# 05062000 BUFFALO RIVER NEAR DILWORTH, MN

Upper Red Basin
Buffalo Subbasin

LOCATION.--Lat 46°57′40″, long 96°39′40″ referenced to North American Datum of 1927, in SW ¼ SE ¼ sec.6, T.140 N., R.47 W., Clay County, MN, Hydrologic Unit 09020106, on left bank, at County Road 94 bridge, 4.5 mi southeast of Kragnes, 6.5 miles northeast of Dilworth, and 9 mi downstream from South Branch.

DRAINAGE AREA.--975 $mi^2$, (revised in 1998 Annual Report).

## SURFACE-WATER RECORDS

PERIOD OF RECORD.--March 1931 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1931(M).

GAGE.--Water-stage recorder. Datum of gage is 878.31 ft above sea level (NGVD of 1929, levels by U.S. Army Corps of Engineers). Prior to April 5, 1937, nonrecording gage at same site and datum.

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

**05062000 BUFFALO RIVER NEAR DILWORTH, MN—Continued**

**DISCHARGE, CUBIC FEET PER SECOND**
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**
**DAILY MEAN VALUES**
[e, estimated]

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 79 | 1,080 | e245 | e94 | e77 | e142 | 2,860 | e800 | 779 | 598 | 98 | 105 |
| 2 | 71 | 951 | e228 | e94 | e77 | e142 | 2,410 | 784 | 647 | 477 | 96 | 95 |
| 3 | 65 | 800 | e212 | e93 | e77 | e142 | 2,080 | 772 | 553 | 383 | 95 | 90 |
| 4 | 59 | 672 | e192 | e93 | e78 | e142 | 1,850 | 747 | 482 | 321 | 95 | 85 |
| 5 | 56 | 614 | e182 | e93 | e78 | e142 | e1,680 | 711 | 422 | 274 | 94 | 82 |
| 6 | 62 | 596 | e168 | e92 | e78 | e142 | e1,540 | 679 | 381 | 239 | 92 | 80 |
| 7 | 87 | 803 | e157 | e92 | e78 | e142 | e1,430 | 644 | 356 | 208 | 90 | 79 |
| 8 | 163 | 981 | e143 | e90 | e80 | e142 | 1,410 | 612 | 355 | 177 | 93 | 75 |
| 9 | 285 | 1,080 | e134 | e88 | e85 | e142 | 1,610 | 587 | 368 | 157 | 93 | 77 |
| 10 | 405 | 1,240 | e127 | e85 | e95 | e142 | 1,910 | 564 | 382 | 146 | 93 | 90 |
| 11 | 649 | 1,400 | e120 | e82 | e111 | e142 | 2,310 | 541 | 380 | 135 | 95 | 111 |
| 12 | 944 | 1,440 | e113 | e81 | e122 | e142 | 2,850 | 525 | 367 | 124 | 93 | 158 |
| 13 | 1,260 | 1,380 | e107 | e79 | e130 | e146 | 3,150 | 554 | 344 | 115 | 89 | 181 |
| 14 | 1,670 | 1,210 | e104 | e79 | e140 | e150 | 3,070 | 613 | 322 | 106 | 85 | 201 |
| 15 | 2,470 | 999 | e100 | e78 | e146 | e180 | 2,760 | 681 | 306 | 103 | 82 | 180 |
| 16 | 3,160 | 826 | e99 | e78 | e153 | e220 | 2,410 | 760 | 295 | 103 | 83 | 154 |
| 17 | 3,250 | e702 | e97 | e78 | e153 | e320 | 2,110 | 788 | 330 | 106 | 97 | 135 |
| 18 | 2,900 | e570 | e96 | e78 | e148 | e610 | 1,870 | 746 | 576 | 134 | 220 | 120 |
| 19 | 2,440 | e482 | e97 | e78 | e145 | e1,000 | 1,700 | 655 | 1,110 | 170 | 295 | 111 |
| 20 | 2,020 | e447 | e97 | e78 | e144 | e2,100 | 1,550 | 574 | 1,880 | 158 | 360 | 114 |
| 21 | 1,720 | e422 | e97 | e78 | e140 | e4,400 | 1,410 | 522 | 2,820 | 150 | 435 | 107 |
| 22 | 1,470 | e410 | e97 | e78 | e140 | e6,900 | 1,290 | 502 | 2,960 | 162 | 488 | 103 |
| 23 | 1,260 | e400 | e97 | e78 | e140 | e8,300 | 1,190 | 482 | 2,600 | 217 | 494 | 100 |
| 24 | 1,050 | e390 | e97 | e78 | e140 | 9,860 | 1,090 | 469 | 2,150 | 234 | 425 | 102 |
| 25 | 924 | e380 | e97 | e77 | e140 | 10,600 | 1,020 | 458 | 1,830 | 229 | 313 | 102 |
| 26 | 910 | e365 | e97 | e77 | e140 | 9,780 | 976 | 511 | 1,600 | 210 | 238 | 102 |
| 27 | 941 | e340 | e97 | e77 | e140 | 7,690 | 937 | 764 | 1,360 | 174 | 194 | 98 |
| 28 | 1,010 | e315 | e96 | e77 | e142 | 5,850 | 869 | 900 | 1,120 | 146 | 164 | 92 |
| 29 | 1,110 | e290 | e96 | e77 | --- | 4,440 | e835 | 990 | 907 | 129 | 142 | 90 |
| 30 | 1,180 | e265 | e95 | e77 | --- | 3,870 | e815 | 1,000 | 731 | 116 | 127 | 89 |
| 31 | 1,170 | --- | e95 | e77 | --- | 3,370 | --- | 920 | --- | 103 | 115 | --- |
| Total | 34,840 | 21,850 | 3,879 | 2,554 | 3,317 | 81,490 | 52,992 | 20,855 | 28,713 | 6,104 | 5,573 | 3,308 |
| Mean | 1,124 | 728 | 125 | 82.4 | 118 | 2,629 | 1,766 | 673 | 957 | 197 | 180 | 110 |
| Max | 3,250 | 1,440 | 245 | 94 | 153 | 10,600 | 3,150 | 1,000 | 2,960 | 598 | 494 | 201 |
| Min | 56 | 265 | 95 | 77 | 77 | 142 | 815 | 458 | 295 | 103 | 82 | 75 |
| Ac-ft | 69,110 | 43,340 | 7,690 | 5,070 | 6,580 | 161,600 | 105,100 | 41,370 | 56,950 | 12,110 | 11,050 | 6,560 |
| Cfsm | 1.15 | 0.75 | 0.13 | 0.08 | 0.12 | 2.70 | 1.81 | 0.69 | 0.98 | 0.20 | 0.18 | 0.11 |
| In. | 1.33 | 0.83 | 0.15 | 0.10 | 0.13 | 3.11 | 2.02 | 0.80 | 1.10 | 0.23 | 0.21 | 0.13 |

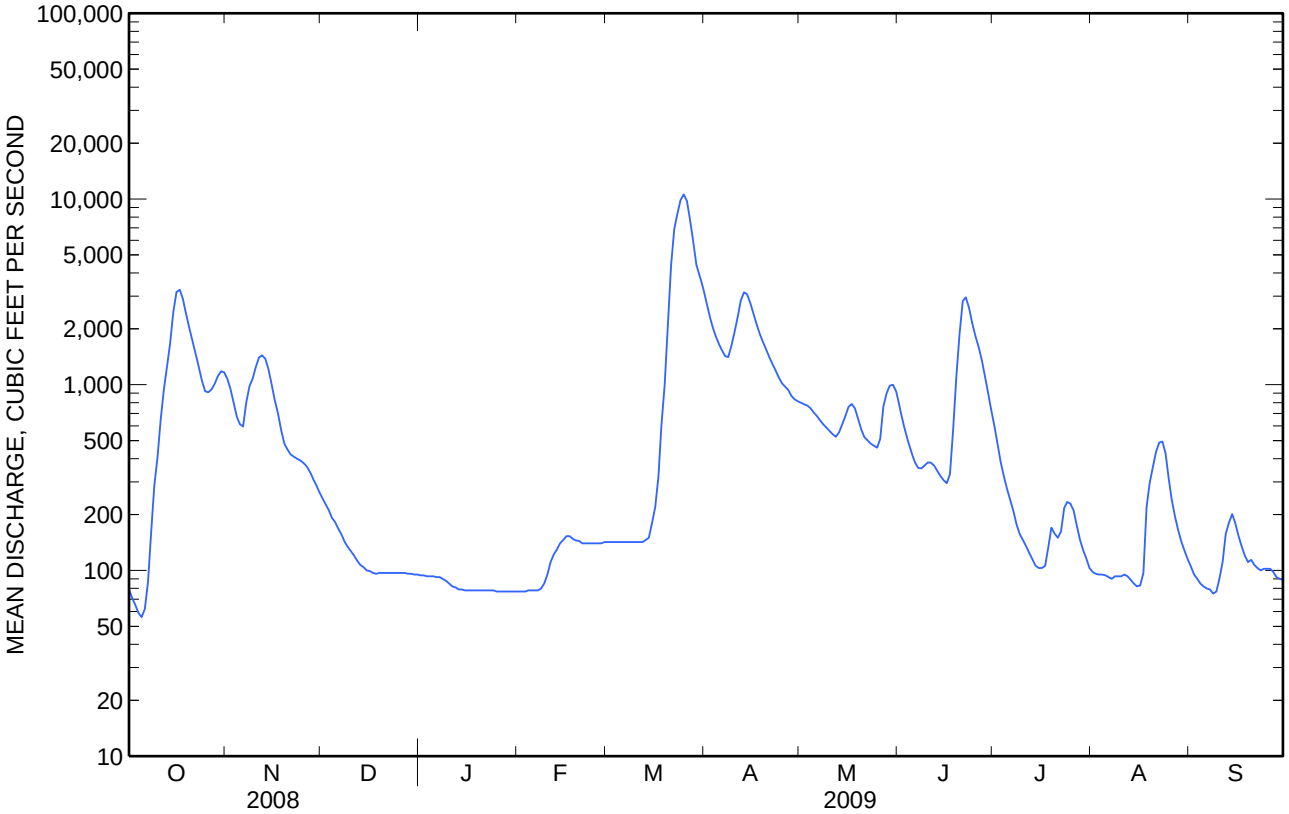
**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2009, BY WATER YEAR (WY)**

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 83.1 | 83.1 | 43.0 | 28.2 | 31.2 | 234 | 638 | 270 | 269 | 214 | 79.7 | 72.4 |
| Max | 1,124 | 728 | 240 | 148 | 285 | 2,629 | 3,412 | 1,144 | 2,138 | 2,814 | 910 | 517 |
| (WY) | (2009) | (2009) | (1999) | (2006) | (1998) | (2009) | (1997) | (1998) | (1962) | (1975) | (1993) | (1944) |
| Min | 5.48 | 8.74 | 4.75 | 0.87 | 0.76 | 2.26 | 33.5 | 27.2 | 15.1 | 2.23 | 0.00 | 0.79 |
| (WY) | (1940) | (1937) | (1938) | (1940) | (1940) | (1940) | (1931) | (1931) | (1934) | (1936) | (1936) | (1936) |

**05062000 BUFFALO RIVER NEAR DILWORTH, MN—Continued**

**SUMMARY STATISTICS**

| | Calendar Year 2008 | | Water Year 2009 | | Water Years 1931 - 2009 | |
|---|---|---|---|---|---|---|
| **Annual total** | 144,888 | | 265,475 | | | |
| **Annual mean** | 396 | | 727 | | 172 | |
| **Highest annual mean** | | | | | 727 | 2009 |
| **Lowest annual mean** | | | | | 25.6 | 1934 |
| **Highest daily mean** | 3,250 | Oct 17 | 10,600 | Mar 25 | 13,500 | Jul 2, 1975 |
| **Lowest daily mean** | 32 | Mar 9 | 56 | Oct 5 | [a]0.00 | Jul 22, 1936 |
| **Annual seven-day minimum** | 33 | Mar 6 | 68 | Oct 1 | 0.00 | Jul 28, 1936 |
| **Maximum peak flow** | | | [b]11,400 | Mar 25 | 13,600 | Jul 2, 1975 |
| **Maximum peak stage** | | | 25.86 | Mar 25 | 27.10 | Jul 2, 1975 |
| **Instantaneous low flow** | | | 56 | Oct 5 | [a]0.00 | Jul 22, 1936 |
| **Annual runoff (ac-ft)** | 287,400 | | 526,600 | | 124,600 | |
| **Annual runoff (cfsm)** | 0.406 | | 0.746 | | 0.176 | |
| **Annual runoff (inches)** | 5.53 | | 10.13 | | 2.40 | |
| **10 percent exceeds** | 1,020 | | 1,840 | | 380 | |
| **50 percent exceeds** | 185 | | 208 | | 47 | |
| **90 percent exceeds** | 37 | | 80 | | 11 | |

[a] Occurred many days in 1936.

[b] From measurement of flow; gage height 25.82 ft.