

05092000 RED RIVER OF THE NORTH AT DRAYTON, ND

LOCATION.--Lat 48°34'20", long 97°08'50", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.24, T.159 N., R.51 W., Pembina County, Hydrologic Unit 09020311, on downstream side of bridge on North Dakota State Highway 66, at the North Dakota-Minnesota border, 1.5 mi northeast of Drayton, and at mile 206.7.

DRAINAGE AREA.--34,800 mi², approximately, includes 3,800 mi² in closed basins.

PERIOD OF RECORD.--April 1936 to June 1937, April 1941 to current year (fragmentary prior to April 1949).

REVISED RECORDS.--WSP 1388: 1949-50. WSP 1728: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 755.00 ft above National Geodetic Vertical Datum of 1929 (Minnesota highway bench mark). Prior to Nov. 30, 1954, nonrecording gage at site 1.5 mi upstream at datum 1.59 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of April 1897 reached a stage of about 41 ft at site and datum in use prior to Nov. 30, 1954.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|--------|--------|--------|--------|---------|-----------|---------|---------|---------|---------|---------|
| 1 | 642 | 650 | e540 | e570 | e450 | e545 | e35,000 | 4,980 | 12,700 | 3,890 | 2,640 | 2,270 |
| 2 | 612 | 623 | e545 | e590 | e435 | e550 | 37,000 | 4,620 | 17,400 | 3,750 | 2,550 | 2,070 |
| 3 | 575 | 636 | e545 | e600 | e430 | e560 | 36,900 | 4,310 | 21,200 | 3,680 | 2,450 | 1,850 |
| 4 | 571 | 638 | e530 | e605 | e430 | e575 | 36,100 | 4,050 | 22,900 | 3,710 | 2,300 | 1,680 |
| 5 | 533 | 628 | e530 | e620 | e430 | e585 | 35,000 | 3,830 | 23,300 | 3,700 | 2,120 | 1,580 |
| 6 | 511 | 578 | e535 | e620 | e430 | e600 | 33,700 | 3,680 | 22,900 | 3,650 | 2,020 | 1,680 |
| 7 | 496 | 553 | e560 | e610 | e430 | e620 | 32,100 | 3,550 | 21,900 | 3,630 | 2,000 | 2,070 |
| 8 | 495 | e530 | e570 | e600 | e435 | e670 | 30,400 | 3,330 | 20,400 | 3,620 | 1,930 | 2,150 |
| 9 | 483 | e550 | e580 | e590 | e445 | e735 | 28,400 | 3,130 | 18,700 | 3,690 | 1,920 | 2,860 |
| 10 | 460 | e570 | e580 | e580 | e450 | e780 | 26,200 | 2,960 | 17,200 | 3,810 | 1,940 | 4,920 |
| 11 | 473 | e580 | e565 | e560 | e450 | e800 | 23,800 | 2,820 | 16,300 | 3,890 | 2,060 | 6,320 |
| 12 | 506 | e595 | e560 | e540 | e450 | e865 | 21,200 | 3,990 | 15,400 | 3,870 | 2,190 | 6,710 |
| 13 | 520 | 605 | e550 | e530 | e460 | e895 | 18,700 | 6,590 | 14,200 | 3,820 | 2,240 | 6,350 |
| 14 | 564 | 619 | e545 | e520 | e470 | e915 | 17,900 | 9,880 | 12,900 | 4,390 | 2,230 | 5,630 |
| 15 | 600 | 642 | e540 | e520 | e470 | e960 | 17,100 | 13,800 | 11,700 | 5,890 | 2,230 | 4,920 |
| 16 | 687 | 643 | e520 | e530 | e480 | e1,060 | 16,000 | 16,700 | 10,700 | 7,470 | 2,210 | 4,410 |
| 17 | 821 | 646 | e500 | e530 | e480 | e1,160 | 14,500 | e17,000 | 9,940 | 8,060 | 2,160 | 4,030 |
| 18 | 788 | 698 | e490 | e530 | e480 | e1,260 | 12,900 | e16,500 | 9,380 | 7,800 | 2,060 | 3,740 |
| 19 | 714 | 781 | e490 | e530 | e480 | e1,360 | 11,400 | e15,000 | 8,930 | 7,070 | 1,990 | 3,480 |
| 20 | 605 | 871 | e490 | e530 | e480 | e1,460 | 9,960 | e13,000 | 8,530 | 6,170 | 1,860 | 3,350 |
| 21 | 585 | 896 | e490 | e530 | e480 | e1,600 | 9,350 | e11,500 | 8,290 | 5,360 | 1,750 | 3,310 |
| 22 | 556 | e860 | e490 | e515 | e480 | e1,750 | e8,900 | e10,300 | 8,050 | 4,770 | 1,630 | 3,340 |
| 23 | 570 | e750 | e490 | e515 | e485 | e1,930 | e8,300 | e9,500 | 7,460 | 4,300 | 1,580 | 3,360 |
| 24 | 569 | e630 | e505 | e515 | e490 | e2,160 | e7,800 | e8,700 | 6,870 | 3,910 | 1,540 | 3,590 |
| 25 | 587 | e530 | e525 | e515 | e490 | e2,550 | e7,300 | e7,900 | 6,270 | 3,650 | 1,520 | 3,910 |
| 26 | 631 | e560 | e535 | e530 | e495 | e3,600 | e6,800 | e7,400 | 5,770 | 3,490 | 1,560 | 4,190 |
| 27 | 643 | e600 | e530 | e530 | e505 | e4,650 | e6,500 | e6,900 | 5,300 | 3,340 | 1,660 | 4,700 |
| 28 | 651 | e610 | e530 | e520 | e520 | e8,000 | 6,220 | e6,500 | 4,930 | 3,220 | 1,980 | 5,390 |
| 29 | 671 | e600 | e530 | e485 | e530 | e17,500 | 5,800 | 6,060 | 4,550 | 3,050 | 2,370 | 5,970 |
| 30 | 652 | e540 | e535 | e450 | --- | e25,000 | 5,340 | 6,490 | 4,160 | 2,910 | 2,530 | 6,320 |
| 31 | 650 | --- | e550 | e450 | --- | e31,000 | --- | 8,780 | --- | 2,760 | 2,440 | --- |
| TOTAL | 18,421 | 19,212 | 16,475 | 16,860 | 13,540 | 116,695 | 566,570 | 243,750 | 378,230 | 136,320 | 63,660 | 116,150 |
| MEAN | 594 | 640 | 531 | 544 | 467 | 3,764 | 18,890 | 7,863 | 12,610 | 4,397 | 2,054 | 3,872 |
| MAX | 821 | 896 | 580 | 620 | 530 | 31,000 | 37,000 | 17,000 | 23,300 | 8,060 | 2,640 | 6,710 |
| MIN | 460 | 530 | 490 | 450 | 430 | 545 | 5,340 | 2,820 | 4,160 | 2,760 | 1,520 | 1,580 |
| AC-FT | 36,540 | 38,110 | 32,680 | 33,440 | 26,860 | 231,500 | 1,124,000 | 483,500 | 750,200 | 270,400 | 126,300 | 230,400 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2004, BY WATER YEAR (WY)

| | | | | | | | | | | | | |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| MEAN | 1,960 | 1,885 | 1,441 | 1,185 | 1,146 | 3,379 | 15,320 | 9,533 | 6,193 | 5,553 | 2,664 | 2,189 |
| MAX | 5,194 | 11,840 | 4,168 | 2,679 | 2,598 | 16,290 | 54,710 | 58,890 | 23,420 | 28,240 | 21,580 | 12,140 |
| (WY) | (1995) | (2001) | (1999) | (2001) | (1998) | (1998) | (1997) | (1950) | (1962) | (1975) | (1993) | (1999) |
| MIN | 317 | 277 | 149 | 174 | 201 | 280 | 1,275 | 938 | 676 | 348 | 243 | 329 |
| (WY) | (1991) | (1977) | (1977) | (1990) | (1977) | (1962) | (1981) | (1977) | (1977) | (1988) | (1977) | (1988) |

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

WATER YEARS 1949 - 2004

| | | | | | | | | | | | | |
|--------------------------|-----------|--|--|--|--|--|-----------|--|-------|-----------|--|--------------|
| ANNUAL TOTAL | 909,317 | | | | | | 1,705,883 | | | | | |
| ANNUAL MEAN | 2,491 | | | | | | 4,661 | | | 4,393 | | |
| HIGHEST ANNUAL MEAN | | | | | | | | | | 11,280 | | 1997 |
| LOWEST ANNUAL MEAN | | | | | | | | | | 536 | | 1977 |
| HIGHEST DAILY MEAN | 15,300 | | | | | | 37,000 | | Apr 2 | 124,000 | | Apr 24, 1997 |
| LOWEST DAILY MEAN | 351 | | | | | | 430 | | Feb 3 | 110 | | Dec 23, 1989 |
| ANNUAL SEVEN-DAY MINIMUM | 399 | | | | | | 431 | | Feb 2 | 118 | | Dec 28, 1989 |
| MAXIMUM PEAK FLOW | | | | | | | a37,400 | | Apr 2 | 124,000 | | Apr 24, 1997 |
| MAXIMUM PEAK STAGE | | | | | | | 39.55 | | Apr 5 | 45.55 | | Apr 24, 1997 |
| INSTANTANEOUS LOW FLOW | | | | | | | | | | 7.7 | | Oct 16, 1936 |
| ANNUAL RUNOFF (AC-FT) | 1,804,000 | | | | | | 3,384,000 | | | 3,183,000 | | |
| 10 PERCENT EXCEEDS | 5,890 | | | | | | 13,900 | | | 10,100 | | |
| 50 PERCENT EXCEEDS | 984 | | | | | | 1,750 | | | 1,930 | | |
| 90 PERCENT EXCEEDS | 530 | | | | | | 490 | | | 498 | | |

05092000 RED RIVER OF THE NORTH AT DRAYTON, ND—Continued

a Gage height, 38.65 ft
e Estimated

