

UPPER MISSISSIPPI RIVER MAIN STEM--Continued

05376800 WHITEWATER RIVER NEAR BEAVER, MN

LOCATION.--Lat 44° 09'03", long 92° 00'17", in SW¹/₄ SE¹/₄ sec. 15, T. 108 N., R. 10 W., Winona County, Hydrologic Unit 07040003, on left bank at downstream side of bridge on County Road No. 30, 0.5 mi above mouth of Beaver Creek, and 4.7 mi north of Elba.

DRAINAGE AREA.--271 mi².

PERIOD OF RECORD.--May 1975 to September 1985, May 1991 to July 1993, October 1993 to current.

GAGE.--Water-stage recorder. Datum of gage is 692.01 ft above sea level. Prior to Oct. 1, 1976, at datum 2.00 ft higher.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1939, 19,200 ft³/s, June 21, 1974, gage height, 13.00 ft, present datum, determined by contracted-opening measurement of flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 980 ft³/s (revised) and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|--------|------|--------------------------------|------------------|
| Aug 23 | 2215 | *1,460 | *5.52 | Aug 24 | 1230 | 1,260 | 4.93 |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 171 | 177 | 160 | e105 | 120 | 149 | 168 | 271 | 256 | 180 | 341 | 261 |
| 2 | 163 | 173 | 158 | e102 | 120 | 149 | 166 | 263 | 255 | 182 | 299 | 250 |
| 3 | 163 | 170 | 156 | e100 | 121 | 147 | 190 | 256 | 243 | 325 | 282 | 240 |
| 4 | 162 | 166 | 155 | e99 | 119 | 144 | 299 | 252 | 237 | 343 | 271 | 234 |
| 5 | 182 | 167 | 156 | e98 | 117 | 144 | 334 | 258 | 239 | 234 | 258 | 242 |
| 6 | 196 | 164 | 156 | e98 | 119 | 141 | 401 | 251 | 279 | 231 | 249 | 232 |
| 7 | 185 | 162 | 154 | e99 | 118 | 136 | 397 | 245 | 267 | 208 | 247 | 224 |
| 8 | 165 | 162 | 153 | e100 | 120 | 141 | 348 | 239 | 243 | 211 | 244 | 229 |
| 9 | 159 | 165 | 153 | e103 | 124 | 141 | 480 | 228 | 232 | 263 | 249 | 220 |
| 10 | 164 | 202 | 152 | e105 | 125 | 138 | 498 | 222 | 230 | 205 | 359 | 215 |
| 11 | 162 | 238 | 152 | e110 | e130 | 139 | 497 | 222 | 227 | 191 | 349 | 211 |
| 12 | 159 | 213 | 152 | e113 | e155 | 137 | 498 | 245 | 221 | 183 | 288 | 225 |
| 13 | 158 | 198 | 151 | e120 | 168 | 136 | 430 | 258 | 214 | 192 | 281 | 222 |
| 14 | 158 | 196 | 151 | e140 | 167 | 137 | 399 | 252 | 207 | 181 | 264 | 210 |
| 15 | 159 | 191 | 151 | e155 | 160 | 144 | 373 | 235 | 202 | 174 | 250 | 204 |
| 16 | 163 | 188 | 151 | e140 | 259 | 202 | 358 | 241 | 203 | 175 | 245 | 196 |
| 17 | 169 | 184 | 150 | 127 | 200 | 277 | 336 | 421 | 200 | 190 | 234 | 191 |
| 18 | 173 | 183 | 150 | 122 | 170 | 240 | 315 | 482 | 196 | 205 | 232 | 198 |
| 19 | 162 | 184 | 150 | 117 | 152 | 198 | 302 | 384 | 194 | 298 | 345 | 197 |
| 20 | 150 | 179 | e125 | 119 | 150 | 189 | 294 | 359 | 193 | 257 | 299 | 184 |
| 21 | 150 | 175 | e100 | 117 | 146 | 191 | 287 | 394 | 190 | 348 | 265 | 180 |
| 22 | 151 | 176 | e95 | 121 | 144 | 179 | 342 | 381 | 188 | 286 | 268 | 183 |
| 23 | 154 | 176 | e92 | 120 | 145 | 170 | 464 | 348 | 198 | 248 | 526 | 185 |
| 24 | 154 | 170 | e96 | 119 | 144 | 165 | 380 | 330 | 192 | 232 | 943 | 181 |
| 25 | 155 | 169 | e103 | 113 | 141 | 159 | 346 | 316 | 183 | 215 | 498 | 186 |
| 26 | 154 | 168 | e110 | 125 | 143 | 157 | 331 | 299 | 178 | 605 | 392 | 186 |
| 27 | 203 | 166 | e115 | 122 | 144 | 156 | 320 | 287 | 175 | 552 | 352 | 180 |
| 28 | 223 | 165 | e117 | 118 | 149 | 168 | 313 | 280 | 177 | 380 | 327 | 173 |
| 29 | 202 | 167 | e115 | 117 | --- | 172 | 295 | 270 | 179 | 343 | 307 | 171 |
| 30 | 195 | 166 | e112 | 116 | --- | 166 | 281 | 259 | 176 | 312 | 287 | 173 |
| 31 | 184 | --- | e108 | 113 | --- | 166 | --- | 256 | --- | 393 | 274 | --- |
| TOTAL | 5248 | 5360 | 4199 | 3573 | 4070 | 5078 | 10442 | 9004 | 6374 | 8342 | 10025 | 6183 |
| MEAN | 169 | 179 | 135 | 115 | 145 | 164 | 348 | 290 | 212 | 269 | 323 | 206 |
| MAX | 223 | 238 | 160 | 155 | 259 | 277 | 498 | 482 | 279 | 605 | 943 | 261 |
| MIN | 150 | 162 | 92 | 98 | 117 | 136 | 166 | 222 | 175 | 174 | 232 | 171 |
| AC-FT | 10410 | 10630 | 8330 | 7090 | 8070 | 10070 | 20710 | 17860 | 12640 | 16550 | 19880 | 12260 |
| CFSM | .62 | .66 | .50 | .43 | .54 | .60 | 1.28 | 1.07 | .78 | .99 | 1.19 | .76 |
| IN. | .72 | .74 | .58 | .49 | .56 | .70 | 1.43 | 1.24 | .87 | 1.15 | 1.38 | .85 |

e Estimated

05376800 WHITEWATER RIVER NEAR BEAVER, MN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1999, BY WATER YEAR (WY)

| | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 143 | 155 | 138 | 124 | 151 | 267 | 212 | 185 | 179 | 223 | 166 | 148 |
| MAX | 223 | 288 | 235 | 188 | 236 | 512 | 348 | 290 | 260 | 973 | 323 | 230 |
| (WY) | 1994 | 1992 | 1992 | 1980 | 1985 | 1985 | 1999 | 1999 | 1998 | 1978 | 1999 | 1978 |
| MIN | 88.0 | 84.8 | 77.0 | 80.6 | 59.7 | 84.2 | 92.9 | 89.6 | 112 | 92.1 | 87.1 | 85.5 |
| (WY) | 1978 | 1978 | 1977 | 1978 | 1978 | 1978 | 1977 | 1977 | 1976 | 1977 | 1977 | 1977 |

| SUMMARY STATISTICS | FOR 1998 CALENDAR YEAR | FOR 1999 WATER YEAR | WATER YEARS 1975 - 1999 |
|--------------------------|------------------------|---------------------|-------------------------|
| ANNUAL TOTAL | 73557 | 77898 | |
| ANNUAL MEAN | 202 | 213 | 172 ^a |
| HIGHEST ANNUAL MEAN | | | 213 |
| LOWEST ANNUAL MEAN | | | 103 |
| HIGHEST DAILY MEAN | 1060 | Aug 17 | 8760 |
| LOWEST DAILY MEAN | 92 | Dec 23 | 53 |
| ANNUAL SEVEN-DAY MINIMUM | 102 | Dec 21 | 53 |
| INSTANTANEOUS PEAK FLOW | | | 1460 |
| INSTANTANEOUS PEAK STAGE | | | 5.52 |
| INSTANTANEOUS LOW FLOW | | | 92 ^b |
| ANNUAL RUNOFF (AC-FT) | 145900 | 154500 | 124900 |
| ANNUAL RUNOFF (CFSM) | .74 | .79 | .64 |
| ANNUAL RUNOFF (INCHES) | 10.10 | 10.69 | 8.65 |
| 10 PERCENT EXCEEDS | 307 | 342 | 246 |
| 50 PERCENT EXCEEDS | 166 | 184 | 147 |
| 90 PERCENT EXCEEDS | 118 | 120 | 96 |

a Median of annual mean discharges is 180 ft³/s.
 b Result of freezeup.

