Water-Data Report 2010

06191500 YELLOWSTONE RIVER AT CORWIN SPRINGS, MT

Upper Yellowstone Basin

LOCATION.--Lat 45°06′43″, long 110°47′37″ referenced to North American Datum of 1927, in NW ¼ SE ¼ NW ¼ sec.30, T.8 S., R.8 E., Park County, MT, Hydrologic Unit 10070002, on left bank 20 ft downstream from county road bridge at Corwin Springs, 1.3 mi upstream from Mulherin Creek, 7 mi northwest of Gardiner, and at river mile 549.7.

DRAINAGE AREA.--2,619 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 1889 to November 1893 (published as "at Horr"), September 1910 to current year. Monthly discharge only for some periods, published in Water Supply Paper (WSP) 1309.

REVISED RECORDS.-- WSP 1309: 1912. WSP 1509: 1889-94, 1911, 1913, 1916-18, 1920-21, 1925, 1927. WSP 1559: Drainage area. Water Data Report MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,079.09 ft, referenced to the National Geodetic Vertical Datum of 1929. Nonrecording gages located at site 2 mi upstream at different elevations from Aug. 12, 1889 to Nov. 4, 1893. Nonrecording gages on bridge at present elevation from Sept. 2, 1910 to Apr. 19, 1935.

REMARKS.--Records are good except for estimated daily discharges, which are fair. Natural storage occurs in Yellowstone Lake. Diversions are made for irrigation of about 960 acres of which 40 acres are downstream 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 Several unpublished observations of water temperature and specific conductance were made during the year.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 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1,610	1,330	e1,000	724	678	836	932	1,920	6,710	12,000	4,100	2,140
2	1,580	1,310	e700	714	676	832	887	1,840	9,600	11,100	3,930	2,170
3	1,570	1,280	e600	717	679	853	950	1,760	12,000	10,300	3,780	2,080
4	1,550	1,240	e650	720	690	874	898	1,760	16,300	9,480	3,660	2,000
5	1,520	1,230	e700	e650	685	894	880	1,660	23,400	9,120	3,550	1,960
6	1,470	1,260	e550	e500	695	898	960	1,670	18,500	8,800	3,470	1,920
7	1,500	1,300	e450	e450	681	902	903	1,550	19,600	8,260	3,460	1,870
8	1,470	1,250	e400	e550	675	926	939	1,530	19,800	7,850	3,400	1,830
9	1,450	1,160	e450	e600	666	902	945	1,590	17,200	7,640	3,330	1,820
10	1,360	1,160	e550	e600	706	907	917	1,640	16,000	7,520	3,390	1,870
11	1,360	1,230	e750	e640	724	880	922	1,710	15,000	7,370	3,220	1,890
12	1,370	1,270	e900	701	719	863	977	1,650	13,100	7,170	3,090	1,840
13	1,430	1,210	e850	697	718	901	1,060	1,690	11,700	6,980	3,010	1,770
14	1,460	1,170	e750	694	716	891	1,070	1,880	11,900	6,640	3,000	1,720
15	1,520	1,110	e800	689	750	888	1,050	2,390	13,100	6,370	2,890	1,690
16	1,480	1,080	846	681	755	894	1,080	3,100	14,200	6,140	2,800	1,660
17	1,430	1,140	858	682	793	912	1,260	4,170	14,800	5,970	2,730	1,640
18	1,420	1,150	825	683	809	933	1,370	5,840	11,900	5,880	2,660	1,610
19	1,460	1,170	810	685	790	906	1,630	7,260	11,400	5,690	2,600	1,580
20	1,600	1,110	824	686	783	837	1,950	6,770	11,700	5,480	2,530	1,550
21	1,500	1,130	836	681	733	875	2,330	5,970	11,900	5,300	2,470	1,540
22	1,440	1,130	839	681	731	919	3,100	5,140	12,100	5,220	2,440	1,510
23	1,410	1,100	828	687	755	897	3,250	4,250	11,300	5,040	2,420	1,500
24	1,440	1,100	760	671	764	869	2,860	4,000	11,500	4,820	2,370	1,480
25	1,390	1,110	e650	660	788	872	2,810	3,840	11,700	4,680	2,300	1,450
26	1,330	1,060	e700	667	782	900	2,340	3,550	12,200	4,560	2,240	1,420
27	1,370	1,060	e600	668	797	881	2,190	4,280	12,000	4,480	2,180	1,410
28	1,330	1,090	e600	645	814	881	2,570	7,030	11,700	4,370	2,190	1,390
29	1,210	1,000	e650	630	---	892	2,310	9,850	11,500	4,270	2,290	1,370
30	1,290	1,040	e650	670	---	949	2,050	7,230	12,000	4,160	2,230	1,350
31	1,330	---	e700	670	---	887	---	5,800	---	4,070	2,160	---
Total	44,650	34,980	22,076	20,393	20,552	27,551	47,390	114,320	405,810	206,730	89,890	51,030
Mean	1,440	1,166	712	658	734	889	1,580	3,688	13,530	6,669	2,900	1,701
Max	1,610	1,330	1,000	724	814	949	3,250	9,850	23,400	12,000	4,100	2,170
Min	1,210	1,000	400	450	666	832	880	1,530	6,710	4,070	2,160	1,350
Ac-ft	88,560	69,380	43,790	40,450	40,760	54,650	94,000	226,800	804,900	410,000	178,300	101,200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1889 - 2010, BY WATER YEAR (WY)*

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	1,506	1,183	954	842	831	916	1,561	6,174	11,420	6,724	3,141	1,928
Max	2,429	2,058	1,424	1,361	1,340	1,376	3,542	13,590	22,540	13,260	5,688	3,207
(WY)	(1973)	(1928)	(1984)	(1997)	(1997)	(1997)	(1990)	(1928)	(1997)	(1982)	(1982)	(1968)
Min	781	702	551	448	411	412	576	2,575	4,245	2,025	1,319	938
(WY)	(1989)	(1989)	(1937)	(1937)	(1937)	(1937)	(1937)	(1975)	(1934)	(1919)	(1919)	(1988)

*During periods of operation (August 1889 to November 1893, September 1910 to current year).

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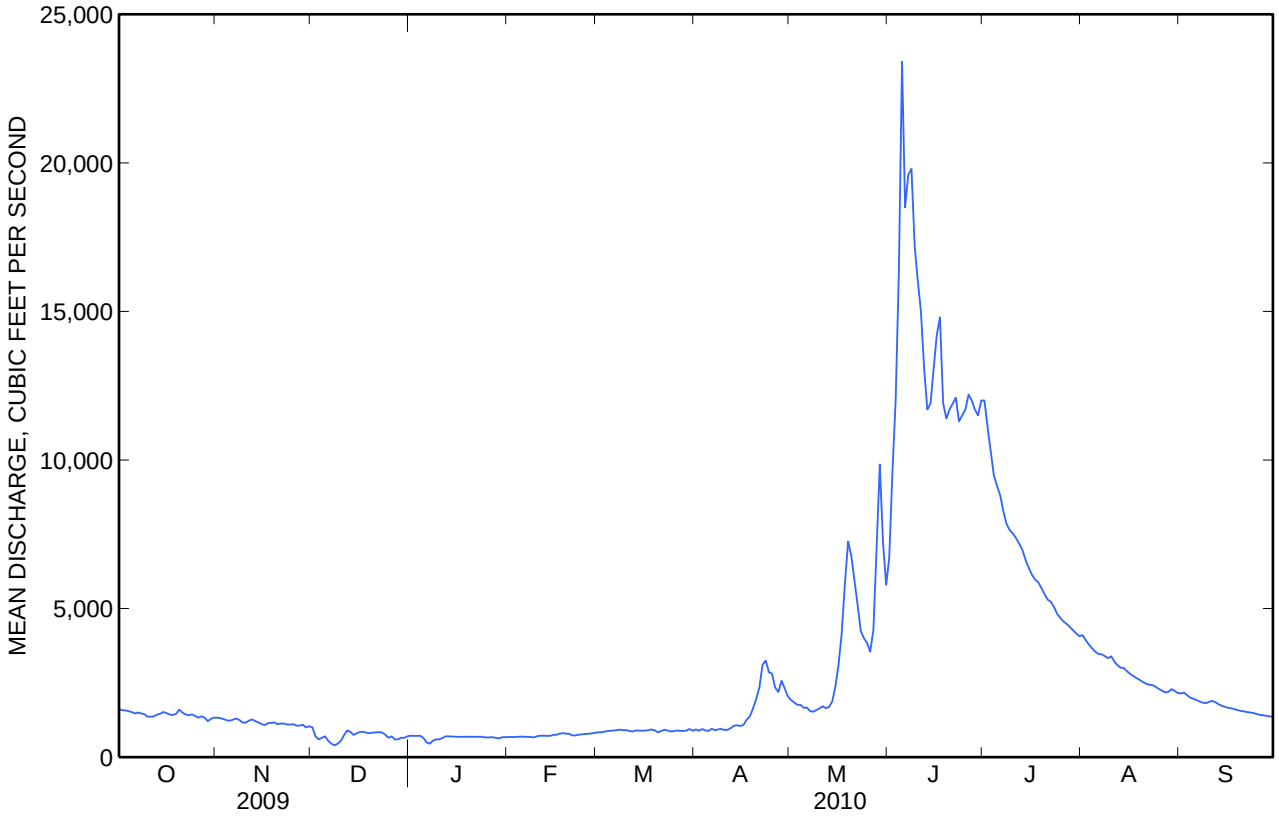
SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1889 - 2010*	
Annual total	1,363,552		1,085,372			
Annual mean	3,736		2,974		3,107	
Highest annual mean					5,158	1997
Lowest annual mean					1,903	1934
Highest daily mean	19,000	May 30	23,400	Jun 5	32,000	Jun 14, 1918
Lowest daily mean	400	Dec 8	400	Dec 8	380	Feb 5, 1989
Annual seven-day minimum	536	Dec 4	536	Dec 4	393	Feb 4, 1937
Maximum peak flow			26,000	Jun 5	[a]32,200	Jun 10, 1996
Maximum peak stage			9.68	Jun 5	11.50	Jun 14, 1918
Instantaneous low flow					[b]343	Feb 2, 1989
Annual runoff (ac-ft)	2,705,000		2,153,000		2,251,000	
10 percent exceeds	13,200		8,480		8,490	
50 percent exceeds	1,440		1,410		1,400	
90 percent exceeds	645		682		753	

*During periods of operation (August 1889 to November 1893, September 1910 to current year).

[a]Gage height, 10.92 ft.

[b]Gage height, 0.12 ft, result of freezeup.