

Water-Data Report 2012

**06294500 BIGHORN RIVER ABOVE TULLOCK CREEK, NEAR BIGHORN, MT**

Big Horn Basin  
Lower Bighorn Subbasin

LOCATION.--Lat 46°07'28", long 107°28'08" referenced to North American Datum of 1983, 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<sup>2</sup>. Area at site used Oct. 7, 1955, to Sept. 30, 1981, 22,885 mi<sup>2</sup>.

**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 those for the period January 19-26, 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 Several unpublished observations of water temperature and specific conductance were made during the year.

## 06294500 BIGHORN RIVER ABOVE TULLOCK CREEK, NEAR BIGHORN, MT—Continued

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

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	3,600	4,010	3,720	3,520	3,570	3,480	3,130	3,420	2,430	2,180	1,910	1,880
2	3,620	3,930	3,580	3,500	3,580	3,480	3,140	3,210	2,570	2,190	1,930	1,910
3	3,660	3,970	3,520	3,530	3,540	3,450	3,160	3,070	2,560	2,150	1,910	1,900
4	3,670	4,000	3,510	3,480	3,480	3,470	3,170	3,000	2,610	2,190	1,960	1,910
5	3,690	3,820	3,500	3,510	3,440	3,530	3,190	3,020	2,680	2,250	1,970	1,890
6	3,550	3,620	3,450	3,520	3,420	3,790	3,200	3,040	2,650	2,220	1,980	1,850
7	3,570	3,610	3,450	3,490	3,410	3,910	3,210	2,990	2,650	2,010	1,890	1,830
8	3,610	3,620	3,530	3,480	3,400	3,650	3,190	2,830	2,700	1,960	1,830	1,840
9	3,750	3,630	3,510	3,490	3,400	3,520	3,180	2,680	2,590	1,920	1,820	1,840
10	3,730	3,650	3,540	3,470	3,410	3,480	5,040	2,270	2,560	1,830	1,820	1,840
11	3,670	3,680	3,540	3,470	3,380	3,500	7,220	2,050	2,600	1,830	1,860	1,810
12	3,900	3,700	3,570	3,420	3,380	3,500	5,170	2,030	2,470	1,850	1,920	1,880
13	4,220	3,730	3,550	3,440	3,360	3,390	3,470	2,040	2,390	1,870	1,910	1,950
14	4,400	3,750	3,560	3,460	3,370	3,320	3,270	2,040	2,320	1,910	1,850	1,940
15	4,600	3,640	3,530	3,470	3,390	3,280	3,320	1,940	2,240	1,970	1,840	1,900
16	4,690	3,500	3,500	3,480	3,380	3,280	3,300	1,890	2,260	1,960	1,910	1,880
17	4,770	3,500	3,500	3,520	3,380	3,250	3,080	2,060	2,280	1,980	1,900	1,860
18	4,840	3,540	3,500	3,430	3,370	3,230	2,820	2,070	2,300	2,000	1,900	1,860
19	4,940	3,540	3,530	e3,300	3,380	3,310	2,810	2,250	2,260	2,050	1,890	1,840
20	5,020	3,480	3,490	e3,300	3,380	3,280	2,870	2,390	2,240	2,040	1,860	1,840
21	5,100	3,490	3,530	e3,400	3,390	3,250	2,890	2,490	2,150	2,060	1,740	1,840
22	5,160	3,530	3,520	e3,400	3,450	3,230	2,820	2,420	2,100	2,060	1,730	1,800
23	5,210	3,630	3,460	e3,400	3,890	3,190	2,840	2,430	2,180	2,010	1,790	1,790
24	5,270	3,680	3,430	e3,400	4,340	3,160	2,830	2,490	2,170	1,940	1,830	1,750
25	5,040	3,680	3,420	e3,400	4,690	3,140	2,780	2,550	2,170	1,900	1,820	1,730
26	4,790	3,660	3,460	e3,400	3,910	3,140	2,800	2,720	2,090	1,840	1,830	1,720
27	4,840	3,680	3,460	3,450	3,600	3,140	2,900	2,820	2,020	1,840	1,860	1,780
28	4,600	3,720	3,470	3,440	3,500	3,130	3,140	2,840	2,030	1,880	1,800	1,790
29	4,340	3,680	3,510	3,430	3,460	3,140	3,440	2,870	2,040	1,880	1,820	1,780
30	4,360	3,740	3,500	3,460	---	3,140	3,460	2,720	2,110	1,900	1,830	1,750
31	4,390	---	3,560	3,500	---	3,140	---	2,420	---	1,890	1,870	---
<b>Total</b>	134,600	110,410	108,900	106,960	102,650	103,900	100,840	79,060	70,420	61,560	57,780	55,180
<b>Mean</b>	4,342	3,680	3,513	3,450	3,540	3,352	3,361	2,550	2,347	1,986	1,864	1,839
<b>Max</b>	5,270	4,010	3,720	3,530	4,690	3,910	7,220	3,420	2,700	2,250	1,980	1,950
<b>Min</b>	3,550	3,480	3,420	3,300	3,360	3,130	2,780	1,890	2,020	1,830	1,730	1,720
<b>Ac-ft</b>	267,000	219,000	216,000	212,200	203,600	206,100	200,000	156,800	139,700	122,100	114,600	109,400

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	3,117	3,168	3,041	2,941	3,078	3,504	3,424	4,326	6,895	5,214	2,826	2,784
<b>Max</b>	5,546	5,599	4,907	5,478	5,314	6,580	7,881	11,530	17,270	19,090	7,010	4,952
<b>(WY)</b>	(1972)	(1974)	(1968)	(1968)	(1971)	(1972)	(1997)	(2011)	(2011)	(1967)	(2011)	(1973)
<b>Min</b>	1,103	1,223	1,280	1,382	1,544	908	1,063	1,304	1,050	707	868	1,009
<b>(WY)</b>	(2003)	(1978)	(1961)	(1961)	(2003)	(1966)	(1966)	(1966)	(1966)	(1960)	(1961)	(1966)

## 06294500 BIGHORN RIVER ABOVE TULLOCK CREEK, NEAR BIGHORN, MT—Continued

## SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1945 - 2012	
<b>Annual total</b>	2,341,910		1,092,260			
<b>Annual mean</b>	6,416		2,984		3,678	
<b>Highest annual mean</b>					6,147 2011	
<b>Lowest annual mean</b>					1,474 2003	
<b>Highest daily mean</b>	31,200	May 23	7,220	Apr 11	50,000	May 20, 1978
<b>Lowest daily mean</b>	1,900	Feb 21	1,720	Sep 26	400	Apr 4, 1967
<b>Annual seven-day minimum</b>	2,240	Feb 20	1,760	Sep 24	528	May 6, 1961
<b>Maximum peak flow</b>			<sup>a</sup> 7,750	Apr 11	<sup>c</sup> 59,200	May 20, 1978
<b>Maximum peak stage</b>			<sup>b</sup> 10.79	Jan 22	<sup>d</sup> 14.21	Apr 2, 1965
<b>Instantaneous low flow</b>					<sup>e</sup> 275	Nov 15, 1959
<b>Annual runoff (ac-ft)</b>	4,645,000		2,166,000		2,665,000	
<b>10 percent exceeds</b>	14,300		3,740		6,220	
<b>50 percent exceeds</b>	3,980		3,230		3,050	
<b>90 percent exceeds</b>	2,600		1,850		1,640	
			Water Years 1946-1961*		Water Years 1967 – 2011**	
<b>Annual mean</b>			3,358		3,684	
<b>Highest annual mean</b>			5,051 1947		6,147 2011	
<b>Lowest annual mean</b>			1,623 1961		1,474 2003	
<b>Highest daily mean</b>			25,700 Jun 23, 1947		50,000 May 20, 1978	
<b>Lowest daily mean</b>			462 May 12, 1962		400 Apr 4, 1967	
<b>Annual seven-day minimum</b>			528 May 6, 1961		843 Nov 18, 1977	
<b>Maximum peak flow</b>			<sup>f</sup> 26,200 Jun 24, 1947		<sup>c</sup> 59,200 May 20, 1978	
<b>Maximum peak stage</b>			10.65 May 24, 1947		14.15 May 20, 1978	
<b>Instantaneous low flow</b>			<sup>e</sup> 275 Nov 15, 1959			
<b>Annual runoff (ac-ft)</b>			2,578,000		2,669,000	
<b>10 percent exceeds</b>			6,200		6,170	
<b>50 percent exceeds</b>			2,810		3,150	
<b>90 percent exceeds</b>			1,500		1,710	

\*Prior to construction of Yellowtail Dam.

\*\*After completion of Yellowtail Dam.

<sup>a</sup>Gage height, 4.60 ft.<sup>b</sup>Backwater from ice.<sup>c</sup>Gage height, 14.15 ft, at different site and datum.<sup>d</sup>Ice jam, at different site and datum.<sup>e</sup>About, result of freezeup.<sup>f</sup>Gage height, 8.79 ft, at different site and datum.

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