

**06012500 RED ROCK RIVER BELOW LIMA RESERVOIR, NEAR MONIDA, MT**

Missouri Headwaters Basin  
Red Rock Subbasin

LOCATION.--Lat 44°39'21", long 112°22'17" referenced to North American Datum of 1983, in NE ¼ SE ¼ SE ¼ sec.31, T.13 S., R.6 W., Beaverhead County, MT, Hydrologic Unit 10020001, on right bank just downstream from Lima Reservoir, 7 mi northwest of Monida, and at river mile 2,542.1.

DRAINAGE AREA.--570 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--January 1911 to December 1918, April 1919, May 1925 to October 1933, April 1934 to September 1935, May 1936 to October 1938, May 1939 to September 1969, seasonal records only June 1974 to September 1982 and April 1985 to current year. Monthly discharge only for some periods, published in Water Supply Paper (WSP) 1309. Prior to October 1950, published as "below Red Rock Reservoir".

REVISED RECORDS.--WSP 1309: 1935. WSP 1389: 1912, 1934. WSP 1559: Drainage area.

GAGE.--Water-stage recorder and sharp-crested weir. Elevation of gage is 6,530 ft, referenced to the National Geodetic Vertical Datum of 1929, estimated from spillway elevation based on Montana Department of Natural Resources and Conservation elevation. Prior to Oct. 1, 1978, at elevation 1.00 ft higher. See WSP 1709 for history of nonrecording gage changes prior to May 8, 1939.

REMARKS.--Records are good. Flow is regulated by Lima Reservoir (station number 06012000). No storage during 1934. Diversions for irrigation of about 10,000 acres occur upstream from reservoir. A Bureau of Reclamation satellite telemeter is located at the station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1984 reached a discharge of 1,500 ft<sup>3</sup>/s, gage height, 5.15 ft, from floodmarks.

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**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**  
**DAILY MEAN VALUES**

| Day          | Oct      | Nov | Dec | Jan | Feb | Mar | Apr    | May    | Jun    | Jul    | Aug    | Sep   |
|--------------|----------|-----|-----|-----|-----|-----|--------|--------|--------|--------|--------|-------|
| 1            | 0.00     |     |     |     |     |     | 22     | 149    | 419    | 415    | 227    | 140   |
| 2            | 0.00     |     |     |     |     |     | 22     | 163    | 424    | 415    | 226    | 37    |
| 3            | 0.00     |     |     |     |     |     | 22     | 174    | 398    | 413    | 225    | 37    |
| 4            | 0.00     |     |     |     |     |     | 22     | 183    | 382    | 413    | 227    | 37    |
| 5            | 0.00     |     |     |     |     |     | 22     | 182    | 380    | 414    | 226    | 37    |
| 6            | 0.00     |     |     |     |     |     | 22     | 176    | 377    | 395    | 225    | 37    |
| 7            | 0.00     |     |     |     |     |     | 22     | 166    | 377    | 380    | 302    | 37    |
| 8            | 0.00     |     |     |     |     |     | 61     | 162    | 377    | 352    | 361    | 34    |
| 9            | 0.00     |     |     |     |     |     | 187    | 178    | 378    | 328    | 361    | 32    |
| 10           | 0.00     |     |     |     |     |     | 273    | 261    | 377    | 329    | 360    | 32    |
| 11           | 0.00     |     |     |     |     |     | 277    | 261    | 377    | 328    | 359    | 32    |
| 12           | 0.00     |     |     |     |     |     | 285    | 260    | 376    | 329    | 357    | 32    |
| 13           | 35       |     |     |     |     |     | 294    | 262    | 375    | 327    | 359    | 32    |
| 14           | 71       |     |     |     |     |     | 331    | 314    | 372    | 327    | 357    | 32    |
| 15           | 71       |     |     |     |     |     | 358    | 399    | 372    | 327    | 356    | 32    |
| 16           | 71       |     |     |     |     |     | 375    | 426    | 363    | 325    | 360    | 32    |
| 17           | 71       |     |     |     |     |     | 385    | 413    | 399    | 301    | 364    | 32    |
| 18           | 71       |     |     |     |     |     | 383    | 423    | 429    | 285    | 364    | 32    |
| 19           | 71       |     |     |     |     |     | 380    | 434    | 427    | 284    | 362    | 32    |
| 20           | 71       |     |     |     |     |     | 344    | 431    | 425    | 285    | 347    | 33    |
| 21           | 71       |     |     |     |     |     | 320    | 422    | 423    | 266    | 336    | 34    |
| 22           | 71       |     |     |     |     |     | 286    | 441    | 422    | 253    | 336    | 34    |
| 23           | 129      |     |     |     |     |     | 260    | 449    | 422    | 253    | 336    | 34    |
| 24           | 187      |     |     |     |     |     | 219    | 439    | 422    | 253    | 335    | 34    |
| 25           | 186      |     |     |     |     |     | 193    | 462    | 422    | 239    | 333    | 33    |
| 26           | 186      |     |     |     |     |     | 200    | 470    | 420    | 230    | 320    | 34    |
| 27           | 187      |     |     |     |     |     | 200    | 460    | 419    | 229    | 312    | 34    |
| 28           | 186      |     |     |     |     |     | 213    | 453    | 417    | 229    | 313    | 34    |
| 29           | 186      |     |     |     |     |     | 167    | 433    | 418    | 228    | 312    | 34    |
| 30           | 186      |     |     |     |     |     | 137    | 419    | 416    | 228    | 310    | 34    |
| 31           | 186      |     |     |     |     |     | ---    | 416    | ---    | 226    | 309    | ---   |
| <b>Total</b> | 2,293.00 |     |     |     |     |     | 6,282  | 10,281 | 12,005 | 9,606  | 9,877  | 1,120 |
| <b>Mean</b>  | 74.0     |     |     |     |     |     | 209    | 332    | 400    | 310    | 319    | 37.3  |
| <b>Max</b>   | 187      |     |     |     |     |     | 385    | 470    | 429    | 415    | 364    | 140   |
| <b>Min</b>   | 0.00     |     |     |     |     |     | 22     | 149    | 363    | 226    | 225    | 32    |
| <b>Ac-ft</b> | 4,550    |     |     |     |     |     | 12,460 | 20,390 | 23,810 | 19,050 | 19,590 | 2,220 |

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 2012, BY WATER YEAR (WY)\***

|             | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Mean</b> | 75.5   | 54.0   | 28.0   | 21.5   | 19.9   | 18.8   | 88.8   | 329    | 459    | 290    | 201    | 134    |
| <b>Max</b>  | 430    | 353    | 97.6   | 57.9   | 55.3   | 48.0   | 571    | 948    | 754    | 652    | 513    | 384    |
| <b>(WY)</b> | (1917) | (1913) | (1926) | (1928) | (1928) | (1918) | (1913) | (1917) | (1917) | (1982) | (1982) | (1995) |
| <b>Min</b>  | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 26.2   | 4.62   | 0.63   | 0.00   | 0.00   |
| <b>(WY)</b> | (1932) | (1932) | (1932) | (1932) | (1932) | (1932) | (1980) | (1934) | (1934) | (1934) | (1934) | (1937) |

\*During periods of operation (January 1911 to December 1918, April 1919, May 1925 to October 1933, April 1934 to September 1935, May 1936 to October 1938, May 1939 to September 1969, June 1974 to September 1982, April 1985 to current year; seasonal records beginning water year 1974).

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SUMMARY STATISTICS

|                                 | Calendar Year 2011 |        | Water Year 2012 |        | Water Years 1911 - 2012* |              |
|---------------------------------|--------------------|--------|-----------------|--------|--------------------------|--------------|
| <b>Annual mean</b>              |                    |        |                 |        | 143                      |              |
| <b>Highest annual mean</b>      |                    |        |                 |        | 270                      | 1913         |
| <b>Lowest annual mean</b>       |                    |        |                 |        | 59.5                     | 1935         |
| <b>Highest daily mean</b>       | 859                | Jun 13 | 470             | May 26 | <sup>a</sup> 2,500       | May 15, 1933 |
| <b>Lowest daily mean</b>        | 0.00               | Apr 1  | 0.00            | Oct 1  | 0.00                     | Oct 1, 1931  |
| <b>Annual seven-day minimum</b> |                    |        |                 |        | 0.00                     | Oct 1, 1931  |
| <b>Maximum peak flow</b>        |                    |        | 491             | May 25 | <sup>a</sup> 2,500       | May 15, 1933 |
| <b>Maximum peak stage</b>       |                    |        | 3.19            | May 25 | 6.40                     | May 15, 1933 |
| <b>Annual runoff (ac-ft)</b>    |                    |        |                 |        | 103,300                  |              |
| <b>10 percent exceeds</b>       |                    |        |                 |        | 397                      |              |
| <b>50 percent exceeds</b>       |                    |        |                 |        | 40                       |              |
| <b>90 percent exceeds</b>       |                    |        |                 |        | 8.2                      |              |

\*During periods of operation (January 1911 to December 1918, April 1919, May 1925 to October 1933, April 1934 to September 1935, May 1936 to October 1938, May 1939 to September 1969, June 1974 to September 1982, April 1985 to current year; seasonal records beginning water year 1974).

<sup>a</sup>Observed, estimated by dam tender; released to prevent dam failure.

