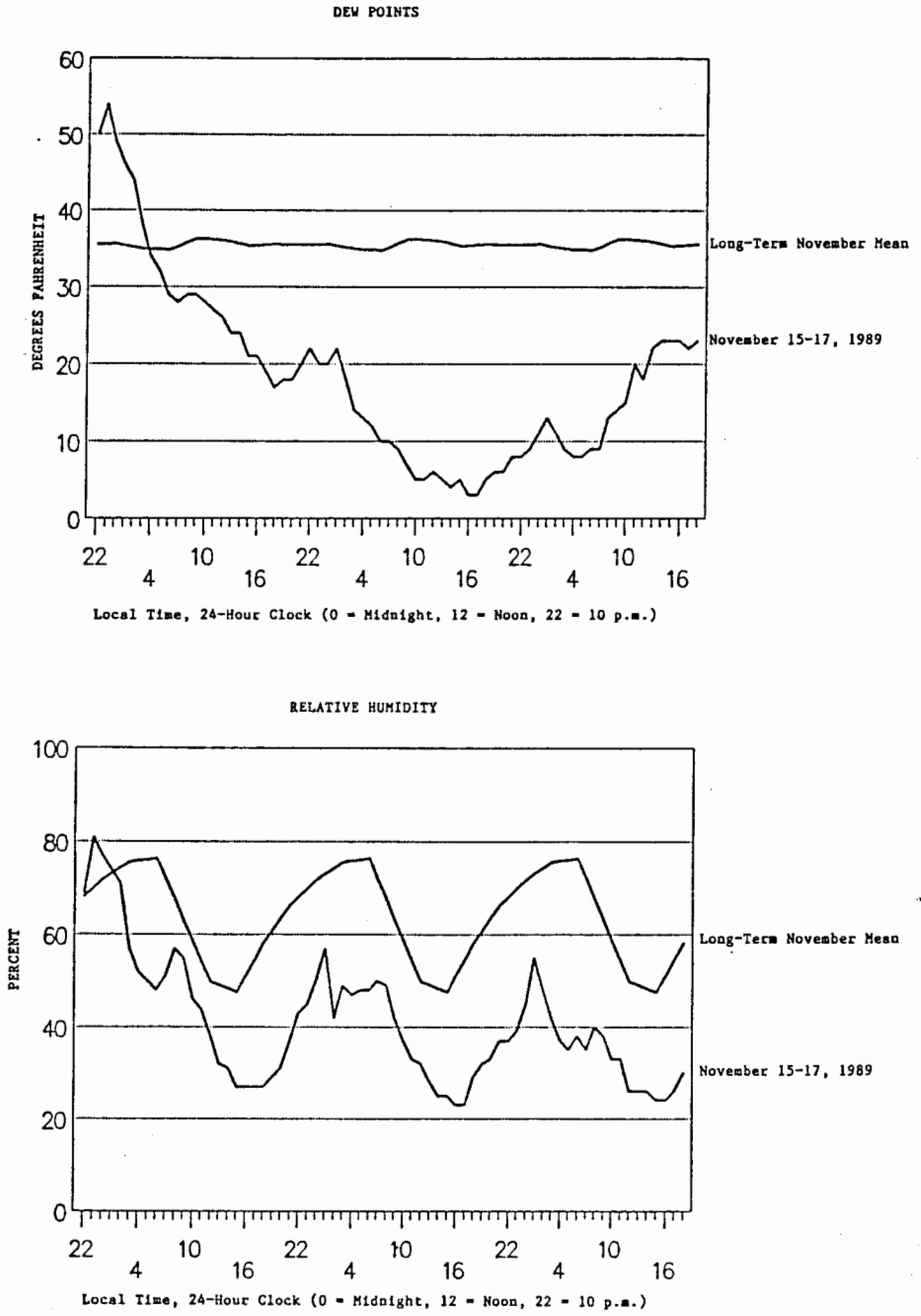



Figure 1. Tulsa low-level moisture comparisons between November 15-17, 1989 and mean November conditions.

## TABLE OF 1988/1989 COMPARISONS

| Station | November Temperature (F) 88 | 89 | November Precipitation (in.) 88 | 89 |
|---|---|---|---|---|
| ARNETT | 47.3 | 47.2 | .76 | .00 |
| ENID | 50.0 | 49.3 | 1.74 | .04 |
| MUTUAL | 47.1 | 47.2 | .63 | .001 |
| TULSA | 52.7 | 54.4 | 4.38 | .15 |
| ELK CITY | 50.3 | 51.6 | 1.77 | .00 |
| OKLAHOMA CITY | 51.9 | 53.6 | 2.43 | .09 |
| MCALESTER | 53.9 | 55.5 | 3.87 | .46 |
| ALTUS IRR. STA. | 52.7 | 53.1 | .46 | .00 |
| DURANT | 53.5 | 54.0 | 2.43 | .15 |
| ADA | 52.4 | 54.3 | 2.43 | .31 |
| ANTLERS | 54.2 | 54.9 | 3.10 | .00 |

## EXTREMES

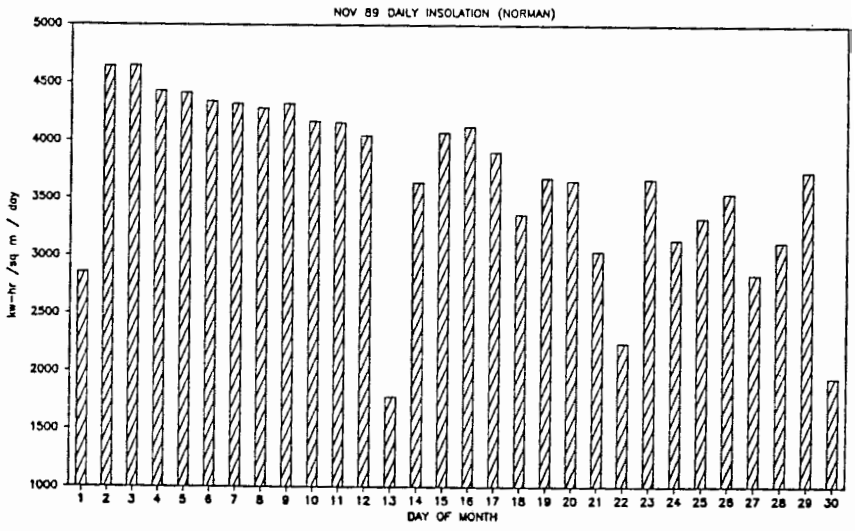
| Variable | Station | Division | Observation | Date |
|---|---|---|---|---|
| Minimum Temperature (F) | Taloga | 4 | 10 | 29 |
| Maximum Temperature (F) | Bear Mt | 9 | 89 | 5 |
| Maximum 24-hour Precipitation | Pontotoc | 8 | 1.80" | 22 |

## INSOLATION DATA AVAILABLE

The University of Oklahoma's School of Meteorology is observing and archiving incoming solar radiation data as part of a cooperative effort with the Agricultural Research Service, USDA at Durant, OK. The observation site, operated continuously since September 1987, is located at Max Westheimer Airport in Norman. The data are representative of central Oklahoma and available through the Oklahoma Climatological Survey. The table and chart below depict the November 1989 daily observations.

**November 1989 Daily Insolation Data for Norman, OK**
**(Insolation units are watt-hours per square meter per day)**

| DATE | INSOLATION AMOUNT |
|---|---|
| 1 | 2860.30 |
| 2 | 4640.87 |
| 3 | 4645.87 |
| 4 | 4433.37 |
| 5 | 4416.42 |
| 6 | 4341.42 |
| 7 | 4320.59 |
| 8 | 4281.98 |
| 9 | 4319.76 |
| 10 | 4169.20 |
| 11 | 4158.09 |
| 12 | 4045.87 |
| 13 | 1779.38 |
| 14 | 3638.64 |
| 15 | 4071.14 |
| 16 | 4124.20 |
| 17 | 3903.92 |
| 18 | 3359.75 |
| 19 | 3679.47 |
| 20 | 3653.64 |
| 21 | 3039.19 |
| 22 | 2245.82 |
| 23 | 3667.81 |
| 24 | 3141.41 |
| 25 | 3328.08 |
| 26 | 3545.03 |
| 27 | 2841.97 |
| 28 | 3121.97 |
| 29 | 3738.36 |
| 30 | 1942.13 |



## NOVEMBER 1989 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 | 47.2 | 30 | 1.5 | 85. | 12 | 17. | 29 | 534.5 | -44.5 | .5 | .5 | .000 | 30 | -1.09 | .00 | 30 |
| BEAVER | 593 | 1 | 44.8 | 30 | .2 | 84. | 13 | 13. | 29 | 606.0 | -6.0 | .0 | .0 | .000 | 30 | -.89 | .00 | 30 |
| BOISE CITY 2 E | 908 | 1 | 48.0 | 29 | 4.1 | 79. | 4 | 13. | 16 | 493.5 | -139.5 | .0 | .0 | .001 | 30 | -.63 | .00 | 1 |
| BUFFALO | 1243 | 1 | 49.4 | 30 | 2.4 | 85. | 11 | 13. | 23 | 469.5 | -70.5 | 1.0 | 1.0 | .000 | 30 | -1.33 | .00 | 30 |
| FARGO | 3070 | 1 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -1.02 | .00 | 30 |
| GAGE FAA APT | 3407 | 1 | 48.5 | 30 | 3.2 | 85. | 11 | 14. | 29 | 497.0 | -94.0 | 1.0 | 1.0 | .000 | 30 | -.84 | .00 | 30 |
| GATE | 3489 | 1 | 46.2 | 27 | ***** | 77. | 21 | 15. | 16 | 507.0 | ****** | .0 | ****** | .000 | 28 | ***** | .00 | 30 |
| GOODWELL RES ST | 3628 | 1 | 46.1 | 30 | 1.8 | 81. | 13 | 13. | 16 | 568.0 | -53.0 | .0 | .0 | .000 | 30 | -.64 | .00 | 30 |
| GUYMON | 3835 | 1 | 46.8 | 28 | ***** | 82. | 12 | 14. | 2 | 509.5 | ****** | .0 | ****** | .001 | 30 | ***** | .00 | 2 |
| HOOKER | 4298 | 1 | 46.5 | 30 | 2.4 | 82. | 13 | 14. | 16 | 554.5 | -72.5 | .0 | .0 | .000 | 30 | -.76 | .00 | 30 |
| KENTON | 4766 | 1 | 44.9 | 30 | 1.0 | 81. | 13 | 11. | 16 | 603.5 | -29.5 | .0 | .0 | .001 | 30 | -.53 | .00 | 2 |
| LAVERNE | 5045 | 1 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -.99 | .00 | 30 |
| OPTIMA LAKE | 6740 | 1 | 45.5 | 29 | ***** | 83. | 13 | 12. | 28 | 566.5 | ****** | .0 | ****** | .000 | 29 | ***** | .00 | 30 |
| RANGE | 7412 | 1 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| REGNIER | 7534 | 1 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -.51 | .00 | 30 |
| TURPIN 4 SSE | 9017 | 1 | 45.1 | 30 | ***** | 81. | 13 | 14. | 16 | 596.5 | ****** | .0 | ****** | .000 | 30 | ***** | .00 | 30 |

## NOVEMBER 1989 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 | 49.7 | 30 | ***** | 85. | 11 | 18. | 28 | 464.0 | ****** | 4.0 | ****** | .000 | 30 | ***** | .00 | 30 |
| VANCE AFB | 302 | 2 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .030 | 29 | ***** | .03 | 2 |
| BILLINGS | 755 | 2 | 50.3 | 30 | ***** | 79. | 12 | 13. | 29 | 449.5 | ****** | 7.5 | ****** | .002 | 30 | -1.89 | .00 | 22 |
| BLACKWELL 2E | 818 | 2 | 48.2 | 30 | ***** | 78. | 11 | 18. | 29 | 504.0 | ****** | 1.0 | ****** | .002 | 30 | ***** | .00 | 22 |
| BRAMAN | 1075 | 2 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .061 | 30 | ***** | .06 | 2 |
| CHEROKEE | 1724 | 2 | 48.6 | 30 | 1.3 | 83. | 11 | 16. | 29 | 494.5 | -36.5 | 2.5 | 2.5 | .000 | 30 | -1.28 | .00 | 30 |
| ENID | 2912 | 2 | 49.4 | 30 | .9 | 81. | 11 | 20. | 28 | 470.5 | -24.5 | 3.5 | 3.5 | .040 | 30 | -1.74 | .04 | 2 |
| FREEDOM | 3358 | 2 | 46.7 | 30 | ***** | 86. | 11 | 13. | 23 | 550.0 | ****** | .0 | ****** | .000 | 30 | ***** | .00 | 30 |
| GREAT SALT PLNS | 3740 | 2 | 48.7 | 30 | ***** | 87. | 12 | 18. | 29 | 495.5 | ****** | 6.0 | ****** | .002 | 30 | -1.45 | .00 | 22 |
| HARDY | 3909 | 2 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .001 | 30 | ***** | .00 | 21 |
| HELENA 1 SSE | 4019 | 2 | 45.5 | 30 | ***** | 83. | 12 | 15. | 29 | 585.5 | ****** | .0 | ****** | .002 | 30 | -1.54 | .00 | 22 |
| JEFFERSON | 4573 | 2 | 48.1 | 30 | .3 | 85. | 11 | 12. | 29 | 508.5 | -7.5 | 2.0 | 2.0 | .001 | 30 | -1.92 | .00 | 1 |
| LAMONT | 5013 | 2 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .020 | 30 | ***** | .02 | 2 |
| MEDFORD | 5768 | 2 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .011 | 30 | ***** | .01 | 8 |
| MORRISON | 6065 | 2 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .040 | 30 | ***** | .04 | 22 |
| MUTUAL | 6139 | 2 | 47.2 | 30 | .6 | 84. | 12 | 19. | 29 | 533.5 | -18.5 | .5 | .5 | .001 | 30 | -1.15 | .00 | 22 |
| NEWKIRK | 6278 | 2 | 49.7 | 30 | 2.3 | 78. | 12 | 19. | 29 | 460.5 | -67.5 | 1.5 | 1.5 | .031 | 30 | -1.91 | .03 | 22 |
| ORIENTA | 6751 | 2 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| PERRY | 7012 | 2 | 45.7 | 30 | -3.9 | 70. | 6 | 14. | 29 | 580.0 | 118.0 | .0 | .0 | .040 | 30 | -1.76 | .04 | 2 |
| PONCA CITY FAA | 7201 | 2 | 50.4 | 29 | 3.8 | 81. | 11 | 17. | 29 | 427.5 | -124.5 | 3.5 | 3.5 | .021 | 30 | -2.03 | .02 | 2 |
| RED ROCK 1 NNE | 7505 | 2 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -1.72 | .00 | 30 |
| RENFROW | 7556 | 2 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .010 | 30 | -1.69 | .01 | 22 |
| WAYNOKA | 9404 | 2 | 47.9 | 30 | -.0 | 86. | 11 | 14. | 29 | 516.5 | 3.5 | 2.5 | 2.5 | .000 | 30 | -1.28 | .00 | 30 |
| WOODWARD | 9760 | 2 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |

## NOVEMBER 1989 SUMMARY FOR NORTHEAST DIVISION (CD3)

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BARNSDALL | 535 | 3 | 51.3 | 30 | ***** | 85. | 11 | 13. | 29 | 417.5 | ****** | 6.0 | ****** | .050 | 30 | -2.27 | .05 | 22 |
| BARTLESVILLE ZW | 548 | 3 | 50.5 | 30 | 2.2 | 86. | 11 | 13. | 29 | 440.0 | -61.0 | 5.0 | 5.0 | .060 | 30 | -2.19 | .06 | 22 |
| BIXBY | 782 | 3 | 50.2 | 30 | 1.5 | 84. | 12 | 15. | 30 | 451.5 | -37.5 | 7.5 | 7.5 | .040 | 30 | -2.69 | .04 | 22 |
| BURBANK | 1256 | 3 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| CHELSEA 4 S | 1717 | 3 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .560 | 30 | ***** | .52 | 23 |
| CLAREMORE | 1828 | 3 | 49.0 | 27 | ***** | 85. | 12 | 15. | 30 | 438.0 | ****** | 6.0 | ****** | .023 | 30 | -2.77 | .02 | 22 |
| CLEVELAND 5 WSW | 1902 | 3 | 53.8 | 28 | ***** | 85. | 11 | 17. | 29 | 324.0 | ****** | 11.5 | ****** | .010 | 28 | ***** | .01 | 22 |
| FORAKER | 3250 | 3 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .002 | 30 | -2.37 | .00 | 20 |
| HOLLOW | 4258 | 3 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -2.99 | .00 | 30 |
| HOMINY | 4289 | 3 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .020 | 30 | -2.04 | .02 | 22 |
| JAY TOWER | 4567 | 3 | 52.8 | 30 | ***** | 84. | 12 | 17. | 29 | 380.5 | ****** | 15.0 | ****** | .470 | 30 | ***** | .47 | 22 |
| KANSAS 1 ESE | 4672 | 3 | 51.0 | 27 | ***** | 80. | 11 | 18. | 29 | 381.5 | ****** | 3.0 | ****** | .250 | 30 | ***** | .25 | 22 |
| KEYSTONE DAM | 4812 | 3 | 50.3 | 23 | ***** | 83. | 13 | 16. | 29 | 351.0 | ****** | 12.5 | ****** | .003 | 23 | ***** | .00 | 27 |
| LENAPAH | 5118 | 3 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| MANNFORD 6 NW | 5522 | 3 | 53.1 | 30 | ***** | 86. | 11 | 13. | 29 | 374.5 | ****** | 18.5 | ****** | .001 | 30 | -2.20 | .00 | 20 |
| MARAMEC | 5540 | 3 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .091 | 30 | -1.92 | .09 | 21 |
| MIAMI | 5855 | 3 | 49.9 | 30 | 1.5 | 83. | 13 | 15. | 29 | 457.0 | -41.0 | 4.5 | 4.5 | .000 | 30 | -2.95 | .00 | 30 |
| NOWATA | 6485 | 3 | 51.1 | 27 | ***** | 84. | 11 | 14. | 29 | 382.5 | ****** | 7.0 | ****** | .400 | 30 | -2.15 | .40 | 21 |
| ONETA 1 WNW | 6713 | 3 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .150 | 30 | ***** | .15 | 22 |
| PAWHUSKA | 6935 | 3 | 50.0 | 30 | 2.0 | 84. | 12 | 14. | 29 | 452.5 | -57.5 | 4.0 | 4.0 | .031 | 30 | -2.00 | .03 | 22 |
| PAWHUSKA | 6937 | 3 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .001 | 30 | ***** | .00 | 22 |
| PAWNEE | 6940 | 3 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .030 | 30 | -1.85 | .03 | 22 |
| PRYOR 6 N | 7309 | 3 | 48.6 | 29 | .4 | 84. | 12 | 13. | 30 | 481.0 | -23.0 | 6.0 | 6.0 | .120 | 30 | -2.78 | .12 | 22 |
| QUAPAW | 7358 | 3 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .150 | 30 | -2.73 | .15 | 22 |
| RALSTON | 7390 | 3 | 51.2 | 30 | ***** | 88. | 11 | 13. | 29 | 418.0 | ****** | 3.5 | ****** | .001 | 30 | -1.95 | .00 | 22 |
| RAMONA 4 N | 7394 | 3 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| SKIATOOK | 8258 | 3 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -2.35 | .00 | 30 |
| SPAVINAW | 8380 | 3 | 55.2 | 28 | ***** | 81. | 12 | 20. | 29 | 289.5 | ****** | 14.5 | ****** | .220 | 28 | ***** | .22 | 22 |
| TULSA WSO APT | 8992 | 3 | 54.4 | 30 | 5.2 | 85. | 11 | 22. | 29 | 341.5 | -132.5 | 23.0 | 23.0 | .151 | 30 | -2.41 | .15 | 22 |
| UPPER SPAVINAW | 9101 | 3 | 55.6 | 25 | ***** | 82. | 14 | 20. | 30 | 263.5 | ****** | 29.0 | ****** | .001 | 27 | ***** | .00 | 5 |
| VINITA 2 N | 9203 | 3 | 51.6 | 30 | 3.7 | 82. | 11 | 12. | 29 | 422.0 | -91.0 | 19.5 | 19.5 | .200 | 30 | -2.76 | .20 | 22 |
| WAGONER | 9247 | 3 | 54.6 | 30 | 4.5 | 84. | 11 | 17. | 29 | 335.0 | -112.0 | 23.5 | 23.5 | .370 | 30 | -2.83 | .37 | 22 |
| WANN | 9298 | 3 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .001 | 30 | ***** | .00 | 21 |
| WYNONA | 9792 | 3 | 55.3 | 30 | ***** | 83. | 12 | 20. | 29 | 314.5 | ****** | 22.0 | ****** | .060 | 30 | ***** | .06 | 22 |

## NOVEMBER 1989 SUMMARY FOR WEST CENTRAL DIVISION (CD4)

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CANTON DAM | 1445 | 4 | 47.6 | 24 | ***** | 82. | 13 | 17. | 24 | 420.0 | ****** | 3.5 | ****** | .001 | 24 | ***** | .00 | 2 |
| CHEYENNE | 1738 | 4 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| CLINTON | 1909 | 4 | 51.8 | 30 | 3.3 | 83. | 10 | 17. | 29 | 395.5 | -99.5 | .0 | .0 | .000 | 30 | -1.47 | .00 | 30 |
| COLONY | 2039 | 4 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| CORDELL | 2125 | 4 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -1.39 | .00 | 30 |
| ELK CITY 1 E | 2849 | 4 | 51.1 | 23 | ***** | 80. | 11 | 21. | 28 | 319.5 | ****** | .0 | ****** | .000 | 23 | ***** | .00 | 30 |
| ERICK 4 E | 2944 | 4 | 50.1 | 30 | 1.7 | 83. | 20 | 19. | 29 | 447.5 | -50.5 | .5 | .5 | .000 | 30 | -.99 | .00 | 30 |
| GEARY | 3497 | 4 | 49.9 | 26 | ***** | 79. | 10 | 19. | 23 | 392.0 | ****** | .0 | ****** | .000 | 26 | ***** | .00 | 30 |
| HAMMON 1 NNE | 3871 | 4 | 48.2 | 30 | .7 | 88. | 11 | 15. | 23 | 509.5 | -15.5 | 5.5 | 5.5 | .000 | 30 | -1.39 | .00 | 30 |
| LEEDEY | 5090 | 4 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -1.33 | .00 | 30 |
| MACKIE 4 NNW | 5463 | 4 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| MORAVIA 2 NNE | 6035 | 4 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -1.05 | .00 | 30 |
| OKEENE | 6629 | 4 | 50.6 | 30 | 1.5 | 82. | 11 | 17. | 29 | 436.5 | -40.5 | 5.5 | 5.5 | .000 | 30 | -1.60 | .00 | 30 |
| RETROP | 7565 | 4 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| REYDON | 7579 | 4 | 50.3 | 30 | ***** | 84. | 11 | 17. | 23 | 441.5 | ****** | .0 | ****** | .000 | 30 | -.96 | .00 | 30 |
| SAYRE | 7952 | 4 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -1.09 | .00 | 30 |
| SWEETWATER 2 E | 8652 | 4 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| TALOGA | 8708 | 4 | 49.0 | 30 | 2.0 | 83. | 9 | 10. | 29 | 480.5 | -59.5 | .0 | .0 | .000 | 30 | -1.47 | .00 | 30 |
| THOMAS | 8815 | 4 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| VICI | 9172 | 4 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| WATONGA | 9364 | 4 | 50.2 | 30 | ***** | 81. | 10 | 19. | 29 | 446.5 | ****** | 2.5 | ****** | .001 | 30 | -1.42 | .00 | 2 |
| WEATHERFORD | 9422 | 4 | 50.4 | 30 | 1.5 | 82. | 11 | 19. | 29 | 438.5 | -44.5 | .5 | .5 | .000 | 30 | -1.36 | .00 | 30 |

# NOVEMBER 1989 SUMMARY FOR CENTRAL DIVISION (CD5)

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AMBER | 200 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .020 | 30 | ***** | .02 | 2 |
| ARCADIA | 288 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .080 | 30 | ***** | .08 | 2 |
| TINKER AFB | 325 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .080 | 29 | ***** | .08 | 2 |
| BLANCHARD 2 SSW | 830 | 5 | 53.2 | 30 | ***** | 81. | 10 | 20. | 29 | 361.0 | ****** | 6.0 | ****** | .001 | 30 | ***** | .00 | 3 |
| BRISTOW | 1144 | 5 | 54.0 | 30 | 4.3 | 84. | 11 | 15. | 29 | 345.0 | -119.0 | 13.5 | 8.5 | .060 | 30 | -2.27 | .04 | 2 |
| CHANDLER | 1684 | 5 | 53.5 | 30 | 3.1 | 84. | 11 | 19. | 29 | 356.0 | -87.0 | 12.5 | 12.5 | .000 | 30 | -2.09 | .00 | 30 |
| CHICKASHA EX ST | 1750 | 5 | 52.7 | 30 | 2.7 | 83. | 10 | 17. | 29 | 373.0 | -77.0 | 4.5 | 4.5 | .060 | 30 | -1.49 | .03 | 22 |
| COX CITY 1 E | 2196 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .002 | 30 | ***** | .00 | 22 |
| CRESCENT | 2242 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| CUSHING | 2318 | 5 | 51.2 | 30 | 2.3 | 83. | 11 | 22. | 29 | 421.5 | -61.5 | 7.5 | 7.5 | .000 | 30 | -2.01 | .00 | 30 |
| EL RENO 1 N | 2818 | 5 | 51.4 | 30 | 2.9 | 81. | 11 | 20. | 23 | 410.5 | -84.5 | 3.0 | 3.0 | .000 | 30 | -1.64 | .00 | 30 |
| GUTHRIE | 3821 | 5 | 52.6 | 30 | 3.3 | 83. | 12 | 19. | 29 | 380.5 | -90.5 | 7.5 | 7.5 | .170 | 30 | -1.63 | .10 | 22 |
| HENNESSEY 2 SE | 4055 | 5 | 49.0 | 30 | .5 | 79. | 10 | 17. | 29 | 482.5 | -12.5 | 1.5 | 1.5 | .060 | 30 | -1.57 | .06 | 2 |
| INGALLS | 4489 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .050 | 30 | ***** | .03 | 2 |
| KINGFISHER 2 SE | 4861 | 5 | 50.4 | 30 | 1.5 | 81. | 11 | 18. | 29 | 437.0 | -46.0 | .0 | .0 | .030 | 30 | -1.50 | .03 | 22 |
| KONAWA | 4915 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .090 | 30 | -2.05 | .09 | 22 |
| MARSHALL | 5589 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -1.63 | .00 | 30 |
| MEEKER 4 W | 5779 | 5 | 53.2 | 30 | 3.9 | 82. | 20 | 16. | 29 | 366.5 | -104.5 | 13.5 | 13.5 | .040 | 30 | -2.01 | .04 | 22 |
| MULHALL | 6110 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .070 | 30 | ***** | .07 | 2 |
| NORMAN 3 S | 6386 | 5 | 53.0 | 30 | ***** | 82. | 10 | 19. | 29 | 364.0 | ****** | 5.5 | ****** | .160 | 30 | -1.88 | .10 | 2 |
| OILTON 2 SE | 6616 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .180 | 30 | ***** | .18 | 14 |
| OKEMAH | 6638 | 5 | 53.8 | 30 | 3.1 | 82. | 11 | 23. | 29 | 346.0 | -83.0 | 11.5 | 11.5 | .010 | 30 | -2.43 | .01 | 2 |
| OKLAHOMA CTY WS | 6661 | 5 | 53.6 | 30 | 4.8 | 81. | 11 | 23. | 29 | 351.0 | -135.0 | 8.0 | 8.0 | .092 | 30 | -1.44 | .07 | 2 |
| PERKINS | 7003 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -2.07 | .00 | 30 |
| PIEDMONT | 7068 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .090 | 30 | ***** | .09 | 2 |
| PRAGUE | 7264 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .050 | 30 | -2.16 | .05 | 2 |
| PURCELL 5 SW | 7327 | 5 | 52.3 | 30 | 2.8 | 82. | 10 | 16. | 29 | 384.5 | -82.5 | 5.0 | 5.0 | .300 | 30 | -1.76 | .15 | 22 |
| SEMINOLE | 8042 | 5 | 54.6 | 30 | 2.9 | 81. | 11 | 20. | 29 | 324.0 | -80.0 | 12.5 | 7.5 | .001 | 30 | -2.52 | .00 | 2 |
| SHAWNEE | 8110 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .050 | 30 | -2.29 | .03 | 2 |
| STELLA | 8479 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .060 | 30 | ***** | .06 | 22 |
| STILLWATER 2 W | 8501 | 5 | 50.0 | 30 | 1.1 | 83. | 11 | 14. | 29 | 449.5 | -33.5 | .0 | .0 | .001 | 30 | -1.78 | .00 | 2 |
| STROUD 1 N | 8563 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .081 | 30 | ***** | .08 | 2 |
| TECUMSEH | 8751 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| TROUSDALE | 8960 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .590 | 30 | ***** | .49 | 3 |
| UNION CITY 1 SE | 9086 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -2.06 | .00 | 30 |
| WELTY 1 SSE | 9479 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| WEWOKA | 9575 | 5 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .400 | 30 | -1.83 | .40 | 22 |

## NOVEMBER 1989 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 | ****** | ****** | ****** | ****** | .901 | 30 | ***** | .55 | 22 |
| BEGGS | 631 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| BOYNTON | 1027 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .380 | 30 | ***** | .38 | 22 |
| CALVIN | 1391 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .642 | 30 | -2.05 | .64 | 22 |
| CHECOTAH | 1711 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .560 | 30 | -2.28 | .54 | 22 |
| CLAYTON 11 WNW | 1858 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .400 | 30 | ***** | .40 | 22 |
| DEWAR 2 NE | 2485 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .060 | 30 | -2.63 | .06 | 20 |
| DUSTIN | 2690 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .650 | 30 | ***** | .65 | 22 |
| EUFAULA | 2993 | 6 | 54.6 | 30 | ***** | 82. | 10 | 24. | 29 | 335.5 | ****** | 24.0 | ****** | 1.011 | 30 | -1.95 | .75 | 22 |
| HANNA | 3884 | 6 | 53.5 | 30 | ***** | 85. | 10 | 18. | 29 | 362.0 | ****** | 16.5 | ****** | .550 | 30 | -2.39 | .41 | 22 |
| HARTSHORNE | 3946 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .460 | 30 | ***** | .32 | 22 |
| HASKELL | 3956 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .150 | 30 | -2.74 | .15 | 22 |
| HOLDENVILLE | 4235 | 6 | 53.8 | 30 | 2.4 | 83. | 10 | 19. | 29 | 348.5 | -64.5 | 13.5 | 13.5 | .400 | 30 | -2.00 | .40 | 22 |
| LAKE EUFAULA | 4975 | 6 | 54.1 | 30 | ***** | 86. | 7 | 24. | 23 | 349.5 | ****** | 23.5 | ****** | .030 | 29 | ***** | .03 | 24 |
| LYONS 2 N | 5437 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .460 | 30 | -2.49 | .46 | 22 |
| MARBLE CITY | 5546 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .252 | 30 | ***** | .25 | 22 |
| MCALESTER FAA | 5664 | 6 | 55.5 | 30 | 4.8 | 84. | 6 | 21. | 29 | 310.5 | -122.5 | 27.0 | 20.0 | .460 | 30 | -2.61 | .34 | 23 |
| MCCURTAIN 1 SE | 5693 | 6 | 56.6 | 30 | ***** | 85. | 11 | 19. | 17 | 298.0 | ****** | 46.0 | ****** | .400 | 30 | -3.18 | .30 | 23 |
| MUSKOGEE | 6130 | 6 | 54.4 | 30 | 4.3 | 84. | 11 | 19. | 29 | 335.5 | -111.5 | 17.0 | 17.0 | .210 | 30 | -2.77 | .21 | 22 |
| OKMULGEE W W | 6670 | 6 | 51.6 | 30 | 1.0 | 85. | 10 | 14. | 30 | 409.5 | -22.5 | 7.5 | 7.5 | .100 | 30 | -2.53 | .10 | 22 |
| OKTAHA 2 NE | 6678 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .250 | 30 | ***** | .25 | 22 |
| QUINTON | 7372 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .491 | 30 | -2.75 | .49 | 23 |
| SALLISAW 2 NE | 7862 | 6 | 51.7 | 30 | 1.0 | 86. | 11 | 16. | 29 | 408.5 | -25.5 | 10.0 | 5.0 | .870 | 30 | -2.54 | .87 | 23 |
| SCIPIO | 7979 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .620 | 30 | ***** | .47 | 22 |
| SCRAPER | 7993 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .380 | 30 | ***** | .38 | 22 |
| SHORT | 8170 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .630 | 30 | ***** | .63 | 22 |
| STILWELL 1 NE | 8506 | 6 | 52.5 | 30 | ***** | 82. | 11 | 17. | 29 | 391.0 | ****** | 16.0 | ****** | .681 | 30 | -2.57 | .65 | 22 |
| TAHLEQUAH | 8677 | 6 | 53.7 | 30 | 7.4 | 84. | 11 | 15. | 29 | 355.0 | -121.0 | 14.5 | 9.5 | .620 | 30 | -2.58 | .62 | 22 |
| WEBBERS FALLS | 9445 | 6 | 51.3 | 30 | 2.0 | 85. | 7 | 17. | 29 | 416.0 | -55.0 | 6.5 | 6.5 | .600 | 30 | -2.39 | .60 | 22 |
| WESTVILLE | 9523 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .430 | 30 | ***** | .43 | 22 |
| WETUMKA 3 NE | 9571 | 6 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .472 | 30 | -2.30 | .47 | 22 |

## NOVEMBER 1989 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 | 53.3 | 30 | 2.1 | 83. | 6 | 17. | 29 | 352.5 | -61.5 | .5 | .5 | .000 | 30 | -1.02 | .00 | 30 |
| ALTUS DAM | 184 | 7 | 51.2 | 30 | ***** | 83. | 12 | 19. | 30 | 419.5 | ****** | 4.0 | ****** | .000 | 30 | -1.02 | .00 | 30 |
| ANADARKO | 224 | 7 | 52.6 | 21 | ***** | 81. | 10 | 11. | 29 | 267.5 | ****** | 7.5 | ****** | .000 | 30 | -1.58 | .00 | 30 |
| APACHE | 260 | 7 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| ALTUS AFB | 447 | 7 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .001 | 29 | ***** | .00 | 23 |
| CARNEGIE 2 ENE | 1504 | 7 | 51.1 | 30 | 1.6 | 82. | 11 | 15. | 29 | 421.0 | -44.0 | 3.0 | 3.0 | .000 | 30 | -1.32 | .00 | 30 |
| CHATTANOOGA | 1706 | 7 | 52.8 | 30 | 1.9 | 83. | 6 | 19. | 29 | 369.5 | -53.5 | 3.5 | 3.5 | .130 | 30 | -1.24 | .13 | 22 |
| DUNCAN 12 W | 2668 | 7 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .001 | 30 | ***** | .00 | 23 |
| FREDERICK | 3353 | 7 | 51.8 | 30 | -.5 | 82. | 7 | 26. | 27 | 399.5 | 10.5 | 2.0 | -3.0 | .001 | 30 | -1.41 | .00 | 21 |
| GRANDFIELD 4 NW | 3709 | 7 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -1.55 | .00 | 30 |
| HOBART FAA APT | 4204 | 7 | 51.8 | 30 | 3.3 | 81. | 10 | 19. | 29 | 397.0 | -98.0 | .0 | .0 | .000 | 30 | -1.08 | .00 | 30 |
| HOLLIS | 4249 | 7 | 51.8 | 30 | 1.4 | 85. | 14 | 17. | 29 | 397.5 | -40.5 | 1.0 | 1.0 | .000 | 30 | -.88 | .00 | 30 |
| LAWTON | 5063 | 7 | 50.9 | 30 | -.0 | 83. | 6 | 22. | 28 | 423.5 | -4.5 | .0 | .0 | .030 | 30 | -1.72 | .03 | 21 |
| FORT SILL | 5068 | 7 | 53.9 | 30 | ***** | 83. | 6 | 25. | 29 | 336.0 | ****** | 4.0 | ****** | .002 | 30 | -1.75 | .00 | 22 |
| LOOKEBA 2 ENE | 5329 | 7 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| MANGUM RES STA | 5509 | 7 | 52.9 | 30 | 2.7 | 84. | 6 | 16. | 29 | 362.0 | -82.0 | .0 | .0 | .000 | 30 | -.91 | .00 | 30 |
| ROOSEVELT | 7727 | 7 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -1.24 | .00 | 30 |
| SEDAN | 8016 | 7 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| VINSON 3 WNW | 9212 | 7 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | -1.02 | .00 | 30 |
| WALTERS | 9278 | 7 | 54.8 | 30 | 3.1 | 84. | 6 | 20. | 29 | 316.0 | -99.0 | 10.0 | 4.0 | .120 | 30 | -1.71 | .12 | 22 |
| WICHITA MT WLR | 9629 | 7 | 49.8 | 30 | .3 | 80. | 21 | 18. | 30 | 457.5 | -7.5 | .0 | .0 | .000 | 30 | -1.54 | .00 | 30 |
| WILLOW | 9668 | 7 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |

## NOVEMBER 1989 SUMMARY FOR SOUTH CENTRAL DIVISION (CD8)

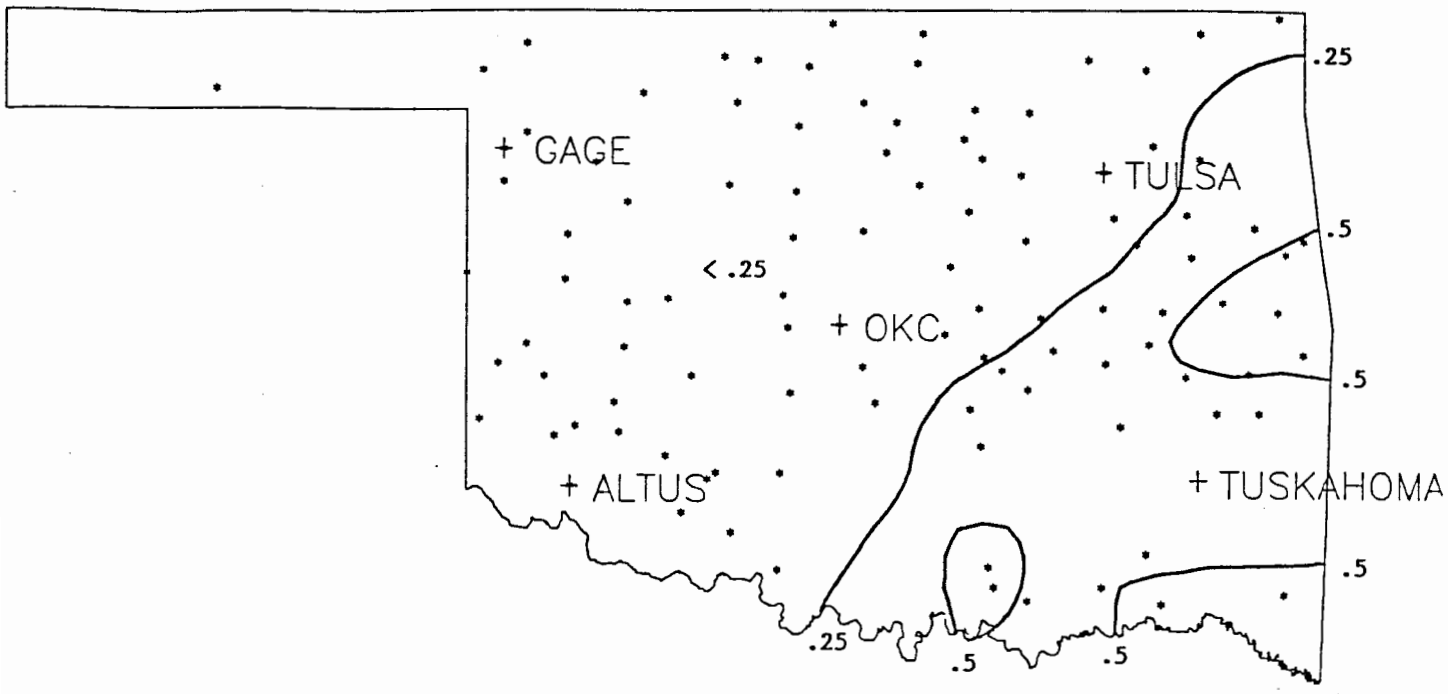
| NAME | ID | CD | MEAN TEMP | DEV NUM OBS | DEV FROM NORM | MAX TEMP | MAX DAY | MIN TEMP | MIN DAY | HEAT DEG DAY | DEV FROM NORM | COOL DEG DAY | DEV FROM NORM | TOT PPT | NUM OBS | DEV FROM NORM | MAX 24-HR | MAX DAY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADA | 17 | 8 | 54.3 | 30 | 2.5 | 82. | 10 | 21. | 29 | 324.0 | -80.0 | 3.5 | -4.5 | .310 | 30 | -2.24 | .31 | 22 |
| ALLEN | 147 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .000 | 30 | ***** | .00 | 30 |
| ATOKA DAM | 394 | 8 | 53.7 | 30 | ***** | 85. | 7 | 17. | 17 | 358.0 | ****** | 19.5 | ****** | .300 | 30 | ***** | .30 | 22 |
| BOKCHITO | 917 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .490 | 30 | ***** | .49 | 24 |
| CANEY | 1437 | 8 | 55.5 | 30 | ***** | 85. | 6 | 28. | 29 | 305.5 | ****** | 21.5 | ****** | .350 | 30 | ***** | .35 | 22 |
| CENTRAHOMA | 1648 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .750 | 30 | ***** | .75 | 22 |
| CHICKASAW NRA | 1745 | 8 | 52.0 | 30 | ***** | 84. | 7 | 19. | 29 | 401.5 | ****** | 12.5 | ****** | .270 | 30 | ***** | .25 | 22 |
| COMANCHE | 2054 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .002 | 30 | ***** | .00 | 23 |
| DAISY 4 ENE | 2354 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .440 | 30 | -2.92 | .24 | 23 |
| DUNCAN | 2660 | 8 | 51.8 | 30 | -.2 | 82. | 7 | 22. | 29 | 400.5 | 3.5 | 3.5 | -3.5 | .110 | 30 | -1.79 | .09 | 22 |
| DURANT USDA | 2678 | 8 | 53.6 | 30 | ***** | 85. | 7 | 23. | 17 | 356.0 | ****** | 14.0 | ****** | .150 | 30 | -2.65 | .15 | 22 |
| ELMORE CITY | 2872 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .250 | 30 | ***** | .15 | 2 |
| FARRIS 3 WNW | 3083 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .100 | 30 | ***** | .09 | 22 |
| GRADY | 3688 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .360 | 30 | ***** | .20 | 23 |
| HEALDTON | 4001 | 8 | 54.1 | 25 | ***** | 86. | 6 | 22. | 29 | 285.0 | ****** | 11.5 | ****** | .000 | 25 | ***** | .00 | 30 |
| HENNEPIN | 4052 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .190 | 30 | ***** | .19 | 22 |
| KETCHUM RANCH | 4780 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .050 | 30 | ***** | .05 | 22 |
| KINGSTON | 4865 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .570 | 30 | -1.96 | .48 | 22 |
| LEHIGH | 5108 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .500 | 30 | ***** | .50 | 22 |
| LINDSAY 2 W | 5216 | 8 | 51.9 | 29 | ***** | 79. | 10 | 17. | 29 | 384.0 | ****** | 5.5 | ****** | .070 | 29 | ***** | .07 | 22 |
| LOCO 6 SE | 5247 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .110 | 30 | ***** | .08 | 22 |
| MADILL | 5468 | 8 | 55.9 | 30 | 2.9 | 85. | 6 | 19. | 3 | 303.0 | -63.0 | 31.0 | 25.0 | 1.020 | 30 | -1.44 | 1.02 | 22 |
| MARIETTA | 5563 | 8 | 56.2 | 30 | 3.3 | 87. | 6 | 26. | 23 | 291.0 | -80.0 | 27.0 | 19.0 | .520 | 30 | -1.94 | .34 | 22 |
| MARLOW 1 WSW | 5581 | 8 | 54.2 | 30 | ***** | 85. | 21 | 18. | 29 | 330.5 | ****** | 6.5 | ****** | .050 | 30 | -1.90 | .02 | 23 |
| MCGEE CREEK DAM | 5713 | 8 | 54.5 | 30 | ***** | 86. | 7 | 25. | 17 | 338.0 | ****** | 23.5 | ****** | .230 | 30 | ***** | .13 | 22 |
| OSWALT | 6787 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | 1.100 | 30 | ***** | 1.10 | 23 |
| PAULS VALLEY | 6926 | 8 | 53.5 | 30 | 2.1 | 83. | 10 | 17. | 29 | 354.0 | -59.0 | 10.0 | 10.0 | .130 | 30 | -2.04 | .07 | 23 |
| PONTOTOC | 7214 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | 1.800 | 30 | -1.09 | 1.80 | 22 |
| TISHOMINGO NWLR | 8884 | 8 | 54.6 | 28 | ***** | 85. | 5 | 24. | 29 | 314.5 | ****** | 23.5 | ****** | .610 | 30 | -1.88 | .61 | 22 |
| TUSSY | 9032 | 8 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .050 | 30 | ***** | .05 | 22 |
| WAURIKA | 9395 | 8 | 55.0 | 30 | 2.4 | 87. | 7 | 23. | 18 | 312.0 | -67.0 | 12.0 | 5.0 | .240 | 30 | -1.69 | .24 | 23 |
| WAURIKA DAM | 9399 | 8 | 53.7 | 27 | ***** | 85. | 7 | 29. | 29 | 310.0 | ****** | 6.0 | ****** | .010 | 27 | ***** | .01 | 22 |

## NOVEMBER 1989 SUMMARY FOR SOUTHEAST DIVISION (CD9)

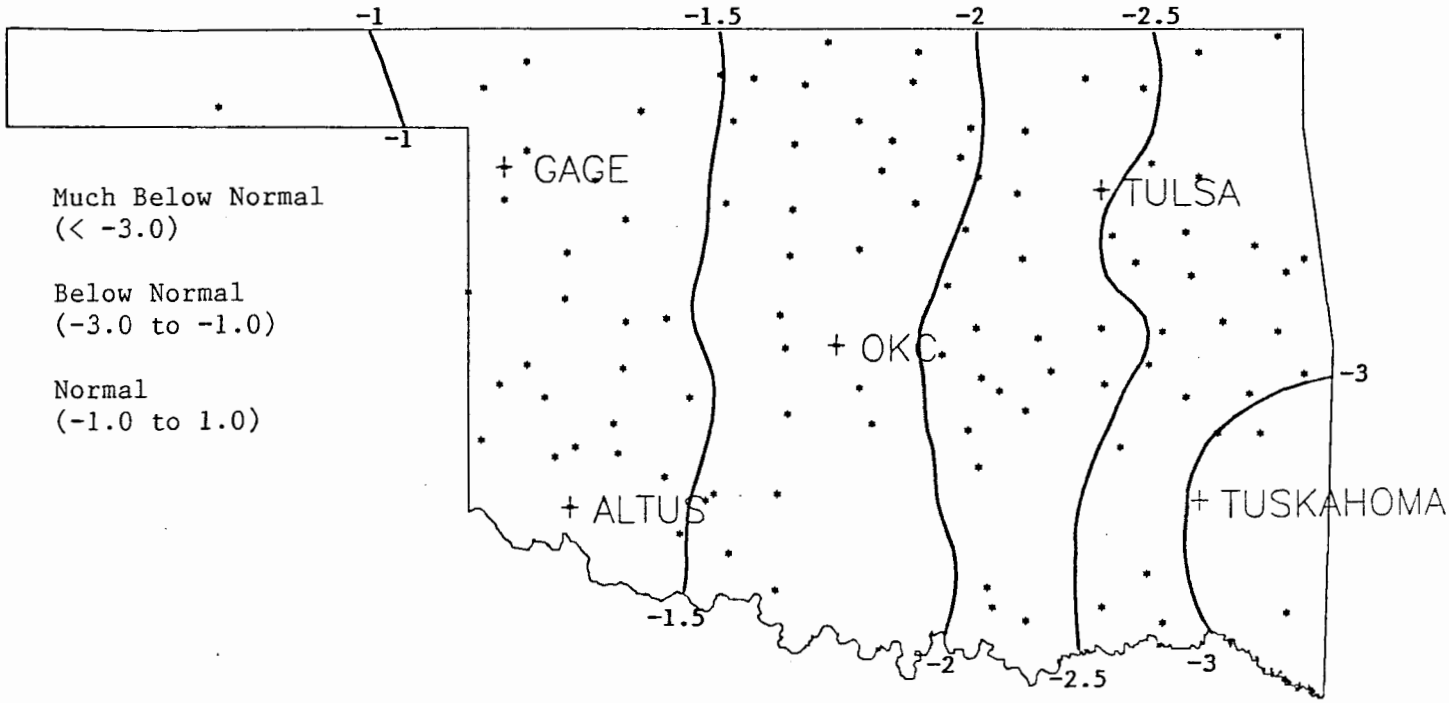
| NAME | ID | CD | MEAN TEMP | DEV NUM OBS | DEV FROM NORM | MAX TEMP | MAX DAY | MIN TEMP | MIN DAY | HEAT DEG DAY | DEV FROM NORM | COOL DEG DAY | DEV FROM NORM | TOT PPT | NUM OBS | DEV FROM NORM | MAX 24-HR | MAX DAY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ANTLERS | 256 | 9 | 54.9 | 30 | 3.1 | 86. | 6 | 21. | 17 | 329.5 | -70.5 | 26.5 | 26.5 | .000 | 30 | -3.18 | .00 | 30 |
| BATTIEST 1 SSW | 567 | 9 | 54.2 | 30 | ***** | 84. | 6 | 19. | 17 | 350.5 | ****** | 25.5 | ****** | .421 | 30 | ***** | .42 | 22 |
| BEAR MT TWR | 584 | 9 | 55.9 | 26 | ***** | 89. | 5 | 21. | 17 | 267.0 | ****** | 31.5 | ****** | .530 | 27 | ***** | .26 | 23 |
| BENGAL | 670 | 9 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .310 | 30 | ***** | .28 | 23 |
| BOSWELL 4 NNW | 980 | 9 | 58.9 | 30 | ***** | 86. | 6 | 26. | 17 | 237.0 | ****** | 53.0 | ****** | .302 | 30 | -2.72 | .25 | 22 |
| BROKEN BOW 1 N | 1162 | 9 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .620 | 30 | -3.40 | .59 | 22 |
| BROKEN BOW DAM | 1168 | 9 | 52.5 | 29 | ***** | 87. | 6 | 23. | 17 | 382.0 | ****** | 18.5 | ****** | .730 | 30 | ***** | .56 | 22 |
| CARNASAW TWR | 1499 | 9 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .560 | 30 | -3.72 | .37 | 23 |
| CARTER TWR | 1544 | 9 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .490 | 30 | -3.33 | .32 | 23 |
| FANSHAWE | 3065 | 9 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .400 | 30 | -3.55 | .30 | 21 |
| FLAGPOLE TWR | 3169 | 9 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .060 | 30 | ***** | .06 | 22 |
| HEAVENER 1 SE | 4008 | 9 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .400 | 30 | -3.29 | .40 | 16 |
| HEE MT TWR | 4017 | 9 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .640 | 30 | ***** | .49 | 23 |
| HUGO | 4384 | 9 | 56.7 | 30 | 3.3 | 85. | 6 | 28. | 17 | 291.0 | -66.0 | 43.0 | 34.0 | .531 | 30 | -2.73 | .30 | 21 |
| IDABEL | 4451 | 9 | 54.9 | 30 | 2.3 | 85. | 7 | 26. | 24 | 338.0 | -42.0 | 34.5 | 26.5 | .560 | 30 | -3.27 | .44 | 23 |
| JADIE TOWER | 4560 | 9 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .920 | 30 | ***** | .61 | 22 |
| POTEAU W W | 7254 | 9 | 54.6 | 17 | ***** | 86. | 6 | 17. | 28 | 194.0 | ****** | 18.0 | ****** | .830 | 30 | ***** | .72 | 21 |
| SMITHVILLE 1 W | 8285 | 9 | 50.6 | 30 | ***** | 84. | 6 | 14. | 17 | 448.0 | ****** | 16.5 | ****** | .202 | 30 | ***** | .20 | 22 |
| SOBAL TOWER | 8305 | 9 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .530 | 30 | -2.88 | .34 | 23 |
| SPIRO | 8416 | 9 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .611 | 30 | -3.24 | .38 | 23 |
| TUSKAHOMA | 9023 | 9 | 55.0 | 30 | ***** | 86. | 6 | 17. | 17 | 330.5 | ****** | 29.0 | ****** | .280 | 30 | ***** | .23 | 23 |
| VALLIANT 3 W | 9118 | 9 | ***** | 0 | ***** | **** | 0 | **** | 0 | ****** | ****** | ****** | ****** | .470 | 30 | -3.13 | .32 | 23 |
| WILBURTON 9 ENE | 9634 | 9 | 53.2 | 30 | 2.3 | 84. | 10 | 17. | 17 | 372.0 | -56.0 | 18.0 | 18.0 | .000 | 30 | -3.58 | .00 | 30 |

## NOVEMBER 1989 CLIMATE DIVISION SUMMARY

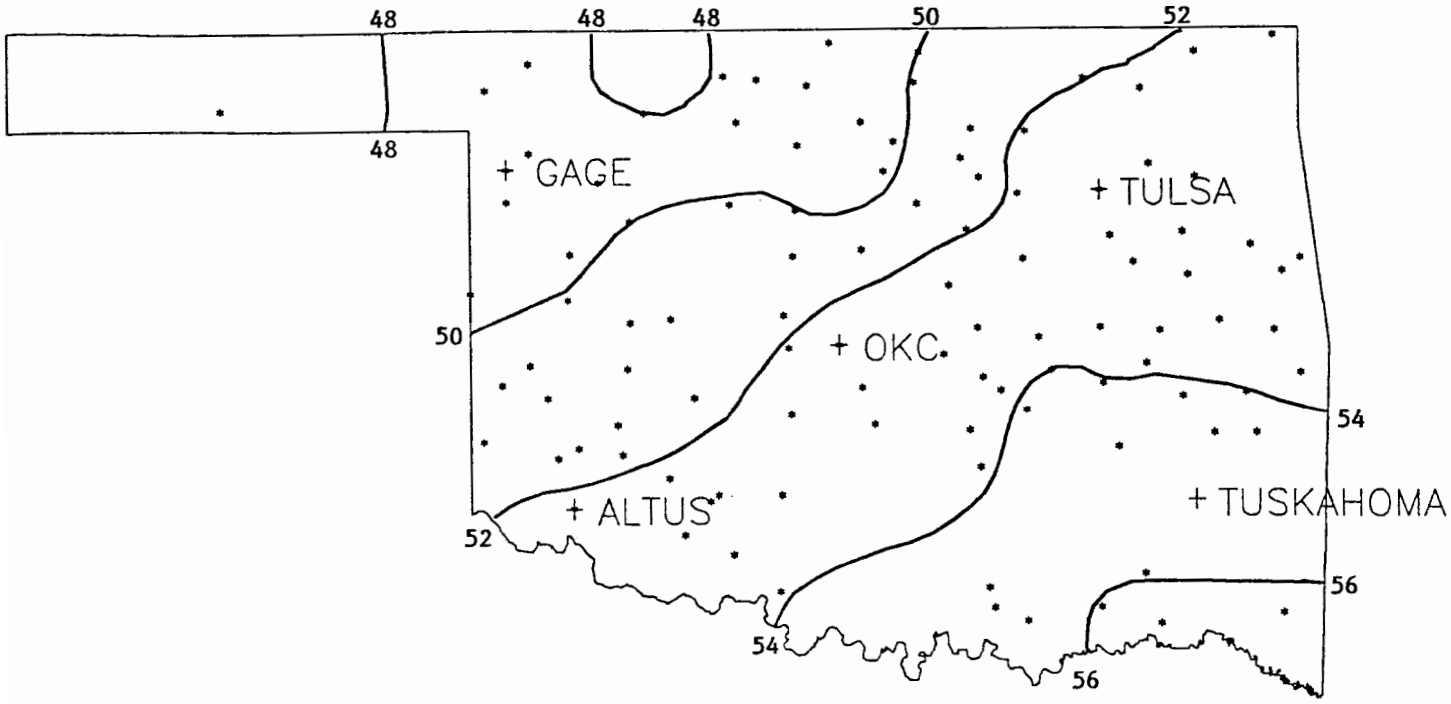
| CLIMATE DIV | MEAN TEMP | NUM STA | DEV FROM NORM | MAX TEMP | DAY | MIN TEMP | DAY | HEAT DEGREE DAYS | DEV FROM NORM | COOL DEGREE DAYS | DEV FROM NORM | TOT PPT | NUM STA | DEV FROM NORM | MAX 24-HR | DAY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 46.6 | 10 | 1.7 | 85.0 | 11 | 11.0 | 16 | 549.0 | -55.5 | .3 | .3 | .00 | 14 | -.84 | .00 | 2 |
| 2 | 48.3 | 14 | .6 | 87.0 | 12 | 12.0 | 29 | 502.9 | -15.8 | 2.5 | 2.5 | .01 | 23 | -1.64 | .06 | 2 |
| 3 | 51.8 | 13 | 3.2 | 88.0 | 11 | 12.0 | 29 | 406.6 | -86.0 | 12.2 | 12.2 | .11 | 30 | -2.42 | .52 | 23 |
| 4 | 50.1 | 8 | 1.8 | 88.0 | 11 | 10.0 | 29 | 449.5 | -50.8 | 1.8 | 1.8 | .00 | 19 | -1.32 | .00 | 2 |
| 5 | 52.4 | 16 | 2.9 | 84.0 | 11 | 14.0 | 29 | 384.5 | -81.5 | 7.0 | 6.3 | .08 | 36 | -1.91 | .49 | 3 |
| 6 | 53.6 | 12 | 3.7 | 86.0 | 11 | 14.0 | 30 | 360.0 | -83.8 | 18.5 | 16.1 | .47 | 30 | -2.50 | .87 | 23 |
| 7 | 52.2 | 12 | 1.7 | 85.0 | 14 | 11.0 | 29 | 387.6 | -51.9 | 2.3 | 1.3 | .01 | 21 | -1.32 | .13 | 22 |
| 8 | 54.0 | 13 | 1.7 | 87.0 | 7 | 17.0 | 29 | 342.9 | -45.4 | 14.6 | 8.6 | .38 | 29 | -2.02 | 1.80 | 22 |
| 9 | 54.5 | 9 | 2.4 | 89.0 | 5 | 14.0 | 17 | 342.1 | -49.2 | 29.4 | 25.1 | .45 | 22 | -3.21 | .72 | 21 |



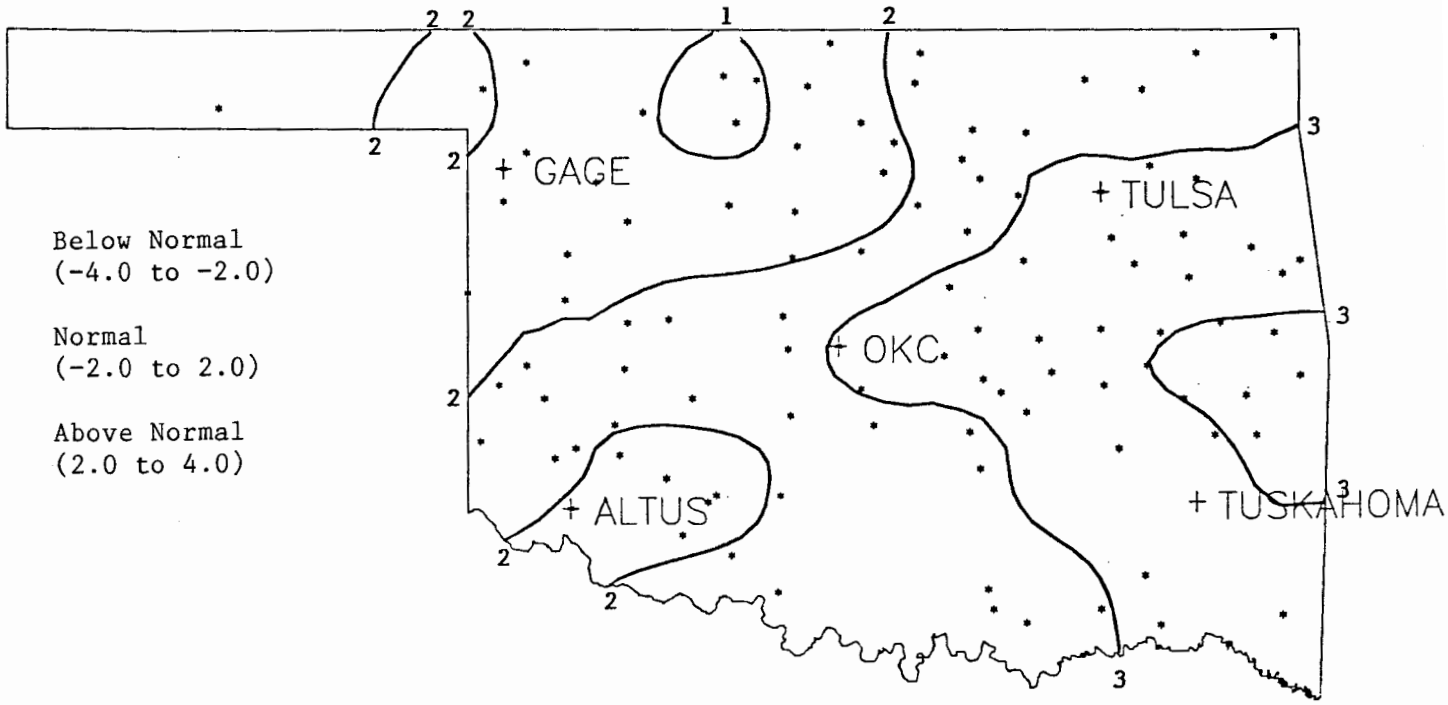

**NOVEMBER 1989 TOTAL PRECIPITATION**
**(Inches)**



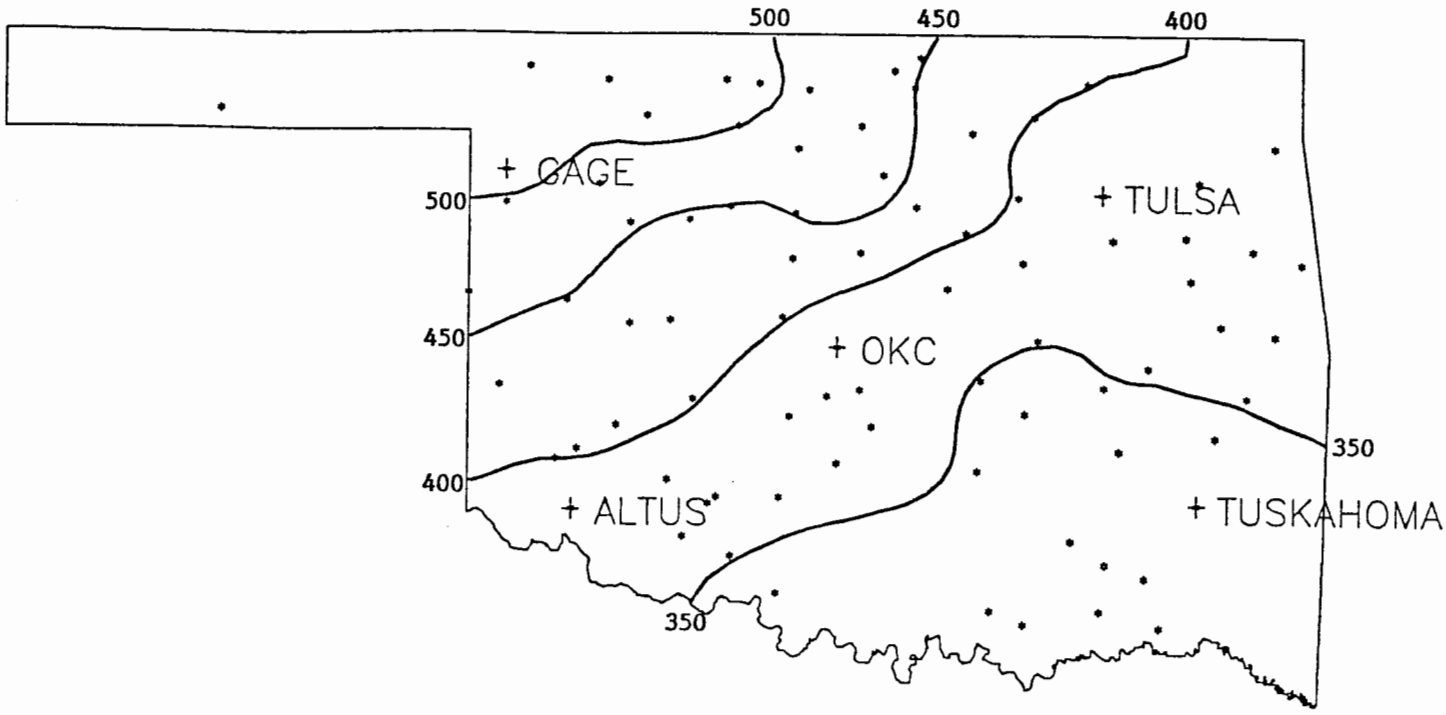

**NOVEMBER 1989 DEVIATION FROM NORMAL PRECIPITATION**
**(Inches)**



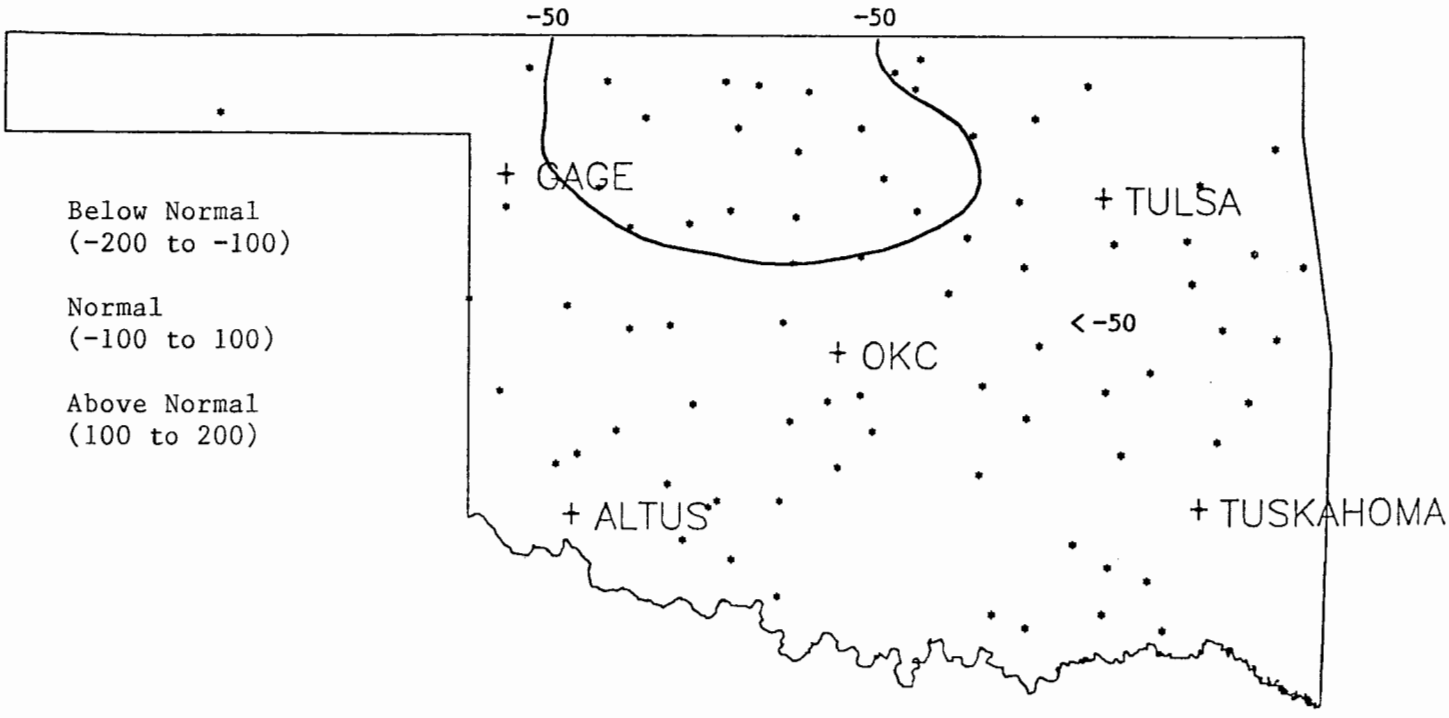

**NOVEMBER 1989 AVERAGE MONTHLY TEMPERATURES**
**(Degrees F)**




**NOVEMBER 1989 DEVIATION FROM NORMAL TEMPERATURES**
**(Degrees F)**

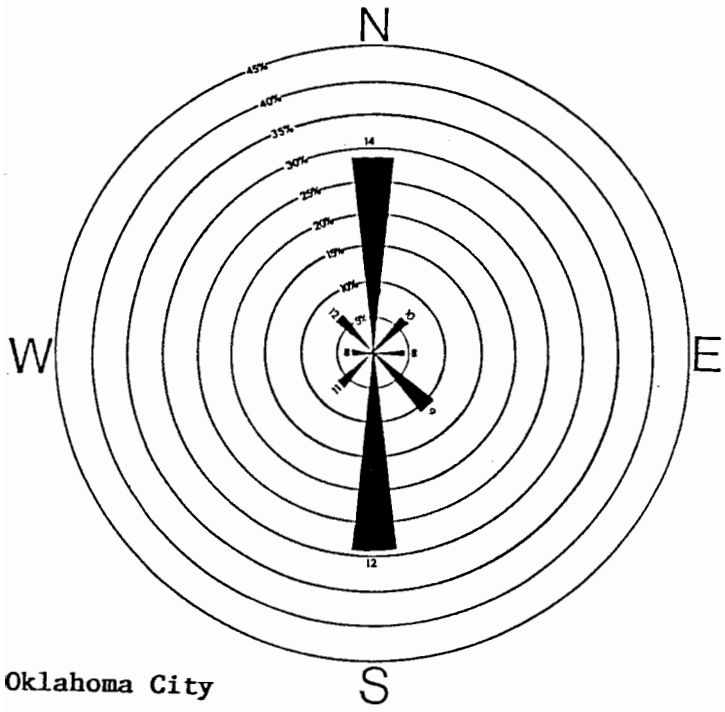



NOVEMBER 1989 HEATING DEGREE DAYS

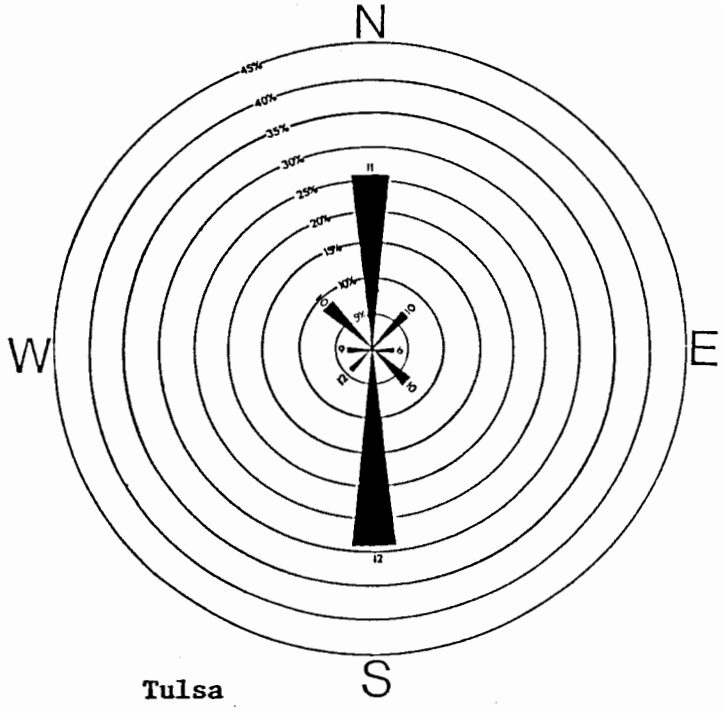



NOVEMBER 1989 DEVIATION FROM NORMAL HEATING DEGREE DAYS

January 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 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

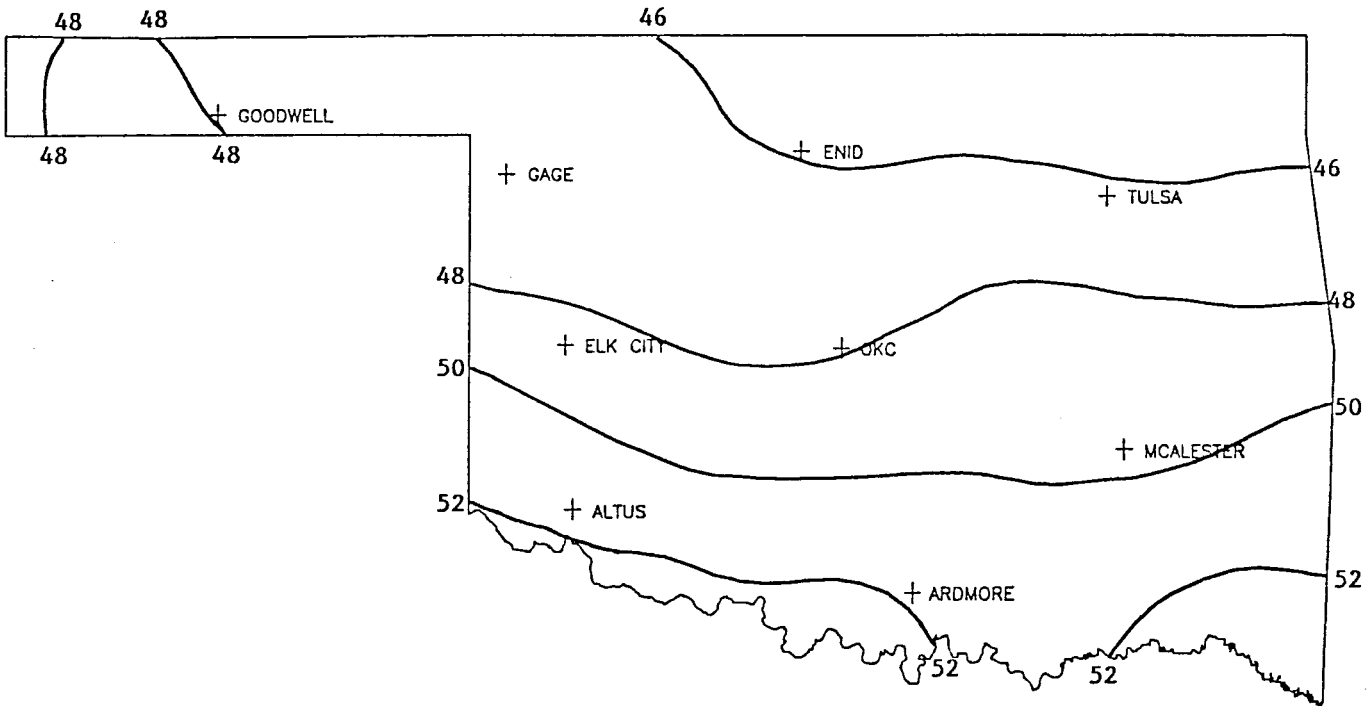
## JANUARY 1990 SUNRISE AND SUNSET

### Oklahoma City

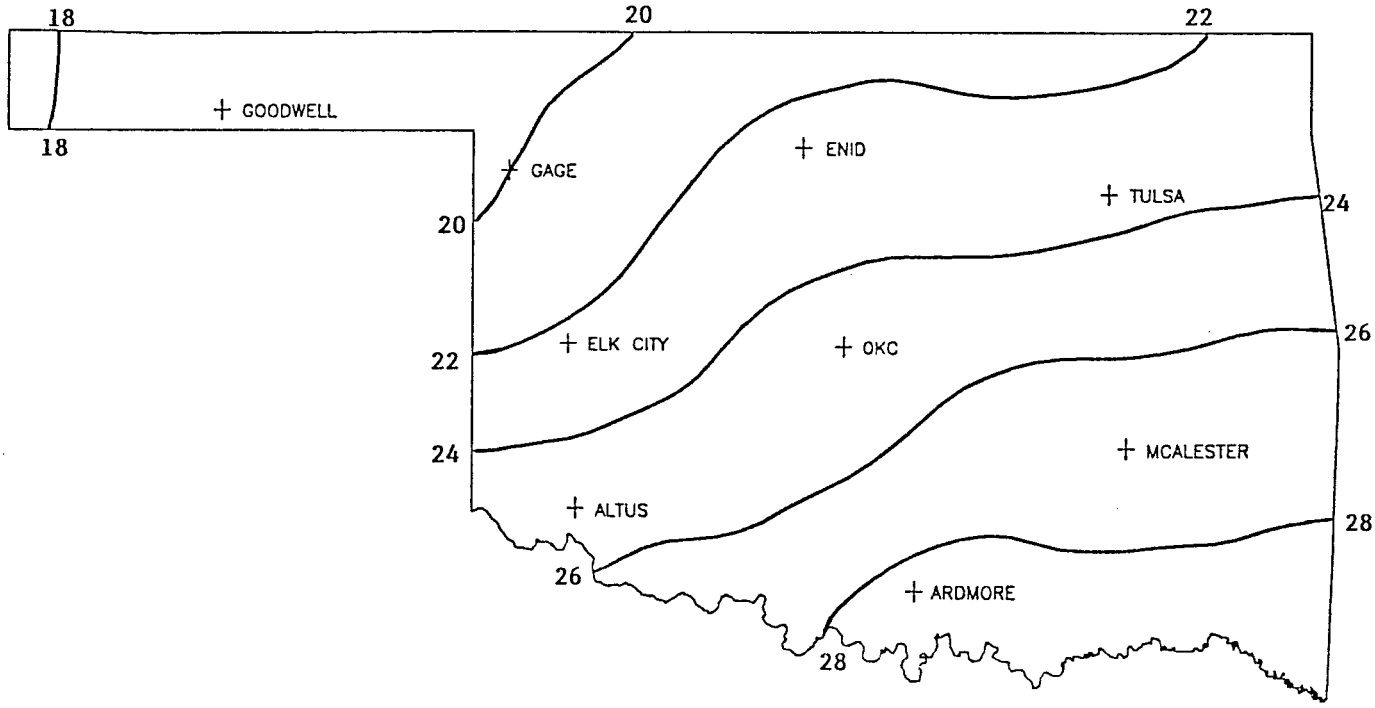
| DATE | SUNRISE | SUNSET | DAYLIGHT |
|---|---|---|---|
| 900101 | 7:38AM | 5:30PM LT | 9:53 |
| 900102 | 7:38AM | 5:31PM LT | 9:53 |
| 900103 | 7:38AM | 5:31PM LT | 9:54 |
| 900104 | 7:38AM | 5:32PM LT | 9:54 |
| 900105 | 7:38AM | 5:33PM LT | 9:55 |
| 900106 | 7:38AM | 5:34PM LT | 9:56 |
| 900107 | 7:38AM | 5:35PM LT | 9:56 |
| 900108 | 7:38AM | 5:35PM LT | 9:57 |
| 900109 | 7:38AM | 5:36PM LT | 9:58 |
| 900110 | 7:38AM | 5:37PM LT | 9:59 |
| 900111 | 7:38AM | 5:38PM LT | 9:60 |
| 900112 | 7:38AM | 5:39PM LT | 10: 1 |
| 900113 | 7:38AM | 5:40PM LT | 10: 2 |
| 900114 | 7:38AM | 5:40PM LT | 10: 3 |
| 900115 | 7:38AM | 5:41PM LT | 10: 4 |
| 900116 | 7:37AM | 5:42PM LT | 10: 5 |
| 900117 | 7:37AM | 5:43PM LT | 10: 6 |
| 900118 | 7:37AM | 5:44PM LT | 10: 7 |
| 900119 | 7:37AM | 5:45PM LT | 10: 8 |
| 900120 | 7:36AM | 5:46PM LT | 10:10 |
| 900121 | 7:36AM | 5:47PM LT | 10:11 |
| 900122 | 7:35AM | 5:48PM LT | 10:12 |
| 900123 | 7:35AM | 5:49PM LT | 10:14 |
| 900124 | 7:35AM | 5:50PM LT | 10:15 |
| 900125 | 7:34AM | 5:51PM LT | 10:17 |
| 900126 | 7:34AM | 5:52PM LT | 10:18 |
| 900127 | 7:33AM | 5:53PM LT | 10:20 |
| 900128 | 7:32AM | 5:54PM LT | 10:21 |
| 900129 | 7:32AM | 5:55PM LT | 10:23 |
| 900130 | 7:31AM | 5:56PM LT | 10:24 |
| 900131 | 7:31AM | 5:57PM LT | 10:26 |

### Tulsa

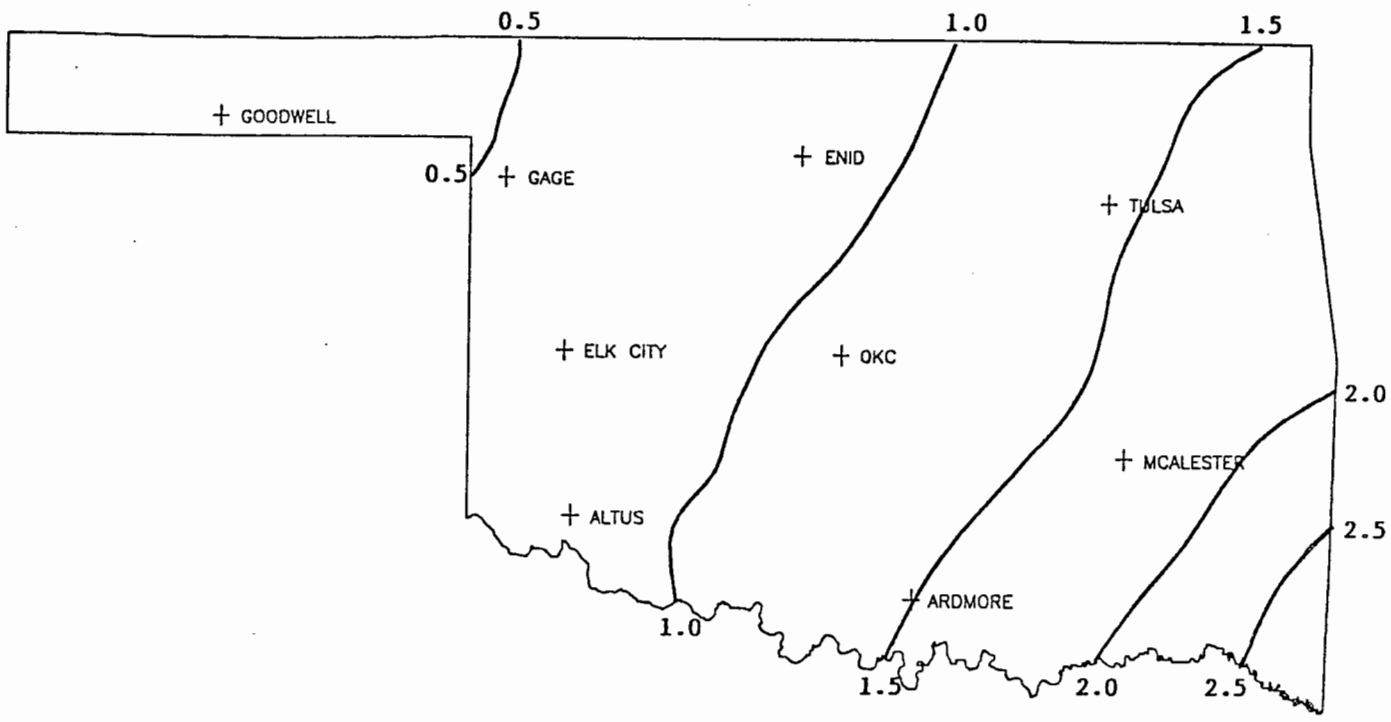
| DATE | SUNRISE | SUNSET | DAYLIGHT |
|---|---|---|---|
| 900101 | 7:33AM | 5:21PM LT | 9:49 |
| 900102 | 7:33AM | 5:22PM LT | 9:49 |
| 900103 | 7:33AM | 5:23PM LT | 9:50 |
| 900104 | 7:33AM | 5:23PM LT | 9:50 |
| 900105 | 7:33AM | 5:24PM LT | 9:51 |
| 900106 | 7:33AM | 5:25PM LT | 9:52 |
| 900107 | 7:33AM | 5:26PM LT | 9:52 |
| 900108 | 7:33AM | 5:27PM LT | 9:53 |
| 900109 | 7:33AM | 5:27PM LT | 9:54 |
| 900110 | 7:33AM | 5:28PM LT | 9:55 |
| 900111 | 7:33AM | 5:29PM LT | 9:56 |
| 900112 | 7:33AM | 5:30PM LT | 9:57 |
| 900113 | 7:33AM | 5:31PM LT | 9:58 |
| 900114 | 7:33AM | 5:32PM LT | 9:59 |
| 900115 | 7:33AM | 5:33PM LT | 10: 0 |
| 900116 | 7:32AM | 5:34PM LT | 10: 1 |
| 900117 | 7:32AM | 5:35PM LT | 10: 2 |
| 900118 | 7:32AM | 5:35PM LT | 10: 4 |
| 900119 | 7:31AM | 5:36PM LT | 10: 5 |
| 900120 | 7:31AM | 5:37PM LT | 10: 6 |
| 900121 | 7:31AM | 5:38PM LT | 10: 8 |
| 900122 | 7:30AM | 5:39PM LT | 10: 9 |
| 900123 | 7:30AM | 5:40PM LT | 10:10 |
| 900124 | 7:29AM | 5:41PM LT | 10:12 |
| 900125 | 7:29AM | 5:42PM LT | 10:13 |
| 900126 | 7:28AM | 5:43PM LT | 10:15 |
| 900127 | 7:28AM | 5:44PM LT | 10:17 |
| 900128 | 7:27AM | 5:45PM LT | 10:18 |
| 900129 | 7:27AM | 5:46PM LT | 10:20 |
| 900130 | 7:26AM | 5:47PM LT | 10:21 |
| 900131 | 7:25AM | 5:48PM LT | 10:23 |




**30-YEAR MEAN JANUARY DAILY MAXIMUM TEMPERATURE**




30-YEAR MEAN JANUARY DAILY MINIMUM TEMPERATURE




**30-YEAR MEAN JANUARY PRECIPITATION**

## 30- and 90-DAY NATIONAL WEATHER SERVICE OUTLOOK

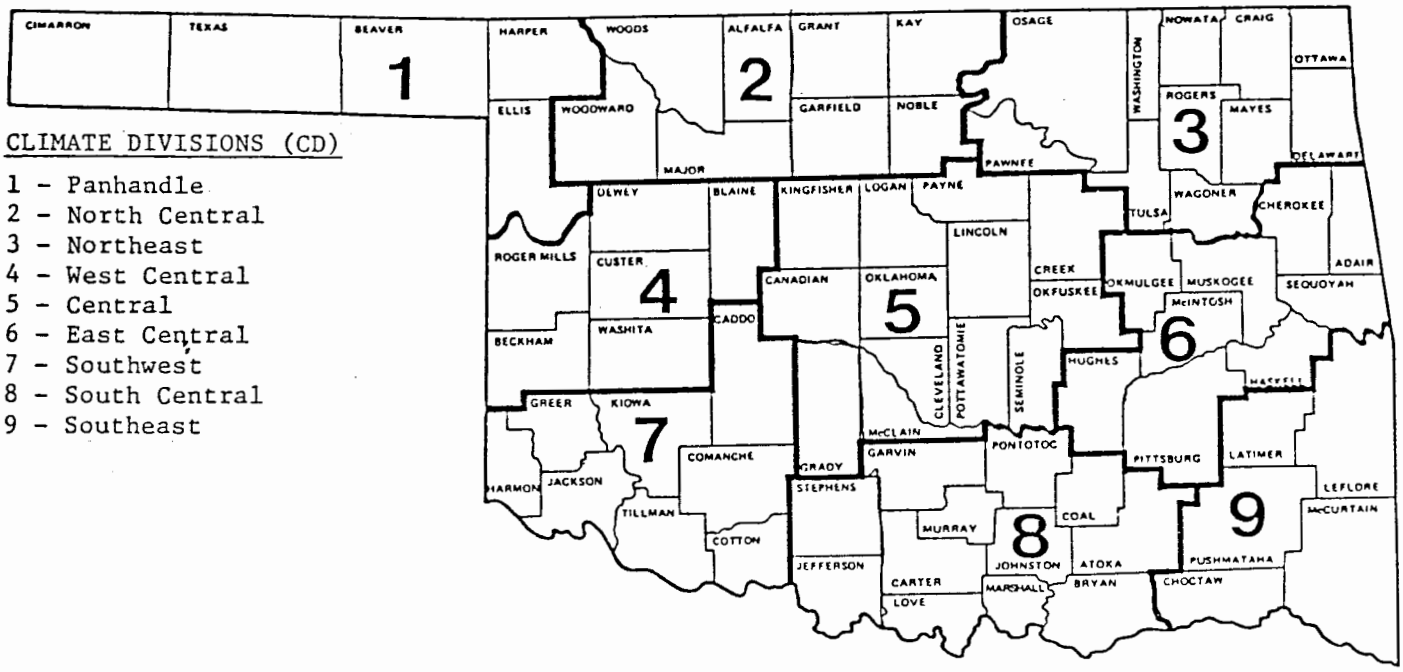
### 30-DAY OUTLOOK (DECEMBER)

Precipitation - Below Normal Statewide
Temperature - Near Normal Statewide

### 90-DAY OUTLOOK (DECEMBER-FEBRUARY)

Precipitation - Below Normal Near OK & TX Panhandles
Near Normal Elsewhere
Temperature - Near Normal Statewide

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:

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

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.

## EXPLANATION OF MAPS

To give a Statewide perspective, a series of maps is produced each month from the information contained in the station tables. Each map is calculated using between 50 and 200 observations. Only stations with complete monthly records are used. Each observation is put into one of three categories and assigned a plus (+), minus (-), or a dot (.). The minus is the lowest numeric category, the dot is the middle and the plus the highest numeric category. If a map location has no report, a value is estimated. Each map is accompanied by its own legend. The categories will vary from month to month throughout the year. The categories for the deviations from normal maps will always remain constant. This is to facilitate comparisons between months and across years.

# JANUARY 1990

## CLIMATE CALENDAR

The data on this calendar are for Oklahoma City. Normal values are calculated for the period 1948-1987. Extremes are found for the period of record (1924-present).

| Normal | 1 | Actual |
|---|---|---|
| 46.3 | max | |
| 26.6 | min | |
| .022 | pcpn | |
| 28 | HDD | |
| 0 | CDD | |
| Highest Max | | 72-1943 |
| Lowest Max | | 13-1979 |
| Lowest Min | | 2-1928 |
| Highest Min | | 51-1966 |
| Greatest pcpn | | .50-1966 |

| Normal | 2 | Actual |
|---|---|---|
| 47.3 | max | |
| 27.2 | min | |
| .078 | pcpn | |
| 28 | HDD | |
| 0 | CDD | |
| Highest Max | | 70-1964 |
| Lowest Max | | 21-1928 |
| Lowest Min | | 3-1979 |
| Highest Min | | 56-1950 |
| Greatest pcpn | | 1.01-1951 |

| Normal | 3 | Actual |
|---|---|---|
| 45.1 | max | |
| 24.3 | min | |
| .066 | pcpn | |
| 30 | HDD | |
| 0 | CDD | |
| Highest Max | | 71-1939 |
| Lowest Max | | 11-1947 |
| Lowest Min | | 1-1959 |
| Highest Min | | 50-1955 |
| Greatest pcpn | | .83-1973 |

| Normal | 4 | Actual |
|---|---|---|
| 43.6 | max | |
| 25.0 | min | |
| .024 | pcpn | |
| 30 | HDD | |
| 0 | CDD | |
| Highest Max | | 72-1927 |
| Lowest Max | | 11-1959 |
| Lowest Min | | -7-1947 |
| Highest Min | | 60-1955 |
| Greatest pcpn | | 1.81-1932 |

| Normal | 5 | Actual |
|---|---|---|
| 46.7 | max | |
| 26.1 | min | |
| .043 | pcpn | |
| 28 | HDD | |
| 0 | CDD | |
| Highest Max | | 71-1927 |
| Lowest Max | | 22-1940 |
| Lowest Min | | -2-1959 |
| Highest Min | | 47-1989 |
| Greatest pcpn | | 1.00-1962 |

| Normal | 6 | Actual |
|---|---|---|
| 47.9 | max | |
| 25.0 | min | |
| .008 | pcpn | |
| 28 | HDD | |
| 0 | CDD | |
| Highest Max | | 67-1927 |
| Lowest Max | | 20-1979 |
| Lowest Min | | 6-1968 |
| Highest Min | | 47-1965 |
| Greatest pcpn | | 1.02-1934 |

| Normal | 7 | Actual |
|---|---|---|
| 44.9 | max | |
| 24.6 | min | |
| .006 | pcpn | |
| 30 | HDD | |
| 0 | CDD | |
| Highest Max | | 73-1965 |
| Lowest Max | | 16-1937 |
| Lowest Min | | 2-1968 |
| Highest Min | | 54-1965 |
| Greatest pcpn | | .93-1943 |

| Normal | 8 | Actual |
|---|---|---|
| 47.3 | max | |
| 23.9 | min | |
| .042 | pcpn | |
| 29 | HDD | |
| 0 | CDD | |
| Highest Max | | 70-1954 |
| Lowest Max | | 11-1937 |
| Lowest Min | | -4-1988 |
| Highest Min | | 49-1939 |
| Greatest pcpn | | 1.45-1935 |

| Normal | 9 | Actual |
|---|---|---|
| 45.0 | max | |
| 23.5 | min | |
| .019 | pcpn | |
| 30 | HDD | |
| 0 | CDD | |
| Highest Max | | 68-1935 |
| Lowest Max | | 9-1977 |
| Lowest Min | | -2-1977 |
| Highest Min | | 45-1966 |
| Greatest pcpn | | .43-1930 |

| Normal | 10 | Actual |
|---|---|---|
| 41.8 | max | |
| 22.4 | min | |
| .024 | pcpn | |
| 33 | HDD | |
| 0 | CDD | |
| Highest Max | | 72-1928 |
| Lowest Max | | 13-1962 |
| Lowest Min | | -3-1977 |
| Highest Min | | 47-1928 |
| Greatest pcpn | | .59-1949 |

| Normal | 11 | Actual |
|---|---|---|
| 43.2 | max | |
| 21.9 | min | |
| .016 | pcpn | |
| 32 | HDD | |
| 0 | CDD | |
| Highest Max | | 73-1928 |
| Lowest Max | | 16-1963 |
| Lowest Min | | -1-1962 |
| Highest Min | | 45-1928 |
| Greatest pcpn | | .39-1949 |

| Normal | 12 | Actual |
|---|---|---|
| 45.7 | max | |
| 25.1 | min | |
| .030 | pcpn | |
| 29 | HDD | |
| 0 | CDD | |
| Highest Max | | 73-1935 |
| Lowest Max | | 11-1963 |
| Lowest Min | | -3-1963 |
| Highest Min | | 51-1960 |
| Greatest pcpn | | .78-1927 |

| Normal | 13 | Actual |
|---|---|---|
| 47.4 | max | |
| 25.7 | min | |
| .007 | pcpn | |
| 28 | HDD | |
| 0 | CDD | |
| Highest Max | | 78-1928 |
| Lowest Max | | 26-1927 |
| Lowest Min | | -1-1963 |
| Highest Min | | 49-1952 |
| Greatest pcpn | | .27-1989 |

| Normal | 14 | Actual |
|---|---|---|
| 48.2 | max | |
| 26.2 | min | |
| .017 | pcpn | |
| 28 | HDD | |
| 0 | CDD | |
| Highest Max | | 75-1928 |
| Lowest Max | | 17-1979 |
| Lowest Min | | 1-1979 |
| Highest Min | | 50-1928 |
| Greatest pcpn | | .37-1946 |

| Normal | 15 | Actual |
|---|---|---|
| 49.1 | max | |
| 25.2 | min | |
| .026 | pcpn | |
| 28 | HDD | |
| 0 | CDD | |
| Highest Max | | 73-1952 |
| Lowest Max | | 14-1930 |
| Lowest Min | | 1-1972 |
| Highest Min | | 53-1969 |
| Greatest pcpn | | 1.07-1932 |

| Normal | 16 | Actual |
|---|---|---|
| 45.7 | max | |
| 24.3 | min | |
| .027 | pcpn | |
| 30 | HDD | |
| 0 | CDD | |
| Highest Max | | 75-1935 |
| Lowest Max | | 11-1930 |
| Lowest Min | | 0-1930 |
| Highest Min | | 52-1938 |
| Greatest pcpn | | .45-1978 |

| Normal | 17 | Actual |
|---|---|---|
| 46.7 | max | |
| 25.3 | min | |
| .039 | pcpn | |
| 29 | HDD | |
| 0 | CDD | |
| Highest Max | | 68-1951 |
| Lowest Max | | 8-1930 |
| Lowest Min | | -9-1930 |
| Highest Min | | 51-1973 |
| Greatest pcpn | | 1.61-1926 |

| Normal | 18 | Actual |
|---|---|---|
| 45.6 | max | |
| 25.0 | min | |
| .094 | pcpn | |
| 29 | HDD | |
| 0 | CDD | |
| Highest Max | | 72-1951 |
| Lowest Max | | 12-1943 |
| Lowest Min | | -9-1930 |
| Highest Min | | 47-1935 |
| Greatest pcpn | | 1.07-1968 |

| Normal | 19 | Actual |
|---|---|---|
| 43.5 | max | |
| 24.5 | min | |
| .071 | pcpn | |
| 31 | HDD | |
| 0 | CDD | |
| Highest Max | | 73-1951 |
| Lowest Max | | 12-1962 |
| Lowest Min | | -3-1984 |
| Highest Min | | 48-1954 |
| Greatest pcpn | | 1.28-1980 |

| Normal | 20 | Actual |
|---|---|---|
| 45.8 | max | |
| 24.6 | min | |
| .018 | pcpn | |
| 29 | HDD | |
| 0 | CDD | |
| Highest Max | | 65-1964 |
| Lowest Max | | 19-1978 |
| Lowest Min | | 1-1985 |
| Highest Min | | 46-1973 |
| Greatest pcpn | | .28-1980 |

| Normal | 21 | Actual |
|---|---|---|
| 45.3 | max | |
| 26.0 | min | |
| .083 | pcpn | |
| 29 | HDD | |
| 0 | CDD | |
| Highest Max | | 71-1933 |
| Lowest Max | | 13-1954 |
| Lowest Min | | -2-1935 |
| Highest Min | | 53-1933 |
| Greatest pcpn | | 1.40-1932 |

| Normal | 22 | Actual |
|---|---|---|
| 46.7 | max | |
| 25.4 | min | |
| .031 | pcpn | |
| 29 | HDD | |
| 0 | CDD | |
| Highest Max | | 79-1967 |
| Lowest Max | | 16-1962 |
| Lowest Min | | -8-1930 |
| Highest Min | | 49-1967 |
| Greatest pcpn | | .34-1927 |

| Normal | 23 | Actual |
|---|---|---|
| 45.8 | max | |
| 24.0 | min | |
| .027 | pcpn | |
| 30 | HDD | |
| 0 | CDD | |
| Highest Max | | 73-1942 |
| Lowest Max | | 13-1963 |
| Lowest Min | | -1-1963 |
| Highest Min | | 51-1967 |
| Greatest pcpn | | .89-1949 |

| Normal | 24 | Actual |
|---|---|---|
| 49.9 | max | |
| 26.6 | min | |
| .019 | pcpn | |
| 27 | HDD | |
| 0 | CDD | |
| Highest Max | | 80-1950 |
| Lowest Max | | 13-1940 |
| Lowest Min | | -1-1963 |
| Highest Min | | 44-1967 |
| Greatest pcpn | | .37-1949 |

| Normal | 25 | Actual |
|---|---|---|
| 49.5 | max | |
| 27.8 | min | |
| .081 | pcpn | |
| 26 | HDD | |
| 0 | CDD | |
| Highest Max | | 76-1952 |
| Lowest Max | | 16-1949 |
| Lowest Min | | 5-1940 |
| Highest Min | | 58-1944 |
| Greatest pcpn | | .61-1967 |

| Normal | 26 | Actual |
|---|---|---|
| 45.9 | max | |
| 26.4 | min | |
| .029 | pcpn | |
| 29 | HDD | |
| 0 | CDD | |
| Highest Max | | 72-1953 |
| Lowest Max | | 20-1957 |
| Lowest Min | | 8-1963 |
| Highest Min | | 53-1944 |
| Greatest pcpn | | .64-1983 |

| Normal | 27 | Actual |
|---|---|---|
| 45.0 | max | |
| 24.8 | min | |
| .029 | pcpn | |
| 30 | HDD | |
| 0 | CDD | |
| Highest Max | | 71-1969 |
| Lowest Max | | 17-1961 |
| Lowest Min | | 3-1963 |
| Highest Min | | 43-1968 |
| Greatest pcpn | | .62-1985 |

| Normal | 28 | Actual |
|---|---|---|
| 46.6 | max | |
| 25.4 | min | |
| .006 | pcpn | |
| 29 | HDD | |
| 0 | CDD | |
| Highest Max | | 69-1986 |
| Lowest Max | | 21-1948 |
| Lowest Min | | 5-1948 |
| Highest Min | | 60-1978 |
| Greatest pcpn | | .44-1989 |

| Normal | 29 | Actual |
|---|---|---|
| 47.2 | max | |
| 25.4 | min | |
| .069 | pcpn | |
| 28 | HDD | |
| 0 | CDD | |
| Highest Max | | 72-1971 |
| Lowest Max | | 13-1966 |
| Lowest Min | | 3-1951 |
| Highest Min | | 50-1988 |
| Greatest pcpn | | .89-1938 |

| Normal | 30 | Actual |
|---|---|---|
| 45.6 | max | |
| 24.8 | min | |
| .080 | pcpn | |
| 30 | HDD | |
| 0 | CDD | |
| Highest Max | | 73-1931 |
| Lowest Max | | 17-1949 |
| Lowest Min | | 2-1966 |
| Highest Min | | 55-1988 |
| Greatest pcpn | | 1.02-1975 |

| Normal | 31 | Actual |
|---|---|---|
| 47.0 | max | |
| 27.0 | min | |
| .059 | pcpn | |
| 28 | HDD | |
| 0 | CDD | |
| Highest Max | | 75-1989 |
| Lowest Max | | 11-1985 |
| Lowest Min | | -1-1979 |
| Highest Min | | 47-1986 |
| Greatest pcpn | | .47-1941 |

## JANUARY AVERAGES

| | | |
|---|---|---|
| Temperature | : | 35.7 |
| Precipitation | : | 1.18" |
| Heating Degree Days: | | 902 |
| Cooling Degree Days: | | 0 |