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Water-Data Report 2006

06090300 MISSOURI RIVER NEAR GREAT FALLS, MT

Upper Missouri Basin
Upper Missouri-Dearborn Subbasin

LOCATION.--Lat 47°35′04″, long 111°03′35″ referenced to North American Datum of 1927, in SW ¼ SE ¼ SW ¼ sec.11, T.21 N., R.5 E., Cascade County, Hydrologic Unit 10030102, on left bank 700 ft downstream from Morony Dam, 12.6 mi northeast of Great Falls, and at river mile 2,105.4.

DRAINAGE AREA.--23,292 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May to July 1953 in Water Supply Paper1320-B, October 1956 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,807.21 ft, referenced to the National Geodetic Vertical Datum of 1929. Prior to July 27, 1977, nonrecording gage at same site at elevation 2.00 ft higher. July 27, 1977 to May 26, 1987, at site 600 ft upstream at elevation 2.00 ft higher. October 1971 to July 27, 1977, discharges were obtained from the Montana Power Company at Rainbow Dam 7.05 mi upstream. Prior to October 1971, Foxboro meters were used for determining discharge through powerplant. Water-stage recorder on Morony Reservoir was used for determining head on taintor gates with elevation of gage at sea level (level by Montana Power Company).

REMARKS.--Records are good except those for estimated daily discharges, which are fair. Flow is regulated by 18 smaller irrigation reservoirs and powerplants upstream, Clark Canyon Reservoir (station number 06015300), and Canyon Ferry Lake (station number 06058500). Diversion for irrigation includes about 750,400 acres upstream from station. U.S. Geological Survey satellite telemeter is located at the station. Several unpublished observations of water temperature and specific conductance were made during the year.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	5,080	5,070	5,180	5,510	5,530	6,870	6,610	8,920	8,350	5,620	5,300	4,860
2	5,060	5,270	4,830	5,540	5,500	6,860	6,600	9,110	7,840	5,620	5,670	4,680
3	5,170	5,160	4,090	5,530	5,400	5,850	6,440	9,030	8,420	5,660	5,540	4,870
4	5,220	5,160	3,990	5,520	5,510	5,830	6,620	9,120	9,090	5,240	5,810	4,920
5	5,290	5,130	4,560	5,500	5,520	5,550	6,640	9,130	9,340	5,710	5,250	4,950
6	5,340	5,090	4,680	5,440	5,360	6,110	6,840	9,020	9,120	5,550	5,520	4,850
7	5,280	5,130	4,390	5,460	5,380	5,850	8,460	8,970	8,650	5,440	5,900	4,850
8	5,030	5,330	4,390	5,500	5,550	5,780	10,000	9,030	8,390	5,620	5,570	4,870
9	5,100	5,250	4,190	5,330	5,840	6,020	9,250	8,820	8,000	5,780	5,340	4,580
10	5,060	5,180	5,160	5,360	6,080	5,860	8,690	9,050	10,400	5,740	5,310	4,800
11	5,240	5,190	5,600	5,560	5,550	5,750	8,560	8,940	16,500	5,610	4,780	4,810
12	5,640	5,210	5,960	5,560	5,580	5,610	8,170	8,840	17,200	5,690	5,070	4,760
13	5,590	5,070	5,860	5,440	6,250	5,600	8,010	8,820	14,600	5,590	5,190	4,650
14	5,170	5,040	5,670	5,390	5,650	5,810	8,060	8,930	12,800	5,470	5,020	4,500
15	5,250	5,050	5,450	5,610	5,920	5,870	8,380	8,980	12,300	5,340	5,050	4,630
16	5,220	4,960	5,290	5,600	5,020	6,190	8,720	9,080	12,000	5,480	4,940	4,930
17	5,140	5,130	e5,000	5,320	3,530	6,420	8,960	9,300	10,900	5,510	4,970	5,040
18	5,040	5,120	e4,600	5,300	3,100	6,120	8,930	9,860	9,930	5,420	5,110	5,230
19	5,130	5,080	e4,500	5,490	e4,000	6,170	8,900	10,800	9,460	5,210	4,980	5,160
20	5,090	5,060	e4,760	5,350	e4,400	6,170	8,610	11,500	8,540	5,350	5,150	5,130
21	5,170	5,170	5,050	5,260	5,430	6,050	8,700	11,500	7,880	5,260	4,970	5,030
22	5,280	5,070	6,300	5,170	6,350	6,440	8,720	10,700	7,910	5,320	4,940	4,990
23	5,180	5,410	e6,400	5,440	7,140	6,220	8,740	10,800	6,510	5,560	4,960	5,230
24	5,260	5,520	e6,500	5,810	7,250	6,320	8,580	9,050	6,410	5,530	4,920	5,330
25	5,330	5,390	e6,200	5,670	6,840	6,520	8,690	9,890	6,420	5,650	4,910	5,400
26	5,300	5,520	e5,800	5,600	6,200	6,530	8,850	10,000	6,290	5,730	5,030	5,130
27	5,510	5,480	e5,600	5,170	6,460	6,560	8,800	9,860	6,130	5,700	5,130	5,120
28	5,420	5,460	e5,500	5,230	6,090	6,550	8,680	10,600	5,920	5,860	5,040	5,050
29	5,290	5,260	e5,500	5,360	---	6,670	8,650	10,400	5,960	5,400	4,970	4,950
30	5,140	5,080	e5,490	5,510	---	6,760	8,880	9,510	5,880	5,680	4,990	5,010
31	5,130	---	5,520	5,640	---	6,730	---	9,100	---	5,760	4,990	---
Total	162,150	156,040	162,010	169,170	156,430	191,640	248,740	296,660	277,140	172,100	160,320	148,310
Mean	5,231	5,201	5,226	5,457	5,587	6,182	8,291	9,570	9,238	5,552	5,172	4,944
Max	5,640	5,520	6,500	5,810	7,250	6,870	10,000	11,500	17,200	5,860	5,900	5,400
Min	5,030	4,960	3,990	5,170	3,100	5,550	6,440	8,820	5,880	5,210	4,780	4,500
Ac-ft	321,600	309,500	321,300	335,500	310,300	380,100	493,400	588,400	549,700	341,400	318,000	294,200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2006, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	5,732	6,071	6,049	6,211	6,398	6,698	7,367	10,730	13,390	8,452	5,870	5,506
Max	11,940	10,430	11,520	8,232	9,252	10,820	13,200	24,780	30,160	23,560	9,946	9,992
(WY)	(1966)	(1966)	(1960)	(1971)	(1997)	(1968)	(1976)	(1976)	(1964)	(1975)	(1993)	(1984)
Min	3,829	3,950	3,773	3,869	4,030	4,021	3,526	4,454	3,758	3,817	3,719	3,109
(WY)	(1989)	(1993)	(2002)	(2002)	(2002)	(1961)	(1961)	(1961)	(1977)	(1977)	(1988)	(1959)

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SUMMARY STATISTICS

	Calendar Year 2005		Water Year 2006		Water Years 1957 - 2006	
Annual total	2,061,760		2,300,710			
Annual mean	5,649		6,303		7,373	
Highest annual mean					11,490	1975
Lowest annual mean					4,349	2001
Highest daily mean	12,400	Jun 5	17,200	Jun 12	63,400	Jun 10, 1964
Lowest daily mean	2,800	Jan 2	3,100	Feb 18	1,760	Apr 16, 1961
Annual seven-day minimum	3,700	Jan 1	4,330	Dec 3	2,740	Sep 5, 1959
Maximum peak flow			18,800	Jun 12	[a]72,000	Jun 10, 1964
Maximum peak stage			5.84	Jun 12	[b]9.02	May 24, 1981
Instantaneous low flow					[c]1.0	Apr 16, 1962
Annual runoff (ac-ft)	4,090,000		4,563,000		5,341,000	
10 percent exceeds	8,650		9,030		11,600	
50 percent exceeds	5,190		5,530		6,250	
90 percent exceeds	4,130		4,950		4,210	

[a] From hydrographic comparison with nearby stations.
[b] Site and datum then in use.
[c] About, powerplant shutdown.