06294500 BIGHORN RIVER ABOVE TULLOCK CREEK, NEAR BIGHORN, MT

Big Horn Basin
Lower Bighorn Subbasin

LOCATION.--Lat 46°07′29″, long 107°28′06″ referenced to North American Datum of 1927, in SE ¼ SE ¼ NE ¼ sec.3, T.4 N., R.34 E., Treasure County, MT, Hydrologic Unit 10080015, on right bank 1.9 mi upstream from Tullock Creek, 3.6 mi southwest of Bighorn, 4.5 mi southeast of Custer, and at river mile 3.0.

DRAINAGE AREA.--22,414 mi^2. Area at site used Oct. 7, 1955, to Sept. 30, 1981, 22,885 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1981 to current year. Previously published as "06294700 Bighorn River at Bighorn, MT" from 1956-81, and as "06294700 Bighorn River near Custer" from 1945-55. Flows are equivalent at all sites.

GAGE.--Water-stage recorder. Elevation of gage is 2,700 ft, referenced to the National Geodetic Vertical Datum of 1929. May 11, 1945 to Dec. 6, 1945, nonrecording gage, and Dec. 7, 1945 to Oct. 6, 1955, water-stage recorder located 1.7 mi upstream at different elevation. Oct. 7, 1955 to Sept. 30, 1981, located at site 2.3 mi downstream at different elevation.

REMARKS.--Records are good except for estimated daily discharges, May 28-30 and June 5-10, which are fair, and December 6-17,23-26,28,29, January 1-2,8-14,27-30 and February 2,11,15-16, which are poor. Since November 1965, flow has been regulated by Bighorn Lake (usable capacity, 1,312,000 acre-ft). Major regulation prior to November 1965 occurred from 14 reservoirs in Wyoming and one in Montana with a combined usable capacity of about 1,400,000 acre-ft. Diversion for irrigation of about 445,200 acres occurs upstream from the station. U.S. Army Corps of Engineers 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 Several unpublished observations of water temperature and specific conductance were made during the year.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	3,410	3,500	3,140	e3,000	2,870	2,290	2,050	3,080	10,400	10,500	3,370	3,220
2	3,430	3,540	3,120	e3,000	e2,850	2,310	2,080	3,150	10,200	10,400	3,290	3,180
3	3,450	3,580	3,110	3,020	2,840	2,330	2,070	3,240	9,990	10,400	3,250	3,110
4	3,460	3,630	3,120	3,010	2,840	2,360	2,070	3,340	10,100	10,400	3,340	3,240
5	3,650	3,400	3,130	3,030	2,940	2,440	2,050	3,430	e10,400	10,400	3,340	3,170
6	3,620	3,000	e3,150	3,000	3,000	2,440	2,040	3,690	e10,500	10,300	3,370	3,180
7	3,540	2,890	e3,150	3,020	2,990	2,430	2,050	4,020	e10,600	10,300	3,390	2,940
8	3,580	2,910	e3,050	e3,000	2,990	2,440	2,130	4,330	e10,600	9,570	3,380	2,950
9	3,620	2,930	e3,050	e3,000	2,980	2,420	2,190	4,470	e10,700	8,750	3,450	2,990
10	3,590	2,960	e3,050	e3,000	2,960	2,350	2,190	4,520	e10,700	7,820	3,380	3,020
11	3,580	3,000	e3,050	e3,000	e2,950	2,290	2,190	4,490	10,600	7,170	3,330	3,140
12	3,600	3,040	e3,050	e2,900	2,790	2,250	2,180	4,600	10,800	6,720	3,260	3,350
13	3,640	3,080	e3,050	e2,900	2,650	2,240	2,190	5,010	10,700	5,830	3,030	3,330
14	3,700	3,100	e3,050	e2,900	2,640	2,230	2,190	5,970	10,400	5,420	3,100	3,250
15	3,790	3,130	e3,050	2,900	e2,650	2,210	2,170	6,750	10,300	4,880	3,100	3,300
16	3,870	3,130	e3,050	2,900	e2,650	2,180	2,160	6,710	10,200	4,750	3,020	3,210
17	3,950	3,170	e3,050	2,910	2,650	2,170	2,180	6,510	10,600	4,540	2,950	3,230
18	3,600	3,150	3,080	2,880	2,660	2,160	2,190	6,700	11,000	4,380	2,930	3,280
19	3,200	3,100	3,090	2,880	2,680	2,150	2,200	6,660	11,800	4,330	2,930	3,230
20	2,660	3,120	3,120	2,870	2,680	2,130	2,130	6,700	11,600	4,050	2,890	3,220
21	2,300	3,140	3,130	2,880	2,660	2,120	2,210	7,130	11,400	3,800	2,900	3,250
22	1,900	3,170	3,060	2,870	2,650	2,120	2,200	7,370	10,900	3,910	2,970	3,270
23	3,460	3,200	e3,000	2,850	2,640	2,130	2,240	7,420	10,600	3,960	3,000	3,270
24	3,530	3,220	e3,000	2,830	2,620	2,110	2,340	7,600	10,900	3,920	2,950	3,260
25	3,650	3,160	e3,000	2,820	2,490	2,100	2,400	7,950	11,100	3,950	2,880	3,270
26	3,660	3,030	e3,000	2,790	2,350	2,110	2,490	8,980	11,000	3,890	2,810	3,280
27	3,730	3,060	2,990	e2,800	2,270	2,110	2,520	9,850	10,600	3,810	2,730	3,290
28	3,770	3,080	e3,000	e2,800	2,280	2,090	2,560	e10,100	10,800	3,810	2,660	3,340
29	3,600	3,100	e3,000	e2,800	---	2,070	2,560	e10,400	10,700	3,730	2,870	3,320
30	3,420	3,120	3,000	e2,800	---	2,070	2,780	e10,100	10,600	3,600	3,090	3,290
31	3,470	---	3,000	2,830	---	2,060	---	10,400	---	3,390	3,290	---
Total	107,430	94,640	94,890	90,190	76,220	68,910	67,000	194,670	320,790	192,680	96,250	96,380
Mean	3,465	3,155	3,061	2,909	2,722	2,223	2,233	6,280	10,690	6,215	3,105	3,213
Max	3,950	3,630	3,150	3,030	3,000	2,440	2,780	10,400	11,800	10,500	3,450	3,350
Min	1,900	2,890	2,990	2,790	2,270	2,060	2,040	3,080	9,990	3,390	2,660	2,940
Ac-ft	213,100	187,700	188,200	178,900	151,200	136,700	132,900	386,100	636,300	382,200	190,900	191,200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2010, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	3,100	3,168	3,040	2,938	3,076	3,511	3,396	4,242	6,807	5,166	2,778	2,781
Max	5,546	5,599	4,907	5,478	5,314	6,580	7,881	9,102	15,180	19,090	6,972	4,952
(WY)	(1972)	(1974)	(1968)	(1968)	(1971)	(1972)	(1997)	(1947)	(1948)	(1967)	(1997)	(1973)
Min	1,103	1,223	1,280	1,382	1,544	908	1,063	1,304	1,050	707	868	1,009
(WY)	(2003)	(1978)	(1961)	(1961)	(2003)	(1966)	(1966)	(1966)	(1966)	(1960)	(1961)	(1966)

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SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1945 - 2010	
Annual total	1,518,560		1,500,050			
Annual mean	4,160		4,110		3,651	
Highest annual mean					5,594	1997
Lowest annual mean					1,474	2003
Highest daily mean	13,400	Jun 24	11,800	Jun 19	50,000	May 20, 1978
Lowest daily mean	1,900	Oct 22	1,900	Oct 22	400	Apr 4, 1967
Annual seven-day minimum	2,610	Jan 26	2,060	Apr 1	528	May 6, 1961
Maximum peak flow			[a]12,000	Jun 19	[c]59,200	May 20, 1978
Maximum peak stage			[b]8.72	Dec 16	[d]14.21	Apr 2, 1965
Instantaneous low flow					[e]275	Nov 15, 1959
Annual runoff (ac-ft)	3,012,000		2,975,000		2,645,000	
10 percent exceeds	7,800		10,200		6,180	
50 percent exceeds	3,140		3,110		3,040	
90 percent exceeds	2,690		2,200		1,620	

	Water Years 1946 - 1961*		Water Years 1967 - 2010**	
Annual mean	3,358		3,644	
Highest annual mean	5,051	1947	5,594	1997
Lowest annual mean	1,623	1961	1,474	2003
Highest daily mean	25,700	Jun 23, 1947	50,000	May 20, 1978
Lowest daily mean	462	May 12, 1962	400	Apr 4, 1967
Annual seven-day minimum	528	May 6, 1961	843	Nov 18, 1977
Maximum peak flow	[f]26,200	Jun 24, 1947	[c]59,200	May 20, 1978
Maximum peak stage	10.65	May 24, 1947	14.15	May 20, 1978
Instantaneous low flow	[e]275	Nov 15, 1959		
Annual runoff (ac-ft)	2,578,000		2,632,000	
10 percent exceeds	6,200		6,060	
50 percent exceeds	2,810		3,150	
90 percent exceeds	1,500		1,690	

*Prior to construction of Yellowtail Dam.
**After completion of Yellowtail Dam.

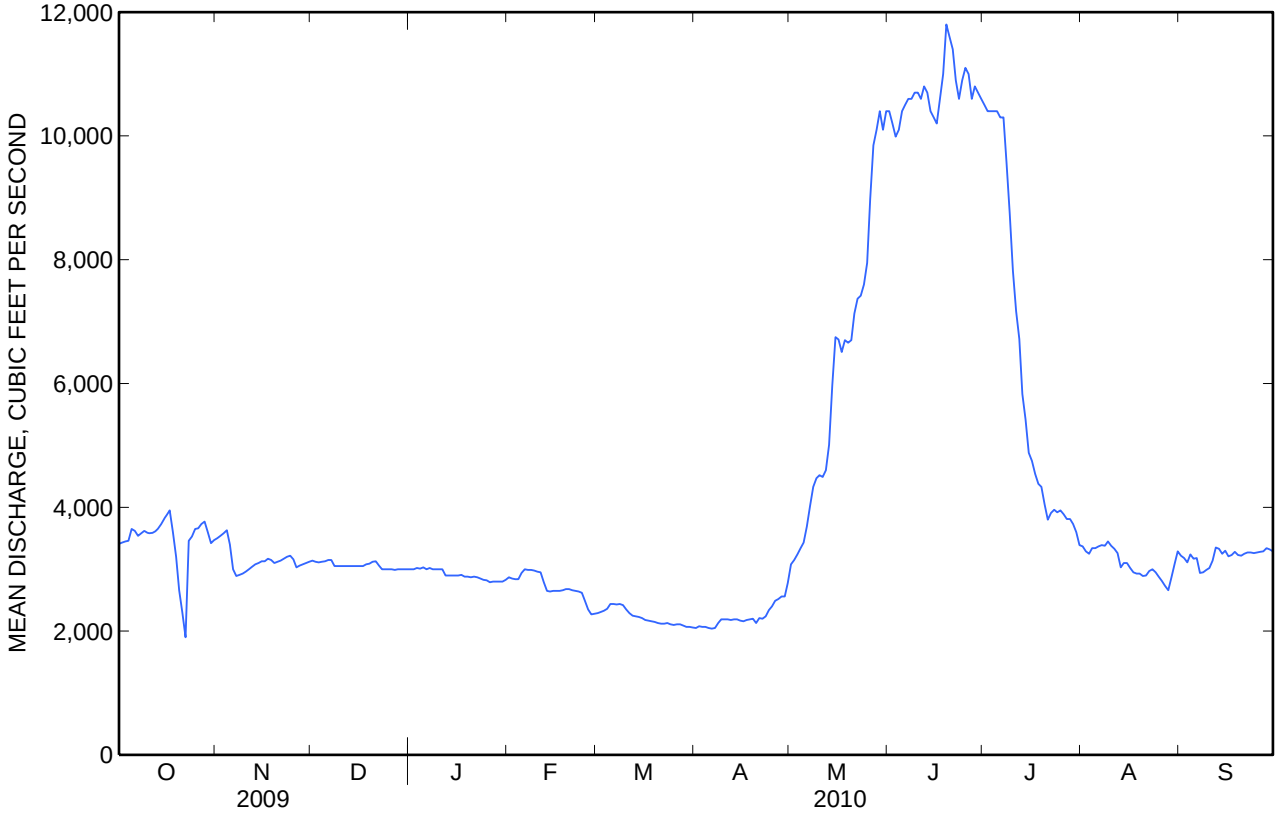
[a]Gage height, 6.46 ft.

[b]Result of ice jam.

[c]Gage height, 14.15 ft, at different site and datum.

[d]Ice jam, at different site and datum.

[e]About, result of freezeup.

[f]Gage height, 8.79 ft, at different site and datum.

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