MADISON RIVER BASIN

## 06036905 FIREHOLE RIVER NEAR WEST YELLOWSTONE, MT

LOCATION.--Lat 44° 37'13", long 110° 51'44", Yellowstone National Park, Hydrologic Unit 10020007, on right bank 1.6 mi south of Madison Junction, 12 mi east of West Yellowstone, and at river mile 1.8.

DRAINAGE AREA.--282 $mi^2$.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to March 1996, October 2002 to September 2003.

GAGE.--Water-stage recorder. Datum of gage is 7,050 ft above NGVD of 1929. U.S. Geological Survey data collection platform with satellite telemetry at station.

REMARKS.--Records good. No regulation or diversions upstream from station. Station operated and record provided by the Montana District.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 240 | 237 | 250 | 250 | 316 | 248 | 289 | 325 | 589 | 258 | 234 | 228 |
| 2 | 242 | 238 | 253 | 249 | 283 | 246 | 294 | 307 | 528 | 254 | 230 | 227 |
| 3 | 246 | 235 | 253 | 253 | 261 | 251 | 279 | 325 | 479 | 249 | 228 | 234 |
| 4 | 245 | 243 | 252 | 254 | 260 | 250 | 272 | 374 | 448 | 247 | 247 | 229 |
| 5 | 276 | 240 | 251 | 256 | 253 | 247 | 263 | 341 | 422 | 246 | 240 | 230 |
| 6 | 251 | 241 | 251 | 249 | 244 | 246 | 261 | 342 | 411 | 245 | 234 | 245 |
| 7 | 243 | 244 | 250 | 248 | 243 | 254 | 254 | 321 | 393 | 244 | 229 | 239 |
| 8 | 240 | 251 | 244 | 248 | 255 | 257 | 254 | 305 | 387 | 240 | 226 | 242 |
| 9 | 237 | 249 | 244 | 247 | 250 | 258 | 267 | 297 | 402 | 238 | 228 | 238 |
| 10 | 235 | 253 | 246 | 244 | 248 | 259 | 291 | 288 | 396 | 236 | 228 | 250 |
| 11 | 248 | 249 | 248 | 250 | 252 | 261 | 310 | 288 | 390 | 235 | 225 | 243 |
| 12 | 239 | 248 | 249 | 248 | 250 | 264 | 333 | 304 | 382 | 235 | 225 | 242 |
| 13 | 239 | 251 | 251 | 250 | 250 | 280 | 337 | 361 | 368 | 232 | 225 | 239 |
| 14 | 241 | 250 | 253 | 255 | 254 | 293 | 336 | 347 | 369 | 229 | 224 | 237 |
| 15 | 239 | 247 | 255 | 258 | 251 | 281 | 360 | 386 | 353 | 232 | 225 | 237 |
| 16 | 239 | 246 | 253 | 250 | 257 | 282 | 309 | 425 | 347 | 230 | 225 | 238 |
| 17 | 237 | 250 | 259 | 250 | 253 | 264 | 300 | 464 | 329 | 231 | 225 | 238 |
| 18 | 237 | 246 | 250 | 248 | 253 | 254 | 303 | 473 | 323 | 234 | 229 | 236 |
| 19 | 235 | 246 | 250 | 250 | 249 | 254 | 293 | 396 | 318 | 238 | 227 | 237 |
| 20 | 236 | 250 | 252 | 251 | 250 | 253 | 286 | 382 | 306 | 242 | 224 | 236 |
| 21 | 236 | 258 | 254 | 253 | 254 | 253 | 297 | 402 | 303 | 240 | 223 | 235 |
| 22 | 237 | 258 | 255 | 252 | 257 | 257 | 315 | 466 | 301 | 240 | 225 | 233 |
| 23 | 241 | 277 | 248 | 257 | 253 | 294 | 335 | 518 | 309 | 240 | 229 | 233 |
| 24 | 254 | 258 | 244 | 252 | 240 | 262 | 325 | 585 | 292 | 241 | 225 | 233 |
| 25 | 242 | 247 | 243 | 251 | 247 | 255 | 328 | 620 | 286 | 245 | 224 | 232 |
| 26 | 239 | 248 | 252 | 253 | 251 | 269 | 374 | 589 | 278 | 245 | 224 | 232 |
| 27 | 239 | 250 | 254 | 273 | 251 | 265 | 339 | 608 | 271 | 246 | 225 | 232 |
| 28 | 243 | 252 | 260 | 265 | 247 | 257 | 338 | 596 | 268 | 240 | 228 | 233 |
| 29 | 237 | 254 | 257 | 257 | --- | 253 | 344 | 619 | 265 | 240 | 228 | 233 |
| 30 | 238 | 251 | 254 | 260 | --- | 264 | 328 | 644 | 262 | 234 | 239 | 233 |
| 31 | 238 | --- | 256 | 273 | --- | 280 | --- | 594 | --- | 233 | 232 | --- |
| TOTAL | 7,489 | 7,467 | 7,791 | 7,854 | 7,132 | 8,111 | 9,214 | 13,292 | 10,775 | 7,439 | 7,080 | 7,074 |
| MEAN | 242 | 249 | 251 | 253 | 255 | 262 | 307 | 429 | 359 | 240 | 228 | 236 |
| MAX | 276 | 277 | 260 | 273 | 316 | 294 | 374 | 644 | 589 | 258 | 247 | 250 |
| MIN | 235 | 235 | 243 | 244 | 240 | 246 | 254 | 288 | 262 | 229 | 223 | 227 |
| AC-FT | 14,850 | 14,810 | 15,450 | 15,580 | 14,150 | 16,090 | 18,280 | 26,360 | 21,370 | 14,760 | 14,040 | 14,030 |

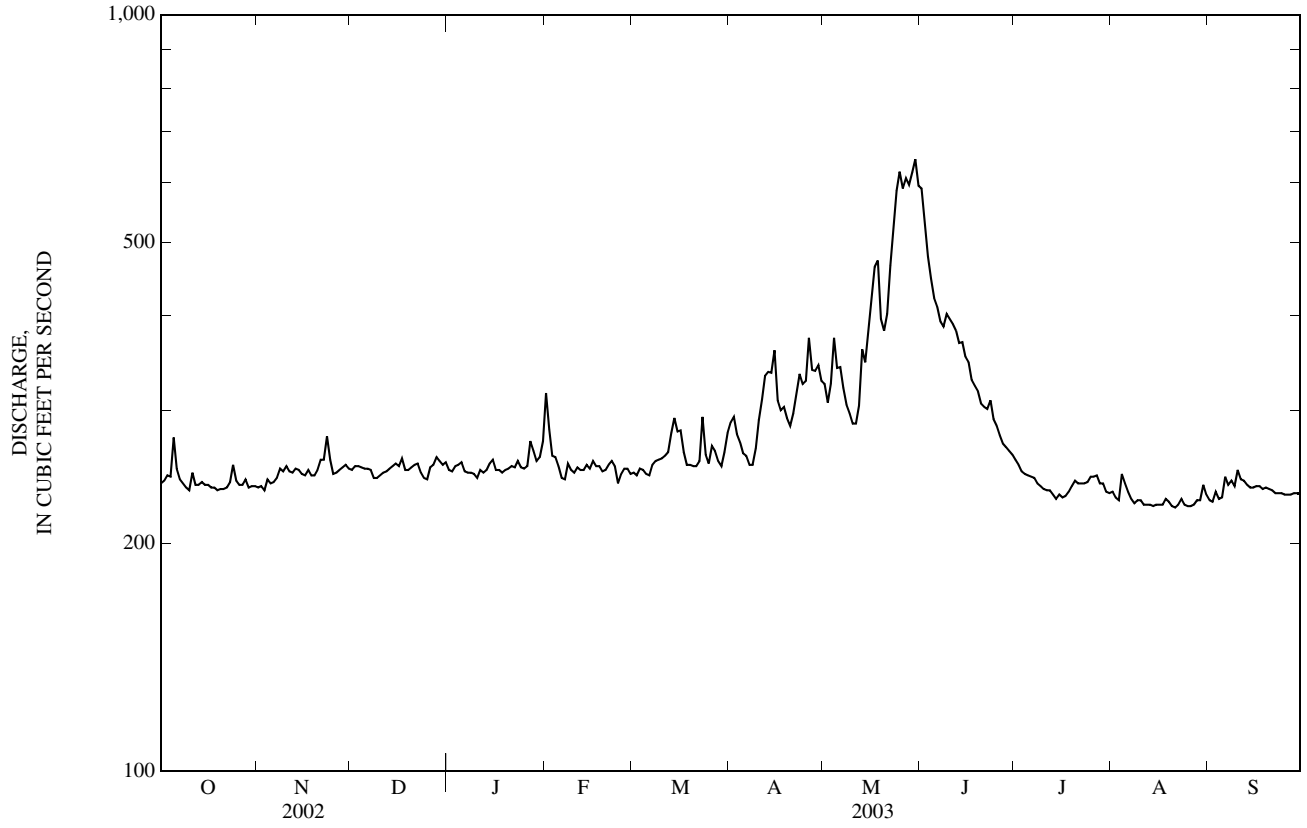
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)*

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MEAN | 280 | 275 | 268 | 263 | 262 | 271 | 332 | 488 | 429 | 295 | 271 | 272 |
| MAX | 356 | 348 | 316 | 298 | 304 | 336 | 398 | 613 | 756 | 415 | 371 | 368 |
| (WY) | (1984) | (1984) | (1984) | (1985) | (1986) | (1986) | (1986) | (1986) | (1986) | (1986) | (1986) | (1986) |
| MIN | 225 | 227 | 220 | 223 | 226 | 239 | 276 | 367 | 273 | 221 | 212 | 217 |
| (WY) | (1989) | (1993) | (1993) | (1993) | (1993) | (1992) | (1993) | (1987) | (1992) | (1988) | (1994) | (1988) |

06036905 FIREHOLE RIVER NEAR WEST YELLOWSTONE, MT—Continued

| SUMMARY STATISTICS | FOR 2003 WATER YEAR* | | WATER YEARS 1984 - 2003* | |
|---|---|---|---|---|
| ANNUAL TOTAL | 100,718 | | -- | |
| ANNUAL MEAN | 276 | | 308 | |
| HIGHEST ANNUAL MEAN | -- | | 399 | 1986 |
| LOWEST ANNUAL MEAN | -- | | 264 | 1988 |
| HIGHEST DAILY MEAN | 644 | May 30 | 1,240 | May 31, 1986 |
| LOWEST DAILY MEAN | 223 | Aug 21 | 201 | Dec 4, 1992 |
| ANNUAL SEVEN-DAY MINIMUM | 225 | Aug 11 | 205 | Aug 15, 1994 |
| MAXIMUM PEAK FLOW | 754 | May 25 | 2,050 [a] | May 18, 1996 |
| MAXIMUM PEAK STAGE | 4.28 | May 25 | 6.10[b] | May 18, 1996 |
| ANNUAL RUNOFF (AC-FT) | 199,800 | | 233,300 | |
| 10 PERCENT EXCEEDS | 349 | | 422 | |
| 50 PERCENT EXCEEDS | 251 | | 277 | |
| 90 PERCENT EXCEEDS | 232 | | 232 | |

* For period of operation.
a From rating curve extended above 1,540 $ft^3/s$.
b From floodmarks.



06036905 FIREHOLE RIVER NEAR WEST YELLOWSTONE, MT--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983 to 1993, October 2002 to September 2003.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 1983 to September 1986, October 1987 to September 1988.
WATER TEMPERATIRE: October 1983 to September 1993, October 2002 to September 2003.

INSTRUMENTATION.--Temperature recorder installed September 18, 2002.

REMARKS.--Daily water temperatures records good. Unpublished records of instantaneous water temperature and specific conducatance are available in files of Montana District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1983-86, 1988): Maximum, 633 microsiemens/cm, April 1, 1988; minimum, 140 microsiements/cm, June 5, 1986.
WATER TEMPERATURE: Maximum, 30° C, June 24, 1988; minimum, 0.5° C, December 21, 1990.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 29.0° C, July 18 and 21; minimum, 3.0° C, February 24.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 13.5 | 11.0 | 12.5 | 11.0 | 6.5 | 8.5 | 12.5 | 10.0 | 11.0 | 11.0 | 9.0 | 10.0 |
| 2 | 17.0 | 10.0 | 13.0 | 9.5 | 6.5 | 8.0 | 13.0 | 11.5 | 12.0 | 10.5 | 9.0 | 10.0 |
| 3 | 15.0 | 13.0 | 14.5 | 10.5 | 6.5 | 8.5 | 12.5 | 11.5 | 12.0 | 11.5 | 9.5 | 10.5 |
| 4 | 16.0 | 14.0 | 15.0 | 11.0 | 7.5 | 9.0 | 13.0 | 12.0 | 12.5 | 12.5 | 9.5 | 11.0 |
| 5 | 15.0 | 13.5 | 14.0 | 11.5 | 7.0 | 9.5 | 12.5 | 11.0 | 11.5 | 12.5 | 10.0 | 11.5 |
| 6 | 17.0 | 13.5 | 15.0 | 13.0 | 8.5 | 10.5 | 13.0 | 11.0 | 12.0 | 10.5 | 8.0 | 9.5 |
| 7 | 18.0 | 13.5 | 15.5 | 12.5 | 9.0 | 10.5 | 12.0 | 10.0 | 11.0 | 10.0 | 7.5 | 9.0 |
| 8 | 18.5 | 13.5 | 16.0 | 10.5 | 9.5 | 10.0 | 10.0 | 8.0 | 9.0 | 9.5 | 7.0 | 8.5 |
| 9 | 17.5 | 13.0 | 15.5 | 11.5 | 9.5 | 10.5 | 10.0 | 7.5 | 8.5 | 9.0 | 6.5 | 8.0 |
| 10 | 15.5 | 12.5 | 14.0 | 12.5 | 10.5 | 11.0 | 10.5 | 7.0 | 9.0 | 10.0 | 5.5 | 7.5 |
| 11 | 14.5 | 12.0 | 13.0 | 11.5 | 10.0 | 10.5 | 10.0 | 8.5 | 9.0 | 12.0 | 9.5 | 10.5 |
| 12 | 15.0 | 9.5 | 12.5 | 11.5 | 10.0 | 10.5 | 11.0 | 9.0 | 10.0 | 11.5 | 10.0 | 11.0 |
| 13 | 16.0 | 10.5 | 13.0 | 13.0 | 11.5 | 12.0 | 11.5 | 10.5 | 11.0 | 11.5 | 9.5 | 10.5 |
| 14 | 16.5 | 10.5 | 13.5 | 12.0 | 10.0 | 11.0 | 12.5 | 11.0 | 12.0 | 13.5 | 11.5 | 12.5 |
| 15 | 16.5 | 11.5 | 14.0 | 11.5 | 9.5 | 10.5 | 12.0 | 8.0 | 10.0 | 11.5 | 8.5 | 10.0 |
| 16 | 17.0 | 12.0 | 14.5 | 11.5 | 8.5 | 10.0 | 10.5 | 8.0 | 9.5 | 10.5 | 7.5 | 9.0 |
| 17 | 17.0 | 11.5 | 14.5 | 11.0 | 9.5 | 10.0 | 11.5 | 9.5 | 10.5 | 10.0 | 8.0 | 9.0 |
| 18 | 17.0 | 11.5 | 14.5 | 10.0 | 8.5 | 9.5 | 9.5 | 7.5 | 8.0 | 9.5 | 6.0 | 8.0 |
| 19 | 16.5 | 11.5 | 14.0 | 11.5 | 8.5 | 10.0 | 8.5 | 6.0 | 7.5 | 11.5 | 9.0 | 10.5 |
| 20 | 16.5 | 12.0 | 14.5 | 14.0 | 11.5 | 13.0 | 9.5 | 7.0 | 8.0 | 10.5 | 9.0 | 10.0 |
| 21 | 16.5 | 13.0 | 15.0 | 16.0 | 13.5 | 14.5 | 10.0 | 8.0 | 9.0 | 11.0 | 9.0 | 10.0 |
| 22 | 15.5 | 11.0 | 13.0 | 15.0 | 12.0 | 13.5 | 11.0 | 9.5 | 10.0 | 10.5 | 8.5 | 9.5 |
| 23 | 15.0 | 11.0 | 12.5 | 14.0 | 8.5 | 11.5 | 9.5 | 7.0 | 7.5 | 11.0 | 9.5 | 10.5 |
| 24 | 14.0 | 11.5 | 12.5 | 10.5 | 8.0 | 9.0 | 7.0 | 5.0 | 6.0 | 12.0 | 8.5 | 10.0 |
| 25 | 14.5 | 10.0 | 12.5 | 9.5 | 6.0 | 7.5 | 7.5 | 4.0 | 5.5 | 12.5 | 10.5 | 11.0 |
| 26 | 14.5 | 10.0 | 12.5 | 9.0 | 6.0 | 8.0 | 8.5 | 6.5 | 7.5 | 11.5 | 10.0 | 11.0 |
| 27 | 14.0 | 10.0 | 12.0 | 11.5 | 8.5 | 10.0 | 9.0 | 7.5 | 8.5 | 11.5 | 10.0 | 10.5 |
| 28 | 12.5 | 10.5 | 11.5 | 13.5 | 11.0 | 12.5 | 10.5 | 8.5 | 9.5 | 11.5 | 8.5 | 10.5 |
| 29 | 11.0 | 8.0 | 10.0 | 13.0 | 11.5 | 12.5 | 10.5 | 8.0 | 9.0 | 12.0 | 10.5 | 11.0 |
| 30 | 9.5 | 7.0 | 8.0 | 12.5 | 11.0 | 12.0 | 9.0 | 7.5 | 8.0 | 11.0 | 9.0 | 10.0 |
| 31 | 10.5 | 7.5 | 9.0 | --- | --- | --- | 11.5 | 8.5 | 10.0 | 11.0 | 10.5 | 10.5 |
| MONTH | 18.5 | 7.0 | 13.3 | 16.0 | 6.0 | 10.5 | 13.0 | 4.0 | 9.5 | 13.5 | 5.5 | 10.0 |

06036905 FIREHOLE RIVER NEAR WEST YELLOWSTONE, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—Continued
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 11.0 | 9.5 | 10.5 | 12.0 | 9.0 | 10.5 | 14.0 | 11.5 | 12.5 | 16.0 | 13.0 | 14.5 |
| 2 | 9.5 | 8.0 | 8.5 | 9.5 | 6.0 | 8.0 | 16.5 | 12.0 | 14.0 | 17.5 | 13.0 | 15.0 |
| 3 | 9.5 | 6.5 | 8.0 | 11.5 | 8.0 | 10.0 | 12.0 | 9.5 | 11.0 | 16.0 | 14.0 | 15.5 |
| 4 | 10.5 | 7.5 | 9.0 | 12.5 | 9.0 | 10.5 | 15.0 | 9.0 | 11.5 | 16.5 | 13.0 | 14.5 |
| 5 | 9.5 | 6.5 | 8.0 | 9.5 | 6.5 | 7.5 | 17.0 | 9.5 | 13.0 | 17.0 | 12.0 | 14.0 |
| 6 | 8.5 | 4.5 | 6.5 | 9.0 | 5.5 | 7.0 | 14.5 | 11.0 | 12.5 | 17.0 | 11.5 | 14.0 |
| 7 | 9.5 | 4.5 | 7.0 | 8.0 | 6.0 | 7.0 | 18.0 | 11.0 | 14.0 | 19.5 | 12.0 | 15.5 |
| 8 | 10.0 | 7.5 | 9.0 | 10.0 | 6.0 | 8.0 | 19.5 | 11.0 | 15.0 | 18.0 | 14.5 | 16.0 |
| 9 | 10.0 | 7.5 | 8.5 | 10.5 | 9.0 | 9.5 | 19.5 | 12.5 | 16.0 | 15.0 | 12.5 | 13.5 |
| 10 | 10.5 | 6.5 | 8.5 | 13.5 | 9.0 | 11.0 | 20.5 | 12.5 | 16.5 | 16.5 | 12.0 | 14.0 |
| 11 | 12.0 | 8.0 | 10.0 | 14.0 | 10.0 | 11.5 | 20.5 | 12.5 | 16.5 | 17.0 | 13.5 | 15.0 |
| 12 | 12.5 | 7.0 | 10.0 | 14.5 | 9.5 | 11.5 | 19.0 | 12.0 | 15.5 | 17.0 | 14.5 | 15.5 |
| 13 | 12.5 | 8.5 | 10.5 | 16.5 | 11.0 | 13.5 | 18.0 | 12.5 | 15.5 | 19.5 | 12.5 | 15.5 |
| 14 | 14.5 | 12.5 | 13.0 | 14.5 | 11.5 | 13.0 | 17.0 | 12.5 | 15.0 | 21.5 | 13.5 | 17.5 |
| 15 | 14.0 | 12.5 | 13.0 | 15.5 | 10.5 | 13.0 | 16.0 | 12.5 | 14.5 | 19.5 | 14.5 | 17.5 |
| 16 | 12.5 | 8.5 | 11.0 | 15.5 | 12.5 | 13.5 | 16.5 | 11.0 | 13.5 | 17.5 | 12.0 | 15.0 |
| 17 | 9.5 | 7.0 | 8.0 | 12.5 | 10.0 | 11.5 | 15.5 | 12.5 | 14.0 | 17.0 | 10.0 | 13.5 |
| 18 | 13.0 | 8.0 | 10.0 | 10.0 | 9.0 | 9.5 | 16.0 | 13.0 | 14.5 | 14.0 | 9.5 | 11.5 |
| 19 | 12.0 | 8.5 | 10.0 | 16.0 | 9.5 | 12.5 | 17.5 | 11.5 | 14.5 | 17.0 | 9.0 | 13.0 |
| 20 | 12.0 | 7.5 | 10.0 | 16.0 | 10.0 | 13.0 | 20.5 | 12.5 | 16.5 | 18.5 | 11.0 | 15.0 |
| 21 | 10.0 | 8.5 | 9.5 | 14.5 | 12.0 | 13.0 | 20.0 | 13.0 | 16.5 | 17.0 | 12.5 | 15.5 |
| 22 | 11.0 | 9.0 | 10.0 | 14.5 | 11.0 | 13.0 | 18.5 | 14.0 | 16.5 | 18.5 | 12.0 | 16.0 |
| 23 | 10.5 | 5.5 | 8.5 | 13.5 | 9.5 | 11.0 | 16.0 | 14.0 | 15.0 | 19.5 | 11.5 | 16.0 |
| 24 | 8.5 | 3.0 | 5.5 | 14.5 | 8.5 | 11.5 | 17.5 | 14.0 | 15.5 | 20.0 | 10.5 | 16.0 |
| 25 | 10.0 | 4.0 | 7.0 | 12.5 | 10.0 | 11.0 | 19.0 | 14.0 | 16.0 | 19.0 | 11.5 | 15.5 |
| 26 | 11.5 | 5.5 | 9.0 | 13.0 | 10.0 | 11.0 | 16.5 | 10.5 | 13.0 | 18.0 | 12.5 | 15.5 |
| 27 | 13.0 | 8.5 | 10.5 | 12.5 | 8.5 | 10.5 | 17.5 | 8.5 | 12.5 | 20.0 | 12.5 | 16.5 |
| 28 | 12.5 | 8.0 | 10.0 | 16.5 | 8.5 | 12.0 | 16.0 | 11.5 | 13.5 | 20.0 | 13.5 | 17.5 |
| 29 | --- | --- | --- | 16.0 | 9.0 | 12.5 | 17.0 | 12.5 | 14.5 | 19.5 | 14.5 | 17.5 |
| 30 | --- | --- | --- | 17.0 | 11.0 | 14.0 | 17.0 | 13.0 | 15.0 | 17.5 | 13.0 | 15.5 |
| 31 | --- | --- | --- | 15.0 | 11.5 | 13.5 | --- | --- | --- | 18.0 | 14.0 | 16.0 |
| MONTH | 14.5 | 3.0 | 9.2 | 17.0 | 5.5 | 11.1 | 20.5 | 8.5 | 14.5 | 21.5 | 9.0 | 15.3 |
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 18.0 | 14.0 | 16.0 | 26.0 | 19.5 | 22.5 | 27.5 | 19.5 | 23.5 | 25.0 | 18.0 | 21.5 |
| 2 | 17.5 | 13.5 | 15.5 | 25.0 | 19.0 | 22.0 | 28.0 | 20.5 | 24.0 | 24.0 | 18.0 | 21.5 |
| 3 | 18.0 | 12.5 | 15.5 | 25.0 | 18.0 | 21.0 | 26.0 | 22.0 | 24.0 | 25.0 | 18.5 | 21.5 |
| 4 | 17.0 | 13.5 | 15.5 | 25.5 | 18.0 | 21.5 | 24.0 | 21.0 | 22.0 | 24.5 | 18.5 | 21.5 |
| 5 | 19.0 | 13.0 | 16.0 | 25.5 | 18.5 | 22.0 | 27.0 | 19.5 | 23.0 | 22.0 | 18.5 | 20.0 |
| 6 | 18.5 | 14.0 | 16.0 | 26.5 | 18.5 | 22.5 | 26.5 | 20.5 | 23.5 | 22.0 | 19.5 | 20.5 |
| 7 | 20.5 | 13.0 | 17.0 | 27.0 | 19.0 | 23.0 | 26.5 | 19.5 | 23.0 | 24.5 | 19.0 | 21.5 |
| 8 | 21.0 | 14.5 | 18.0 | 23.0 | 19.5 | 21.5 | 24.0 | 19.0 | 22.0 | 21.5 | 16.5 | 19.5 |
| 9 | 20.5 | 16.5 | 19.0 | 26.5 | 17.5 | 21.5 | 24.0 | 19.0 | 21.5 | 18.5 | 14.0 | 16.5 |
| 10 | 21.0 | 16.0 | 18.5 | 28.0 | 19.0 | 23.5 | 25.5 | 19.5 | 22.5 | 17.5 | 16.0 | 17.0 |
| 11 | 20.0 | 15.5 | 17.5 | 28.0 | 20.5 | 24.5 | 27.0 | 20.0 | 23.5 | 17.5 | 15.5 | 16.5 |
| 12 | 21.5 | 15.0 | 18.5 | 28.0 | 21.0 | 24.5 | 26.0 | 20.5 | 23.0 | 17.0 | 15.0 | 16.0 |
| 13 | 21.0 | 16.0 | 19.0 | 26.0 | 20.5 | 23.0 | 26.5 | 20.0 | 23.0 | 19.0 | 13.0 | 16.0 |
| 14 | 22.5 | 16.0 | 19.0 | 27.0 | 18.5 | 22.5 | 28.5 | 20.5 | 24.0 | 20.0 | 13.5 | 16.5 |
| 15 | 23.5 | 17.0 | 20.0 | 27.5 | 20.0 | 24.0 | 26.5 | 21.5 | 24.0 | 19.0 | 14.5 | 16.5 |
| 16 | 24.0 | 18.0 | 21.0 | 27.5 | 20.5 | 24.0 | 26.0 | 20.5 | 23.0 | 17.5 | 13.0 | 16.0 |
| 17 | 25.0 | 19.0 | 22.0 | 28.0 | 21.0 | 24.5 | 22.5 | 19.0 | 20.0 | 15.5 | 12.5 | 14.0 |
| 18 | 27.0 | 18.5 | 22.5 | 29.0 | 22.0 | 25.5 | 25.5 | 16.5 | 20.5 | 17.0 | 11.5 | 14.0 |
| 19 | 24.0 | 19.5 | 22.0 | 26.5 | 21.5 | 24.0 | 26.0 | 19.0 | 22.5 | 17.5 | 12.5 | 15.0 |
| 20 | 22.5 | 19.0 | 20.5 | 28.5 | 21.0 | 25.0 | 26.5 | 20.0 | 23.0 | 20.0 | 13.5 | 16.5 |
| 21 | 20.5 | 16.5 | 18.5 | 29.0 | 22.0 | 25.5 | 25.0 | 20.0 | 22.5 | 19.0 | 13.5 | 16.5 |
| 22 | 17.5 | 15.0 | 16.0 | 28.5 | 21.0 | 25.0 | 24.5 | 21.5 | 22.5 | 20.0 | 13.5 | 16.5 |
| 23 | 18.5 | 14.5 | 16.5 | 28.5 | 21.5 | 25.0 | 25.0 | 19.0 | 22.0 | 20.0 | 14.0 | 17.0 |
| 24 | 18.0 | 15.0 | 16.5 | 28.5 | 22.5 | 25.5 | 25.0 | 19.0 | 21.5 | 20.5 | 14.0 | 17.5 |
| 25 | 20.5 | 14.0 | 17.0 | 25.5 | 22.5 | 24.0 | 26.5 | 18.5 | 22.5 | 20.0 | 15.0 | 17.5 |
| 26 | 23.5 | 16.0 | 19.5 | 27.0 | 22.0 | 24.0 | 25.5 | 18.0 | 22.0 | 20.5 | 15.5 | 18.0 |
| 27 | 25.0 | 17.5 | 21.5 | 28.5 | 22.0 | 25.0 | 22.5 | 20.0 | 21.0 | 21.5 | 15.0 | 18.0 |
| 28 | 25.5 | 20.0 | 22.5 | 28.0 | 21.5 | 25.0 | 23.5 | 18.5 | 21.0 | 21.5 | 15.0 | 18.5 |
| 29 | 25.5 | 19.0 | 22.5 | 28.0 | 20.0 | 24.0 | 21.0 | 18.0 | 19.5 | 21.0 | 15.5 | 18.0 |
| 30 | 26.0 | 19.5 | 23.0 | 27.0 | 20.0 | 23.5 | 22.5 | 18.0 | 20.0 | 20.5 | 14.5 | 17.5 |
| 31 | --- | --- | --- | 25.0 | 21.0 | 23.5 | 25.0 | 17.5 | 21.0 | --- | --- | --- |
| MONTH | 27.0 | 12.5 | 18.8 | 29.0 | 17.5 | 23.6 | 28.5 | 16.5 | 22.3 | 25.0 | 11.5 | 17.8 |
| YEAR | 29.0 | 3.0 | 14.7 | | | | | | | | | |

## 06037100 GIBBON RIVER AT MADISON JUNCTION, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44° 38'26", long 110° 51'38" , Yellowstone National Park. Hydrologic Unit 10020007, on left bank 40 ft downstream from highway, 0.4 mi south of Madison Junction, 14 mi east of West Yellowstone, and at river mile 0.2.

DRAINAGE AREA.--126 $mi^2$.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 2001 to September 2001, October 2002 to September 2003.

GAGE.--Water-stage recorder. Datum of gage is 6,800 ft above NGVD of 1929. U.S. Geological Survey data collection platform with satellite telemetry at station.

REMARKS.--Records good. No regulation or diversions upstream from station. Station operated and records provided by the Montana District.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 103 | 89 | 92 | 94 | 115 | 88 | 101 | 201 | 494 | 141 | 101 | 91 |
| 2 | 101 | 89 | 94 | 93 | 109 | 85 | 109 | 187 | 387 | 137 | 99 | 90 |
| 3 | 102 | 86 | 94 | 95 | 97 | 89 | 105 | 202 | 326 | 134 | 99 | 89 |
| 4 | 102 | 89 | 94 | 95 | 98 | 89 | 101 | 227 | 288 | 133 | 109 | 89 |
| 5 | 116 | 88 | 93 | 97 | 93 | 88 | 95 | 229 | 264 | 130 | 106 | 90 |
| 6 | 107 | 88 | 95 | 90 | 92 | 91 | 97 | 217 | 250 | 128 | 102 | 97 |
| 7 | 101 | 91 | 93 | 90 | e90 | 92 | 92 | 197 | 238 | 126 | 98 | 96 |
| 8 | 98 | 94 | 87 | e88 | 92 | 92 | 91 | 194 | 224 | 124 | 96 | 101 |
| 9 | 96 | 95 | 87 | e86 | 94 | 89 | 96 | 183 | 217 | 122 | 99 | 98 |
| 10 | 95 | 94 | 88 | e85 | 95 | 92 | 110 | 173 | 210 | 118 | 100 | 100 |
| 11 | 102 | 92 | 92 | 91 | 93 | 93 | 127 | 170 | 201 | 117 | 98 | 99 |
| 12 | 98 | 92 | 93 | 94 | 91 | 93 | 148 | 182 | 193 | 115 | 97 | 97 |
| 13 | 96 | 94 | 94 | 94 | 92 | 98 | 167 | 211 | 189 | 112 | 96 | 95 |
| 14 | 98 | 93 | 94 | 97 | 97 | 107 | 179 | 234 | 192 | 109 | 94 | 94 |
| 15 | 97 | 92 | 95 | 98 | 95 | 104 | 196 | 294 | 185 | 108 | 95 | 93 |
| 16 | 98 | 93 | 95 | 90 | 96 | 105 | 178 | 360 | 184 | 107 | 98 | 94 |
| 17 | 97 | 93 | 97 | 92 | 95 | 99 | 161 | 428 | 179 | 105 | 96 | 94 |
| 18 | 96 | 89 | 90 | 91 | 93 | 95 | 155 | 441 | 182 | 104 | 98 | 92 |
| 19 | 93 | 93 | 89 | 93 | 90 | 93 | 142 | 330 | 191 | 104 | 95 | 92 |
| 20 | 93 | 91 | 92 | 95 | 90 | 92 | 137 | 292 | 182 | 105 | 94 | 92 |
| 21 | 93 | 94 | 95 | 96 | 97 | 92 | 155 | 295 | 180 | 103 | 93 | 91 |
| 22 | 93 | 95 | 94 | 96 | 97 | 92 | 179 | 319 | 183 | 102 | 94 | 90 |
| 23 | 93 | 103 | 90 | 98 | 92 | 101 | 226 | 390 | 197 | 101 | 94 | 90 |
| 24 | 96 | 96 | 87 | 94 | e82 | 92 | 204 | 453 | 177 | 102 | 92 | 89 |
| 25 | 93 | 89 | e85 | 94 | e85 | 92 | 209 | 503 | 177 | 106 | 91 | 89 |
| 26 | 91 | 93 | 90 | 95 | 87 | 97 | 240 | 504 | 168 | 111 | 91 | 88 |
| 27 | 91 | 94 | 94 | 101 | 87 | 96 | 202 | 506 | 162 | 112 | 91 | 88 |
| 28 | 93 | 96 | 96 | 101 | 87 | 90 | 192 | 496 | 156 | 106 | 93 | 88 |
| 29 | 91 | 97 | 98 | 95 | --- | 89 | 188 | 469 | 152 | 102 | 93 | 88 |
| 30 | 88 | 95 | 95 | 100 | --- | 91 | 185 | 441 | 147 | 100 | 96 | 87 |
| 31 | 89 | --- | 96 | 101 | --- | 95 | --- | 432 | --- | 100 | 94 | --- |
| TOTAL | 3,000 | 2,777 | 2,868 | 2,919 | 2,621 | 2,901 | 4,567 | 9,760 | 6,475 | 3,524 | 2,992 | 2,771 |
| MEAN | 96.8 | 92.6 | 92.5 | 94.2 | 93.6 | 93.6 | 152 | 315 | 216 | 114 | 96.5 | 92.4 |
| MAX | 116 | 103 | 98 | 101 | 115 | 107 | 240 | 506 | 494 | 141 | 109 | 101 |
| MIN | 88 | 86 | 85 | 85 | 82 | 85 | 91 | 170 | 147 | 100 | 91 | 87 |
| AC-FT | 5,950 | 5,510 | 5,690 | 5,790 | 5,200 | 5,750 | 9,060 | 19,360 | 12,840 | 6,990 | 5,930 | 5,500 |

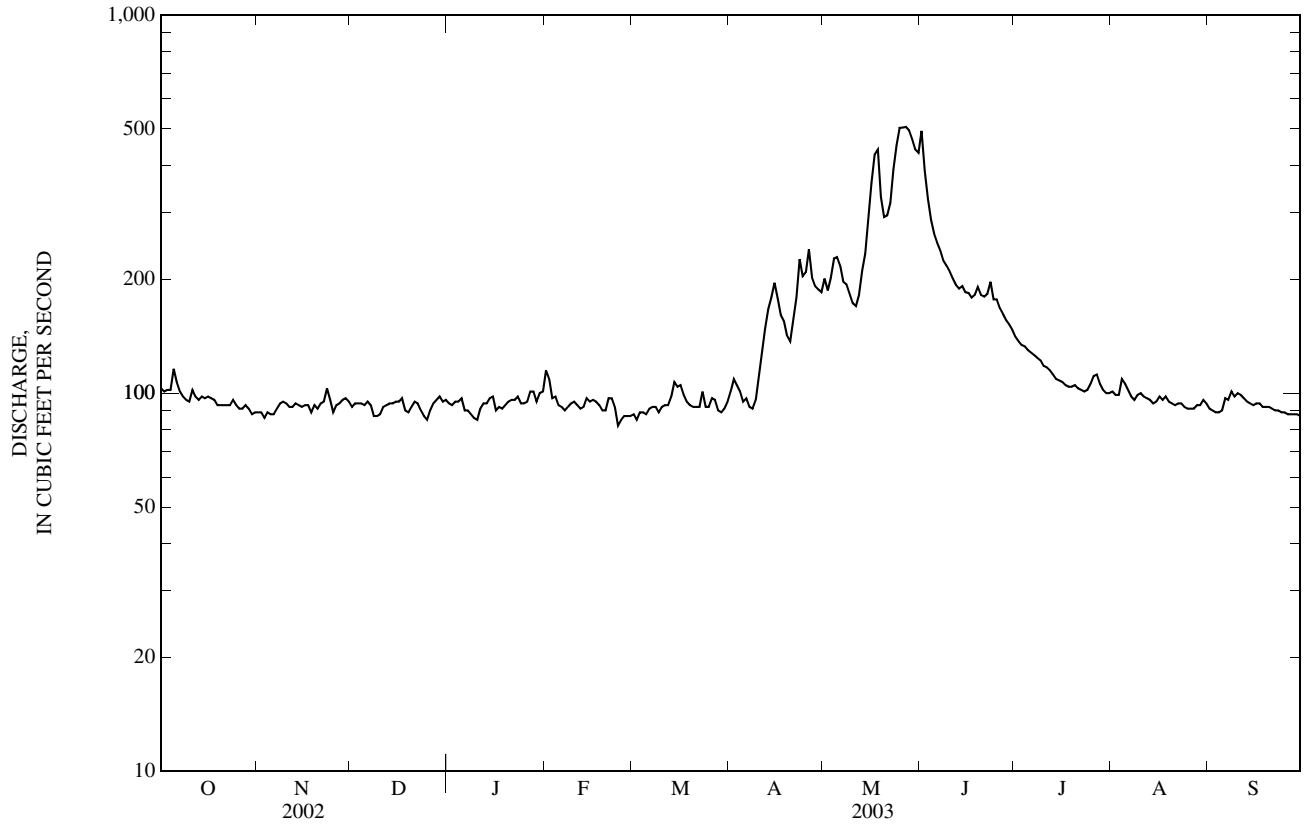
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)*

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MEAN | 96.8 | 92.6 | 92.5 | 94.2 | 93.6 | 93.6 | 141 | 280 | 176 | 111 | 92.1 | 87.5 |
| MAX | 96.8 | 92.6 | 92.5 | 94.2 | 93.6 | 93.6 | 152 | 315 | 216 | 114 | 96.5 | 92.4 |
| (WY) | (2003) | (2003) | (2003) | (2003) | (2003) | (2003) | (2003) | (2003) | (2003) | (2003) | (2003) | (2003) |
| MIN | 96.8 | 92.6 | 92.5 | 94.2 | 93.6 | 93.6 | 130 | 246 | 137 | 109 | 87.7 | 82.6 |
| (WY) | (2003) | (2003) | (2003) | (2003) | (2003) | (2003) | (2001) | (2001) | (2001) | (2001) | (2001) | (2001) |

06037100 GIBBON RIVER AT MADISON JUNCTION, YELLOWSTONE NATIONAL PARK—Continued

| SUMMARY STATISTICS | FOR 2003 WATER YEAR* | | WATER YEARS 2001 - 2003* | |
|---|---|---|---|---|
| ANNUAL TOTAL | 47,175 | | -- | |
| ANNUAL MEAN | 129 | | 129 | |
| HIGHEST ANNUAL MEAN | -- | | 129 | 2003 |
| LOWEST ANNUAL MEAN | -- | | 129 | 2003 |
| HIGHEST DAILY MEAN | 506 | May 27 | 584 | May 16, 2001 |
| LOWEST DAILY MEAN | 82 | Feb 24 | 79 | Sep 4, 2001 |
| ANNUAL SEVEN-DAY MINIMUM | 86 | Feb 24 | 81 | Sep 21, 2001 |
| MAXIMUM PEAK FLOW | 555 [a] | May 25 | 674 | May 16, 2001 |
| MAXIMUM PEAK STAGE | 5.58[b] | Feb 25 | 5.93 | May 16, 2001 |
| ANNUAL RUNOFF (AC-FT) | 93,570 | | 93,630 | |
| 10 PERCENT EXCEEDS | 203 | | 203 | |
| 50 PERCENT EXCEEDS | 96 | | 96 | |
| 90 PERCENT EXCEEDS | 89 | | 89 | |

* For period of operation.
a Gage height, 5.35 ft.
b Backwater from ice.
e Estimated.



06037100 GIBBON RIVER AT MADISON JUNCTION, YELLOWSTONE NATIONAL PARK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2002 to September 2003.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 2002 to September 2003.

INSTRUMENTATION.--Temperature recorder installed September 19, 2002.

REMARKS.--Daily temperature records good. Unpublished records of instantaneous water temperature and specific conductance are available in files of Montana District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 25.5° C, July 21, 2003; minimum, 0.0° C, several days during winter months.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 25.5° C, July 21; minimum, 0.0° C, November through February.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 9.0 | 7.0 | 8.0 | 4.0 | 0.5 | 2.5 | 6.5 | 4.5 | 5.5 | 5.5 | 3.0 | 4.5 |
| 2 | 12.0 | 5.5 | 8.5 | 5.5 | 1.0 | 3.0 | 7.5 | 6.0 | 7.0 | 5.5 | 4.5 | 5.0 |
| 3 | 10.0 | 7.0 | 9.0 | 4.5 | 0.0 | 2.5 | 7.5 | 6.5 | 7.0 | 6.5 | 5.0 | 6.0 |
| 4 | 11.0 | 9.0 | 10.0 | 5.5 | 1.5 | 3.5 | 8.5 | 7.0 | 7.5 | 7.0 | 4.5 | 6.0 |
| 5 | 10.5 | 9.5 | 10.0 | 6.0 | 1.0 | 3.5 | 8.0 | 6.5 | 7.0 | 7.5 | 5.0 | 6.5 |
| 6 | 13.0 | 9.0 | 10.5 | 7.0 | 3.0 | 5.0 | 8.0 | 6.0 | 7.0 | 5.0 | 2.5 | 4.0 |
| 7 | 14.0 | 8.0 | 11.0 | 7.0 | 3.0 | 5.0 | 7.0 | 4.5 | 6.0 | 4.5 | 2.0 | 3.0 |
| 8 | 14.0 | 8.5 | 11.0 | 6.5 | 4.5 | 5.5 | 4.5 | 2.0 | 3.5 | 3.5 | 0.5 | 2.0 |
| 9 | 13.5 | 8.5 | 11.0 | 7.0 | 5.5 | 6.0 | 4.0 | 1.0 | 3.0 | 3.0 | 0.5 | 1.5 |
| 10 | 12.0 | 8.0 | 10.0 | 7.5 | 5.5 | 6.5 | 4.5 | 1.0 | 3.0 | 3.0 | 0.0 | 1.0 |
| 11 | 10.5 | 8.0 | 9.0 | 6.5 | 5.0 | 6.0 | 5.0 | 3.5 | 4.5 | 6.0 | 3.0 | 4.5 |
| 12 | 10.5 | 5.0 | 7.5 | 6.5 | 5.5 | 6.0 | 6.0 | 4.0 | 5.0 | 6.5 | 5.5 | 6.0 |
| 13 | 10.5 | 5.0 | 8.0 | 8.0 | 6.0 | 7.0 | 6.5 | 6.0 | 6.5 | 7.0 | 5.5 | 6.5 |
| 14 | 11.0 | 5.5 | 8.0 | 7.0 | 5.0 | 6.0 | 8.0 | 6.5 | 7.0 | 8.0 | 6.5 | 7.0 |
| 15 | 11.5 | 6.0 | 9.0 | 7.0 | 4.5 | 5.5 | 8.0 | 6.0 | 7.0 | 7.0 | 3.5 | 5.5 |
| 16 | 12.0 | 7.0 | 9.0 | 6.5 | 3.5 | 5.0 | 6.0 | 4.5 | 5.5 | 5.5 | 3.0 | 4.0 |
| 17 | 12.0 | 6.5 | 9.0 | 6.0 | 3.5 | 5.0 | 6.5 | 4.5 | 6.0 | 5.0 | 2.5 | 4.0 |
| 18 | 12.0 | 6.5 | 9.0 | 5.5 | 3.0 | 4.0 | 4.5 | 2.0 | 3.0 | 4.0 | 0.5 | 2.5 |
| 19 | 11.5 | 6.0 | 8.5 | 7.0 | 4.5 | 5.5 | 3.5 | 1.5 | 2.5 | 7.0 | 4.0 | 5.0 |
| 20 | 12.0 | 7.0 | 9.5 | 8.5 | 7.0 | 7.5 | 4.0 | 1.5 | 2.5 | 6.0 | 3.5 | 5.0 |
| 21 | 12.0 | 8.5 | 10.0 | 10.5 | 8.5 | 9.0 | 4.5 | 2.5 | 4.0 | 6.5 | 5.0 | 6.0 |
| 22 | 10.5 | 7.0 | 9.0 | 10.0 | 7.0 | 8.5 | 5.5 | 4.0 | 4.5 | 6.5 | 5.0 | 6.0 |
| 23 | 9.5 | 6.0 | 7.5 | 9.0 | 4.5 | 7.0 | 4.0 | 1.0 | 2.0 | 7.0 | 4.5 | 6.0 |
| 24 | 10.0 | 6.5 | 8.5 | 5.0 | 2.0 | 3.5 | 1.0 | 0.0 | 0.5 | 6.5 | 3.0 | 5.0 |
| 25 | 9.5 | 5.0 | 7.0 | 3.0 | 0.0 | 1.5 | 1.0 | 0.0 | 0.5 | 7.5 | 5.5 | 6.5 |
| 26 | 9.0 | 4.0 | 6.5 | 3.0 | 0.0 | 2.0 | 3.5 | 0.5 | 2.0 | 7.5 | 6.5 | 7.0 |
| 27 | 9.0 | 4.5 | 6.5 | 6.0 | 2.5 | 4.0 | 4.5 | 3.5 | 4.0 | 7.5 | 5.5 | 7.0 |
| 28 | 8.5 | 6.5 | 7.0 | 8.0 | 5.5 | 7.0 | 6.5 | 4.5 | 5.5 | 7.0 | 4.5 | 5.5 |
| 29 | 7.0 | 3.5 | 5.5 | 8.5 | 7.0 | 7.5 | 6.0 | 4.5 | 5.5 | 7.0 | 5.5 | 6.5 |
| 30 | 4.0 | 2.0 | 3.0 | 8.0 | 6.0 | 7.0 | 4.5 | 3.5 | 4.0 | 7.0 | 5.5 | 6.0 |
| 31 | 4.5 | 1.0 | 2.5 | --- | --- | --- | 6.0 | 4.5 | 5.0 | 7.5 | 5.5 | 7.0 |
| MONTH | 14.0 | 1.0 | 8.3 | 10.5 | 0.0 | 5.2 | 8.5 | 0.0 | 4.6 | 8.0 | 0.0 | 5.1 |

06037100 GIBBON RIVER AT MADISON JUNCTION, YELLOWSTONE NATIONAL PARK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 8.0 | 6.5 | 7.5 | 8.0 | 3.5 | 5.0 | 10.5 | 8.0 | 9.5 | 10.5 | 7.0 | 8.5 |
| 2 | 6.5 | 3.5 | 5.5 | 5.0 | 0.5 | 3.0 | 12.5 | 7.0 | 9.5 | 12.5 | 7.5 | 10.0 |
| 3 | 4.5 | 1.5 | 3.0 | 6.5 | 4.0 | 5.0 | 8.5 | 5.0 | 6.5 | 12.5 | 9.0 | 10.5 |
| 4 | 5.0 | 2.5 | 3.5 | 7.0 | 3.5 | 5.0 | 10.0 | 4.5 | 7.0 | 11.5 | 8.0 | 10.0 |
| 5 | 4.0 | 1.0 | 2.5 | 4.5 | 2.0 | 3.0 | 11.5 | 3.5 | 7.5 | 12.0 | 7.0 | 9.5 |
| 6 | 2.0 | 0.0 | 1.0 | 4.0 | 2.5 | 3.5 | 10.5 | 6.5 | 8.0 | 11.5 | 6.5 | 9.0 |
| 7 | 2.5 | 0.0 | 1.0 | 4.0 | 2.5 | 3.0 | 13.5 | 6.0 | 9.0 | 14.5 | 8.0 | 11.0 |
| 8 | 4.5 | 2.0 | 3.0 | 6.0 | 2.5 | 4.5 | 14.5 | 6.0 | 10.0 | 14.0 | 9.5 | 11.5 |
| 9 | 4.5 | 2.5 | 3.5 | 7.5 | 5.0 | 6.0 | 15.5 | 7.0 | 11.0 | 11.0 | 7.5 | 9.5 |
| 10 | 5.0 | 2.5 | 4.0 | 9.5 | 5.5 | 7.5 | 16.0 | 8.5 | 12.0 | 12.5 | 8.0 | 10.0 |
| 11 | 6.5 | 3.0 | 4.5 | 9.5 | 7.0 | 7.5 | 16.0 | 9.0 | 12.5 | 12.0 | 8.5 | 10.0 |
| 12 | 6.0 | 1.0 | 3.5 | 10.0 | 6.5 | 8.0 | 15.5 | 8.5 | 12.0 | 11.5 | 9.5 | 10.5 |
| 13 | 6.5 | 2.0 | 4.5 | 13.0 | 7.0 | 9.5 | 14.5 | 8.5 | 11.0 | 14.0 | 8.5 | 11.0 |
| 14 | 9.0 | 6.5 | 7.5 | 10.5 | 7.5 | 9.0 | 12.0 | 8.5 | 10.0 | 16.0 | 8.5 | 12.0 |
| 15 | 9.0 | 7.0 | 8.0 | 11.5 | 6.5 | 9.0 | 10.5 | 8.0 | 9.5 | 13.0 | 9.0 | 11.0 |
| 16 | 7.5 | 4.5 | 6.5 | 12.0 | 8.0 | 9.5 | 12.0 | 6.5 | 9.0 | 12.5 | 7.5 | 10.0 |
| 17 | 7.0 | 3.5 | 5.0 | 9.5 | 6.0 | 8.0 | 10.5 | 7.0 | 8.5 | 11.5 | 6.0 | 9.0 |
| 18 | 7.0 | 3.0 | 5.0 | 8.0 | 6.0 | 7.0 | 11.0 | 8.0 | 9.0 | 10.0 | 6.5 | 7.5 |
| 19 | 6.5 | 2.5 | 4.5 | 12.0 | 5.0 | 8.0 | 13.5 | 7.0 | 10.0 | 11.5 | 4.0 | 7.5 |
| 20 | 6.5 | 2.0 | 4.0 | 11.0 | 5.0 | 8.0 | 15.5 | 7.5 | 11.0 | 13.0 | 7.0 | 10.0 |
| 21 | 5.5 | 4.5 | 5.0 | 10.0 | 7.0 | 8.5 | 15.5 | 8.0 | 11.5 | 12.0 | 9.5 | 11.0 |
| 22 | 6.5 | 4.5 | 5.0 | 10.0 | 7.5 | 9.0 | 13.0 | 9.0 | 11.0 | 15.0 | 9.5 | 12.5 |
| 23 | 4.5 | 0.5 | 3.5 | 9.0 | 6.0 | 7.5 | 10.5 | 8.0 | 9.5 | 15.0 | 10.0 | 13.0 |
| 24 | 0.5 | 0.0 | 0.0 | 9.0 | 4.0 | 6.5 | 11.5 | 8.5 | 9.5 | 16.5 | 11.0 | 14.0 |
| 25 | 2.0 | 0.0 | 0.5 | 8.5 | 5.5 | 6.5 | 13.0 | 8.0 | 10.0 | 15.5 | 11.0 | 13.5 |
| 26 | 5.5 | 0.0 | 2.5 | 8.5 | 4.5 | 6.5 | 10.0 | 6.0 | 7.5 | 14.5 | 11.0 | 13.0 |
| 27 | 7.5 | 2.5 | 5.0 | 8.5 | 4.5 | 6.5 | 12.0 | 4.5 | 8.0 | 16.5 | 10.5 | 13.5 |
| 28 | 7.0 | 2.0 | 4.5 | 12.0 | 4.0 | 7.5 | 10.5 | 7.0 | 8.5 | 17.0 | 12.0 | 15.0 |
| 29 | --- | --- | --- | 11.5 | 4.0 | 8.0 | 12.5 | 7.5 | 9.5 | 16.5 | 13.5 | 15.5 |
| 30 | --- | --- | --- | 12.5 | 6.5 | 9.5 | 12.5 | 8.0 | 10.0 | 15.5 | 12.5 | 14.5 |
| 31 | --- | --- | --- | 11.5 | 7.5 | 9.5 | --- | --- | --- | 15.0 | 13.0 | 14.0 |
| MONTH | 9.0 | 0.0 | 4.1 | 13.0 | 0.5 | 6.9 | 16.0 | 3.5 | 9.6 | 17.0 | 4.0 | 11.2 |
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 16.0 | 12.0 | 14.0 | 22.5 | 14.5 | 18.0 | 23.5 | 15.0 | 19.0 | 21.0 | 13.0 | 17.0 |
| 2 | 15.5 | 11.5 | 13.5 | 21.5 | 14.0 | 17.5 | 24.5 | 15.5 | 19.5 | 20.5 | 13.5 | 17.0 |
| 3 | 16.0 | 11.0 | 13.5 | 21.5 | 13.0 | 17.0 | 22.5 | 18.0 | 20.0 | 21.5 | 13.5 | 17.5 |
| 4 | 16.5 | 11.5 | 13.5 | 21.0 | 13.5 | 17.0 | 21.0 | 17.0 | 18.5 | 21.0 | 13.5 | 17.5 |
| 5 | 17.0 | 10.5 | 13.5 | 22.0 | 14.0 | 17.5 | 23.0 | 15.5 | 19.0 | 18.0 | 13.5 | 15.5 |
| 6 | 15.0 | 11.0 | 13.0 | 22.5 | 14.0 | 18.0 | 23.5 | 15.5 | 19.5 | 18.5 | 14.5 | 16.0 |
| 7 | 17.5 | 10.0 | 13.5 | 23.0 | 14.5 | 18.5 | 23.0 | 15.0 | 19.0 | 21.0 | 14.5 | 17.0 |
| 8 | 18.5 | 11.5 | 15.0 | 20.5 | 14.5 | 17.5 | 20.5 | 14.0 | 17.5 | 17.5 | 12.5 | 15.0 |
| 9 | 18.5 | 13.5 | 16.0 | 22.5 | 13.5 | 18.0 | 20.5 | 14.5 | 17.5 | 15.5 | 9.5 | 12.5 |
| 10 | 18.5 | 13.0 | 16.0 | 24.0 | 14.0 | 19.0 | 21.0 | 14.5 | 18.0 | 14.0 | 12.0 | 13.0 |
| 11 | 18.5 | 12.5 | 15.5 | 24.0 | 15.5 | 19.5 | 23.0 | 16.0 | 19.5 | 13.5 | 11.5 | 12.5 |
| 12 | 20.0 | 11.5 | 15.5 | 24.5 | 16.0 | 20.0 | 22.0 | 16.0 | 19.0 | 14.5 | 11.5 | 12.5 |
| 13 | 18.5 | 13.0 | 15.5 | 23.0 | 15.5 | 19.0 | 22.5 | 15.5 | 19.0 | 16.0 | 8.5 | 12.0 |
| 14 | 19.5 | 12.0 | 15.5 | 23.5 | 14.0 | 18.5 | 23.5 | 15.5 | 19.5 | 15.5 | 8.5 | 12.0 |
| 15 | 20.5 | 13.5 | 16.5 | 23.5 | 15.0 | 19.0 | 22.0 | 16.5 | 19.5 | 15.0 | 9.5 | 12.0 |
| 16 | 21.0 | 14.0 | 17.5 | 23.0 | 15.5 | 19.0 | 23.0 | 15.5 | 19.0 | 13.5 | 10.0 | 12.0 |
| 17 | 21.0 | 15.0 | 18.0 | 24.0 | 15.5 | 20.0 | 19.5 | 14.5 | 16.0 | 12.0 | 8.5 | 10.0 |
| 18 | 21.0 | 14.5 | 18.0 | 25.0 | 17.5 | 21.0 | 21.5 | 12.0 | 16.5 | 13.0 | 7.0 | 9.5 |
| 19 | 20.5 | 15.0 | 17.5 | 23.0 | 16.5 | 20.0 | 22.0 | 14.0 | 18.0 | 13.5 | 7.5 | 10.5 |
| 20 | 19.0 | 14.5 | 16.5 | 25.0 | 16.5 | 20.5 | 23.0 | 15.0 | 18.5 | 15.0 | 8.5 | 11.5 |
| 21 | 16.5 | 12.5 | 14.5 | 25.5 | 17.0 | 21.0 | 21.0 | 15.0 | 18.0 | 15.0 | 8.5 | 11.5 |
| 22 | 12.5 | 10.5 | 11.5 | 25.0 | 16.5 | 20.5 | 20.5 | 17.0 | 18.5 | 16.0 | 8.5 | 12.0 |
| 23 | 14.0 | 9.0 | 11.5 | 24.5 | 16.5 | 20.5 | 21.5 | 15.5 | 18.5 | 15.5 | 9.5 | 12.5 |
| 24 | 15.5 | 10.5 | 12.5 | 25.0 | 17.5 | 21.0 | 21.0 | 14.0 | 17.5 | 16.0 | 9.0 | 12.5 |
| 25 | 16.5 | 10.0 | 13.0 | 22.5 | 19.0 | 20.5 | 22.5 | 14.5 | 18.5 | 16.0 | 10.0 | 13.0 |
| 26 | 19.5 | 11.0 | 15.0 | 23.0 | 17.5 | 20.0 | 22.0 | 13.5 | 17.5 | 17.0 | 10.5 | 13.5 |
| 27 | 21.0 | 12.5 | 16.5 | 25.0 | 17.5 | 21.0 | 19.0 | 15.5 | 17.0 | 17.0 | 10.0 | 13.5 |
| 28 | 21.0 | 14.5 | 18.0 | 24.5 | 17.0 | 20.5 | 19.5 | 14.0 | 16.5 | 17.0 | 10.5 | 13.5 |
| 29 | 21.5 | 14.0 | 18.0 | 24.5 | 15.5 | 20.0 | 17.0 | 13.5 | 15.5 | 17.0 | 11.0 | 13.5 |
| 30 | 22.5 | 14.5 | 18.5 | 24.0 | 15.5 | 19.5 | 18.5 | 14.0 | 16.0 | 16.0 | 9.5 | 12.5 |
| 31 | --- | --- | --- | 21.0 | 17.0 | 19.0 | 20.5 | 12.0 | 16.5 | --- | --- | --- |
| MONTH | 22.5 | 9.0 | 15.2 | 25.5 | 13.0 | 19.3 | 24.5 | 12.0 | 18.1 | 21.5 | 7.0 | 13.3 |
| YEAR | 25.5 | 0.0 | 10.1 | | | | | | | | | |

## 06037500 MADISON RIVER NEAR WEST YELLOWSTONE, MT

LOCATION.--Lat 44° 39'25", long 111° 04'03", in NE1/4NW1/4SW1/4 sec.36, T.13 S., R.5 E., Gallatin County, Hydrologic Unit 10020007, Yellowstone National Park, on left bank 0.7 mi downstream of Montana-Wyoming stateline, 1.5 mi east of West Yellowstone, 16.4 mi downstream from Gibbon River, and at river mile 132.7.

DRAINAGE AREA.--420 $mi^2$.

PERIOD OF RECORD.--June 1913 to December 1917, July 1918 to October 1921, June 1922 to September 1973, August 1983 to September 1986, October 1988 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 6,650 ft above NGVD of 1929, from topographic map. Prior to October 20, 1918, nonrecording gage, and October 20, 1918 to June 29, 1930, nonrecording gage or water-stage recorder at sites 2.5 mi upstream at different datums. U.S. Geological Survey data collection platform with satellite telemetry at station. Supplementary nonrecording gage at site 0.3 mi downstream at different datum used at time during 1927-30.

REMARKS.--Records good. No regulation or diversions upstream from station. Station operated and record provided by the Montana District.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 381 | 379 | 387 | 382 | 450 | 373 | 422 | 544 | 1,100 | 415 | 352 | 342 |
| 2 | 384 | 382 | 387 | 376 | 434 | 366 | 435 | 527 | 969 | 410 | 348 | 339 |
| 3 | 385 | 373 | 387 | 381 | 395 | 373 | 424 | 535 | 844 | 405 | 348 | 342 |
| 4 | 386 | 384 | 387 | 382 | 393 | 375 | 410 | 608 | 770 | 401 | 363 | 341 |
| 5 | 418 | 381 | 387 | 388 | 381 | 374 | 392 | 601 | 715 | 395 | 369 | 341 |
| 6 | 411 | 381 | 387 | 378 | 376 | 370 | 390 | 576 | 685 | 391 | 357 | 360 |
| 7 | 390 | 384 | 387 | 373 | e365 | 380 | 380 | 555 | 659 | 388 | 350 | 364 |
| 8 | 387 | 391 | 376 | 373 | 383 | 383 | 378 | 524 | 637 | 387 | 347 | 360 |
| 9 | 381 | 393 | 372 | 373 | 378 | 383 | 390 | 510 | 637 | 385 | 351 | 363 |
| 10 | 380 | 394 | 372 | e365 | 375 | 383 | 421 | 492 | 632 | 375 | 352 | 364 |
| 11 | 391 | 392 | 376 | 377 | 379 | 387 | 454 | 482 | 617 | 375 | 352 | 367 |
| 12 | 389 | 387 | 380 | 375 | 374 | 390 | 493 | 502 | 604 | 372 | 347 | 358 |
| 13 | 386 | 392 | 381 | 377 | 374 | 404 | 526 | 575 | 582 | 369 | 345 | 356 |
| 14 | 389 | 392 | 382 | 384 | 385 | 437 | 541 | 586 | 583 | 363 | 342 | 351 |
| 15 | 387 | 390 | 387 | 392 | 379 | 423 | 579 | 660 | 560 | 361 | 346 | 350 |
| 16 | 387 | 387 | 386 | 377 | 381 | 428 | 534 | 764 | 553 | 359 | 347 | 350 |
| 17 | 384 | 388 | 392 | 378 | 384 | 410 | 494 | 876 | 537 | 358 | 347 | 353 |
| 18 | 382 | 385 | 382 | 373 | 380 | 394 | 494 | 922 | 522 | 358 | 349 | 349 |
| 19 | 381 | 385 | 374 | 377 | 374 | 388 | 478 | 770 | 518 | 358 | 347 | 347 |
| 20 | 383 | 387 | 377 | 382 | 375 | 386 | 456 | 692 | 500 | 359 | 341 | 347 |
| 21 | 387 | 392 | 384 | 385 | 382 | 387 | 474 | 702 | 485 | 358 | 341 | 347 |
| 22 | 387 | 399 | 385 | 385 | 387 | 384 | 513 | 772 | 482 | 353 | 342 | 346 |
| 23 | 390 | 418 | 377 | 387 | 382 | 427 | 581 | 895 | 508 | 352 | 346 | 343 |
| 24 | 406 | 408 | e370 | 384 | e345 | 401 | 559 | 1,020 | 488 | 352 | 341 | 341 |
| 25 | 399 | 381 | e370 | 382 | e350 | 388 | 554 | 1,110 | 474 | 358 | 339 | 341 |
| 26 | 390 | 388 | e375 | 381 | e370 | 401 | 626 | 1,100 | 455 | 363 | 336 | 341 |
| 27 | 387 | 387 | 382 | 401 | 375 | 403 | 577 | 1,120 | 444 | 365 | 338 | 346 |
| 28 | 390 | 389 | 389 | 406 | 370 | 388 | 559 | 1,100 | 437 | 359 | 341 | 347 |
| 29 | 389 | 392 | 390 | 388 | --- | 382 | 564 | 1,090 | 436 | 353 | 341 | 347 |
| 30 | 386 | 390 | 383 | 392 | --- | 386 | 549 | 1,110 | 427 | 352 | 350 | 347 |
| 31 | 384 | --- | 385 | 399 | --- | 408 | --- | 1,040 | --- | 349 | 349 | --- |
| TOTAL | 12,057 | 11,671 | 11,836 | 11,853 | 10,676 | 12,162 | 14,647 | 23,360 | 17,860 | 11,498 | 10,764 | 10,490 |
| MEAN | 389 | 389 | 382 | 382 | 381 | 392 | 488 | 754 | 595 | 371 | 347 | 350 |
| MAX | 418 | 418 | 392 | 406 | 450 | 437 | 626 | 1,120 | 1,100 | 415 | 369 | 367 |
| MIN | 380 | 373 | 370 | 365 | 345 | 366 | 378 | 482 | 427 | 349 | 336 | 339 |
| AC-FT | 23,920 | 23,150 | 23,480 | 23,510 | 21,180 | 24,120 | 29,050 | 46,330 | 35,430 | 22,810 | 21,350 | 20,810 |

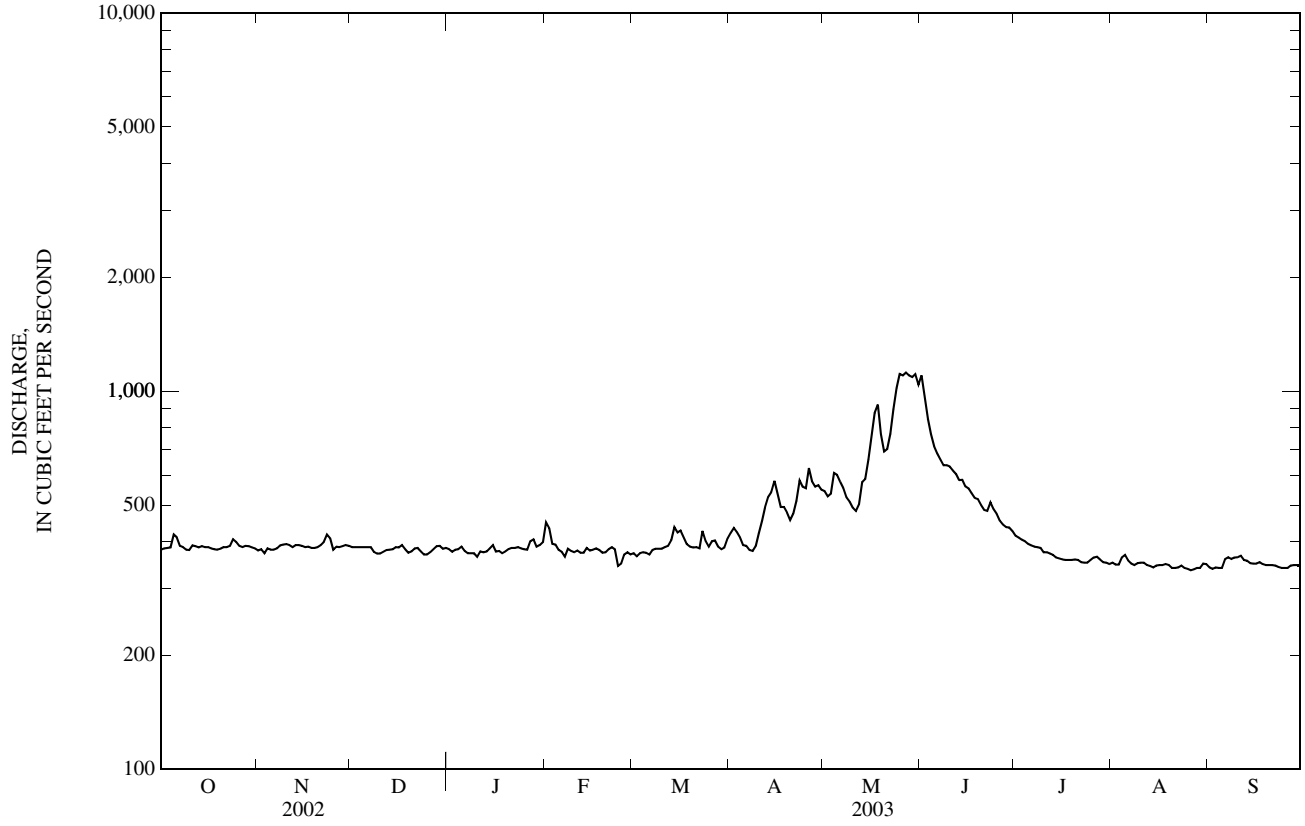
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2003, BY WATER YEAR (WY)*

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MEAN | 433 | 424 | 416 | 404 | 399 | 406 | 496 | 850 | 812 | 498 | 433 | 426 |
| MAX | 710 | 697 | 641 | 586 | 573 | 539 | 671 | 1,725 | 1,479 | 917 | 759 | 704 |
| (WY) | (1914) | (1914) | (1997) | (1997) | (1914) | (1917) | (1925) | (1997) | (1997) | (1913) | (1913) | (1913) |
| MIN | 297 | 297 | 304 | 304 | 303 | 313 | 369 | 388 | 341 | 282 | 273 | 282 |
| (WY) | (1935) | (1932) | (1932) | (1932) | (1932) | (1943) | (1941) | (1934) | (1931) | (1931) | (1934) | (1934) |

06037500 MADISON RIVER NEAR WEST YELLOWSTONE, MT—Continued

| SUMMARY STATISTICS | FOR 2002 CALENDAR YEAR | | FOR 2003 WATER YEAR | | WATER YEARS 1913 - 2003* | |
|---|---|---|---|---|---|---|
| ANNUAL TOTAL | 156,800 | | 158,874 | | -- | |
| ANNUAL MEAN | 430 | | 435 | | 499 | |
| HIGHEST ANNUAL MEAN | -- | | -- | | 789 | 1997 |
| LOWEST ANNUAL MEAN | -- | | -- | | 337 | 1934 |
| HIGHEST DAILY MEAN | 1,000 | May 21 | 1,120 | May 27 | 2,750 | May 18, 1996 |
| LOWEST DAILY MEAN | 348 | Feb 26 | 336 | Aug 26 | 245 | Jan 1, 1942 |
| ANNUAL SEVEN-DAY MINIMUM | 357 | Jan 15 | 340 | Aug 23 | 267 | Aug 6, 1931 |
| MAXIMUM PEAK FLOW | -- | | 1,230 | May 25 | 2,820 [a] | May 18, 1996 |
| MAXIMUM PEAK STAGE | -- | | 2.65 | May 25 | 10.00[b] | Jan 8, 1937 |
| ANNUAL RUNOFF (AC-FT) | 311,000 | | 315,100 | | 361,200 | |
| 10 PERCENT EXCEEDS | 583 | | 580 | | 741 | |
| 50 PERCENT EXCEEDS | 385 | | 385 | | 432 | |
| 90 PERCENT EXCEEDS | 363 | | 348 | | 339 | |

* For period of operation.
a Gage height, 3.78 ft.
b About, backwater from ice.
e Estimated.



## 06043500 GALLATIN RIVER NEAR GALLATIN GATEWAY, MT

LOCATION.--Lat 45° 29'51", long 111° 16'11" in SE$^{1}/_{4}$ SE$^{1}/_{4}$ SE$^{1}/_{4}$ sec.7, T.4 S., R.4 E., Gallatin County, Hydrologic Unit 10020008, on left bank 0.3 mi downstream from Spanish Creek, 7.3 mi south of Gallatin Gateway, and at river mile 47.7.

DRAINAGE AREA.--825 mi$^{2}$.

### WATER-DISCHARGE RECORD

PERIOD OF RECORD.--August 1889 to September 1894, June 1930 to September 1969, annual maximum, water years 1970-71, October 1971 to September 1981, October 1984 to current year. Monthly discharge only for some periods, published in WSP 1309. Published as West Gallatin River near Bozeman 1889-94.

REVISED RECORDS.--WSP 1389: 1892(M), 1893-94. WSP 1559: Drainage area. WDR MT-85-1 (M).

GAGE.--Water-stage recorder. Datum of gage is 5,167.67 ft above NGVD of 1929. Prior to October 20, 1932, nonrecording gages at several different sites and datums within 0.8 mi of present site. U.S. Geological Survey data collection platform with satellite telemetry at station.

REMARKS.--Records good. Diversions for irrigation of about 1,400 acres upstream from station. Station operated and record provided by the Montana District.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 369 | 230 | 282 | 245 | 287 | 246 | 316 | 575 | 5,390 | 1,210 | 493 | 358 |
| 2 | 362 | 257 | 298 | 242 | 287 | 233 | 320 | 562 | 4,380 | 1,150 | 478 | 351 |
| 3 | 361 | 264 | 300 | 247 | 272 | 225 | 307 | 563 | 3,650 | 1,080 | 476 | 348 |
| 4 | 364 | 264 | 295 | 250 | 255 | 240 | 270 | 590 | 3,260 | 1,020 | 523 | 345 |
| 5 | 361 | 277 | 289 | 253 | 259 | 237 | 269 | 636 | 2,760 | 975 | 486 | 343 |
| 6 | 354 | 307 | 283 | 251 | 233 | 237 | 278 | 625 | 2,610 | 938 | 468 | 355 |
| 7 | 348 | 301 | 266 | 233 | 213 | 241 | 264 | 601 | 2,280 | 906 | 450 | 378 |
| 8 | 348 | 319 | 257 | 211 | 254 | 244 | 268 | 591 | 2,300 | 879 | 438 | 364 |
| 9 | 345 | 324 | 249 | 217 | 249 | 247 | 285 | 580 | 2,740 | 839 | 440 | 366 |
| 10 | 339 | 317 | 266 | 197 | 247 | 256 | 329 | 570 | 2,960 | 795 | 454 | 361 |
| 11 | 340 | 312 | 269 | 196 | 243 | 264 | 373 | 553 | 2,890 | 766 | 430 | 371 |
| 12 | 330 | 300 | 270 | 207 | 230 | 271 | 432 | 569 | 2,740 | 744 | 419 | 362 |
| 13 | 328 | 314 | 268 | 233 | 233 | 280 | 509 | 672 | 2,610 | 723 | 411 | 374 |
| 14 | 339 | 310 | 287 | 243 | 244 | 337 | 557 | 748 | 2,630 | 698 | 403 | 362 |
| 15 | 333 | 306 | 290 | 254 | 257 | 328 | 566 | 958 | 2,450 | 681 | 401 | 350 |
| 16 | 340 | 292 | 277 | 244 | 258 | 320 | 487 | 1,200 | 2,290 | 664 | 443 | 363 |
| 17 | 336 | 300 | 281 | 219 | 259 | 293 | 446 | 1,220 | 2,320 | 638 | 422 | 397 |
| 18 | 328 | 294 | 259 | 231 | 253 | 278 | 447 | 1,240 | 2,270 | 621 | 420 | 371 |
| 19 | 321 | 295 | 229 | 224 | 248 | 267 | 413 | 1,060 | 2,230 | 602 | 404 | 360 |
| 20 | 332 | 309 | 233 | 243 | 240 | 262 | 397 | 944 | 2,160 | 590 | 397 | 354 |
| 21 | 331 | 303 | 241 | 252 | 248 | 272 | 431 | 914 | 2,100 | 573 | 388 | 349 |
| 22 | 334 | 300 | 241 | 257 | 262 | 273 | 503 | 1,020 | 1,790 | 556 | 388 | 343 |
| 23 | 323 | 309 | 245 | 261 | 245 | 307 | 597 | 1,460 | 1,570 | 541 | 381 | 334 |
| 24 | 319 | 284 | 196 | 263 | 214 | 274 | 638 | 2,090 | 1,420 | 550 | 373 | 332 |
| 25 | 304 | 243 | 153 | 255 | 202 | 272 | 696 | 2,930 | 1,300 | 560 | 374 | 328 |
| 26 | 299 | 244 | 165 | 264 | 233 | 280 | 745 | 3,930 | 1,220 | 742 | 366 | 325 |
| 27 | 296 | 294 | 214 | 280 | 243 | 269 | 629 | 4,120 | 1,200 | 656 | 370 | 321 |
| 28 | 341 | 302 | 243 | 274 | 244 | 265 | 589 | 4,460 | 1,240 | 579 | 380 | 322 |
| 29 | 321 | 303 | 252 | 267 | --- | 259 | 563 | 5,420 | 1,240 | 540 | 372 | 320 |
| 30 | 264 | 297 | 248 | 265 | --- | 268 | 563 | 5,860 | 1,220 | 520 | 370 | 317 |
| 31 | 239 | --- | 242 | 268 | --- | 289 | --- | 5,640 | --- | 502 | 362 | --- |
| TOTAL | 10,249 | 8,771 | 7,888 | 7,546 | 6,912 | 8,334 | 13,487 | 52,901 | 71,220 | 22,838 | 12,980 | 10,524 |
| MEAN | 331 | 292 | 254 | 243 | 247 | 269 | 450 | 1,706 | 2,374 | 737 | 419 | 351 |
| MAX | 369 | 324 | 300 | 280 | 287 | 337 | 745 | 5,860 | 5,390 | 1,210 | 523 | 397 |
| MIN | 239 | 230 | 153 | 196 | 202 | 225 | 264 | 553 | 1,200 | 502 | 362 | 317 |
| AC-FT | 20,330 | 17,400 | 15,650 | 14,970 | 13,710 | 16,530 | 26,750 | 104,900 | 141,300 | 45,300 | 25,750 | 20,870 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1889 - 2003, BY WATER YEAR (WY)*

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MEAN | 454 | 382 | 321 | 307 | 304 | 311 | 501 | 1,802 | 2,937 | 1,287 | 609 | 490 |
| MAX | 743 | 589 | 549 | 468 | 430 | 465 | 899 | 3,135 | 5,110 | 3,669 | 1,162 | 788 |
| (WY) | (1893) | (1960) | (1893) | (1893) | (1893) | (1960) | (1990) | (1976) | (1997) | (1975) | (1993) | (1968) |
| MIN | 238 | 247 | 214 | 200 | 220 | 206 | 263 | 873 | 643 | 345 | 269 | 233 |
| (WY) | (1932) | (1937) | (1935) | (1931) | (1935) | (1935) | (1937) | (1953) | (1934) | (1934) | (1934) | (1931) |

06043500 GALLATIN RIVER NEAR GALLATIN GATEWAY, MT—Continued

| SUMMARY STATISTICS | FOR 2002 CALENDAR YEAR | | FOR 2003 WATER YEAR | | WATER YEARS 1889 - 2003* | |
|---|---|---|---|---|---|---|
| ANNUAL TOTAL | 227,495 | | 233,650 | | -- | |
| ANNUAL MEAN | 623 | | 640 | | 811 | |
| HIGHEST ANNUAL MEAN | -- | | -- | | 1,184 | 1976 |
| LOWEST ANNUAL MEAN | -- | | -- | | 408 | 1934 |
| HIGHEST DAILY MEAN | 4,960 | Jun 2 | 5,860 | May 30 | 8,970 | Jun 17, 1974 |
| LOWEST DAILY MEAN | 153 | Dec 25 | 153 | Dec 25 | 153 | Dec 25, 2002 |
| ANNUAL SEVEN-DAY MINIMUM | 208 | Dec 21 | 208 | Dec 21 | 182 | Jan 18, 1931 |
| MAXIMUM PEAK FLOW | -- | | 6,710 | May 30 | 9,160 [a] | Jun 2, 1997 |
| MAXIMUM PEAK STAGE | -- | | 5.71 | May 30 | 7.38 | Jun 17, 1974 |
| ANNUAL RUNOFF (AC-FT) | 451,200 | | 463,400 | | 587,700 | |
| 10 PERCENT EXCEEDS | 1,740 | | 1,240 | | 2,040 | |
| 50 PERCENT EXCEEDS | 332 | | 334 | | 429 | |
| 90 PERCENT EXCEEDS | 226 | | 243 | | 268 | |

* For period of operation.
a Gage height, 6.71 ft.