

Water-Data Report 2007

06309000 YELLOWSTONE RIVER AT MILES CITY, MT

Lower Yellowstone Basin
Lower Yellowstone-Sunday Subbasin

LOCATION.--Lat 46°25'18", long 105°51'38" referenced to North American Datum of 1927, in NE ¼ SW ¼ NW ¼ sec.28, T.8 N., R.47 E., Custer County, MT, Hydrologic Unit 10100001, on left bank at upstream side of bridge on State Highway 22 at Miles City, 0.8 mi downstream from Tongue River, and at river mile 184.2.

DRAINAGE AREA.--48,253 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--September 1922 to September 1923, August 1928 to current year. Monthly discharge only for some periods, published in Water Supply Paper (WSP) 1309.

REVISED RECORDS.-- WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,333.3 ft, referenced to the National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to May 6, 1929, nonrecording gages 1.2 mi downstream at different elevations. May 6, 1929, to Sept. 30, 1931, nonrecording gage, and Oct. 1, 1931, to Nov. 10, 1937, water-stage recorder 300 ft upstream from present site at same elevation. Nov. 11, 1937, to Sept. 30, 1946, water-stage recorder 1.2 mi downstream at different elevation. Oct. 1, 1946, to Mar. 15, 1979, water-stage recorder at site 300 ft upstream at present elevation. Mar. 16, 1979, to Sept. 21, 1979, nonrecording gage at present site and elevation. Sept. 22, 1979, recording gage established at same site and elevation.

REMARKS.--Records are good except those for estimated daily discharges, which are poor. Some regulation occurs by reservoirs on tributary streams. Diversions for irrigation include about 1,100,000 acres upstream from station (does not include flood irrigation). Several unpublished observations of water temperature and specific conductance were obtained during the year. U.S. Army Corps of Engineers satellite telemeter is located at the station.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	5,040	5,830	e5,000	e4,900	e4,800	e5,100	6,790	9,320	19,900	10,100	4,850	3,590
2	4,890	5,760	e4,800	e5,000	e4,700	e5,000	6,670	13,200	20,000	9,540	4,500	3,620
3	4,890	5,590	e4,700	e5,200	e4,700	e5,000	7,590	16,800	20,300	8,990	4,160	3,650
4	4,850	5,380	e4,700	e5,200	e4,900	e5,200	8,160	18,900	19,300	8,490	4,070	3,590
5	4,990	5,360	e4,800	e5,100	e5,200	e5,400	7,830	20,900	19,900	7,850	4,150	3,520
6	5,170	5,610	e4,900	e5,100	e5,200	e5,700	7,160	21,600	21,300	7,280	4,220	3,580
7	5,260	5,820	e5,000	e5,100	e5,100	e6,000	6,770	19,800	28,900	6,880	4,150	3,670
8	5,340	5,820	e5,200	e5,100	e5,000	e6,000	6,550	16,700	31,700	6,590	4,070	3,740
9	5,610	5,720	e5,500	e5,100	e5,000	e6,100	6,360	14,500	37,700	6,820	4,060	3,880
10	5,780	5,730	e5,600	e5,100	e5,000	e6,400	6,310	13,300	32,600	7,050	4,030	4,100
11	6,530	6,340	e5,600	e4,800	e5,000	e6,800	6,390	14,200	28,800	6,530	3,850	4,390
12	7,110	7,480	e5,600	e4,600	e5,000	e7,200	6,700	16,700	27,400	5,980	3,760	4,510
13	6,880	7,330	e5,500	e4,500	e4,900	7,460	7,210	19,200	25,900	5,560	3,820	4,500
14	6,810	6,730	e5,400	e4,500	e4,800	6,390	7,190	22,800	25,400	5,230	3,750	4,410
15	6,620	6,500	e5,400	e4,600	e4,700	6,270	6,740	24,600	24,100	5,010	3,600	4,360
16	6,390	6,310	e5,400	e4,700	e4,600	6,290	6,420	26,600	23,200	4,730	3,530	4,220
17	6,330	6,060	e5,400	e4,700	e4,800	6,450	6,290	25,500	23,400	4,590	3,540	4,240
18	6,500	5,950	e5,300	e4,700	e5,000	6,030	6,410	22,900	23,500	4,430	3,610	4,290
19	7,280	5,780	e5,100	e4,700	e5,300	5,560	6,840	21,800	23,300	4,010	3,680	4,210
20	7,040	5,910	e4,900	e4,800	e5,500	5,310	7,260	21,600	22,300	3,950	3,760	4,300
21	6,750	5,840	e4,900	e4,800	e5,600	5,200	8,500	21,500	19,500	3,880	3,810	4,360
22	6,920	5,720	e4,900	e4,800	e5,600	5,280	9,530	22,000	17,300	3,640	3,850	4,440
23	7,200	5,670	e4,900	e5,000	e5,600	5,370	8,770	24,700	16,500	3,510	3,860	4,470
24	7,080	5,640	e4,900	e5,200	e5,500	5,470	7,880	24,600	16,100	3,420	3,800	4,420
25	6,700	5,580	e4,800	e5,200	e5,500	5,510	7,620	22,100	15,800	3,410	3,890	4,460
26	6,470	5,440	e4,800	e5,200	e5,400	5,320	7,580	19,700	15,000	3,330	3,820	4,740
27	6,290	e5,000	e4,900	e5,000	e5,400	5,230	7,730	18,000	14,100	3,520	3,760	4,540
28	6,210	e5,200	e5,100	e5,000	e5,300	5,270	7,790	16,300	12,900	3,700	3,730	4,510
29	6,160	e5,200	e5,000	e5,000	---	5,610	8,380	15,300	11,800	4,630	3,730	4,730
30	6,010	e5,200	e4,900	e5,000	---	6,310	8,780	16,000	10,900	4,910	3,580	4,610
31	5,840	---	e4,900	e4,900	---	6,710	---	18,600	---	5,120	3,520	---
Total	190,940	175,500	157,800	152,600	143,100	180,940	220,200	599,720	648,800	172,680	120,510	125,650
Mean	6,159	5,850	5,090	4,923	5,111	5,837	7,340	19,350	21,630	5,570	3,887	4,188
Max	7,280	7,480	5,600	5,200	5,600	7,460	9,530	26,600	37,700	10,100	4,850	4,740
Min	4,850	5,000	4,700	4,500	4,600	5,000	6,290	9,320	10,900	3,330	3,520	3,520
Ac-ft	378,700	348,100	313,000	302,700	283,800	358,900	436,800	1,190,000	1,287,000	342,500	239,000	249,200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2007, BY WATER YEAR (WY) *

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	7,604	7,026	5,701	5,266	6,089	8,109	8,133	17,180	34,030	19,590	7,925	7,031
Max	12,970	10,850	9,342	8,897	16,160	18,560	15,210	29,100	61,860	46,310	16,540	13,710
(WY)	(1972)	(1973)	(1983)	(1968)	(1971)	(1929)	(1943)	(1978)	(1997)	(1967)	(1997)	(1941)
Min	3,857	3,976	2,921	2,034	2,344	3,027	2,729	7,334	13,030	3,988	2,615	2,964
(WY)	(2004)	(1932)	(1933)	(1937)	(1932)	(2002)	(1961)	(1961)	(1934)	(1934)	(1961)	(1934)

* During periods of operation (1922-23, 1928 to current year).

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SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1922 - 2007*	
Annual total	2,977,830		2,888,440			
Annual mean	8,158		7,914		11,150	
Highest annual mean					17,470	1997
Lowest annual mean					6,141	1934
Highest daily mean	34,200	May 24	37,700	Jun 9	92,400	May 30, 1923
Lowest daily mean	2,610	Sep 13	3,330	Jul 26	996	Dec 14, 1932
Annual seven-day minimum	2,660	Sep 8	3,500	Jul 22	1,220	Dec 12, 1932
Maximum peak flow			38,900	Jun 9	^b 102,000	May 22, 1978
Maximum peak stage			9.37	Jun 9	^c 21.70	Mar 20, 1944
Instantaneous low flow			^a 3,290	Jul 25	1,800	Mar 7, 1995
Annual runoff (ac-ft)	5,907,000		5,729,000		8,075,000	
10 percent exceeds	16,200		19,400		24,900	
50 percent exceeds	5,720		5,400		7,390	
90 percent exceeds	3,740		3,880		4,000	

	Water Years 1922 - 1961**		Water Years 1967 - 2007***	
Annual mean	10,710		11,390	
Highest annual mean	16,660		17,470	1997
Lowest annual mean	6,141		6,176	2001
Highest daily mean	92,400	May 30, 1923	82,300	Jun 15, 1997
Lowest daily mean	996	Dec 14, 1932	1,640	Nov 25, 1977
Annual seven-day minimum	1,220	Dec 12, 1932	2,030	Jan 3, 2004
Maximum peak flow	96,300	June 19, 1944	^b 102,000	May 22, 1978
Maximum peak stage	^c 21.70	Mar 20, 1944	^c 20.78	Mar 15, 1979
Annual runoff (ac-ft)	7,756,000		8,252,000	
10 percent exceeds	25,200		24,300	
50 percent exceeds	6,620		7,990	
90 percent exceeds	3,500		4,500	

* During periods of operation (1922-23, 1928 to current year).

** Prior to construction of Yellowtail Dam, during periods of operation (1922-23, 1928-61).

*** After completion of Yellowtail Dam.

^a Gage height, 2.46 ft.^b Gage height, 16.50 ft.^c Backwater from ice jam.

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