06200000 BOULDER RIVER AT BIG TIMBER, MT

Upper Yellowstone Basin

LOCATION.--Lat 45°50′03″, long 109°56′17″ referenced to North American Datum of 1927, in SE ¼ NE ¼ SE ¼ sec.14, T.1 N., R.14 E., Sweet Grass County, MT, Hydrologic Unit 10070002, on left bank 150 ft upstream from Old Boulder Bridge, 1 mi east of Big Timber, and at river mile 1.6.

DRAINAGE AREA.--523 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 1947 to December 1953, March 1955 to current year. Monthly discharge only for April 1947, published in Water Supply Paper 1309.

GAGE.--Water-stage recorder. Elevation of gage is 4,056.39 ft, referenced to the National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records are good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 13,300 acres, of which about 250 acres is 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 Several unpublished observations of water temperature and specific conductance were made during the year.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 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	78	142	e115	161	115	128	109	346	989	954	104	46
2	78	152	e110	154	120	112	109	374	1,150	873	97	45
3	100	168	e115	159	113	108	108	371	1,760	852	87	45
4	127	164	e125	149	109	108	108	352	2,450	791	79	43
5	142	156	e115	120	e100	104	113	337	3,120	718	75	43
6	151	154	e105	138	e90	105	143	354	3,000	832	72	42
7	150	174	e100	136	e100	104	162	407	2,900	752	70	42
8	151	182	e130	135	e110	104	148	456	3,470	702	65	42
9	158	172	e150	115	e100	102	141	444	3,940	602	70	42
10	158	157	e150	e100	e85	90	143	406	3,420	552	72	42
11	152	176	e160	e120	e75	e80	143	357	2,870	509	69	42
12	144	191	e160	e115	e85	e80	138	318	2,470	486	68	42
13	138	175	175	e110	e90	e75	136	362	2,750	487	72	42
14	144	159	e150	e130	e85	e85	155	501	2,820	453	71	41
15	149	149	e140	e120	e75	e95	172	693	2,430	420	68	45
16	149	146	e140	e110	e65	99	185	1,040	1,910	392	68	56
17	150	162	e130	e115	e55	104	245	1,460	1,750	363	71	57
18	151	158	e120	e110	e60	104	247	1,810	1,710	330	69	55
19	156	155	e140	e105	e70	105	210	2,420	1,620	308	65	55
20	160	151	e160	e110	e90	101	190	2,740	1,610	281	61	56
21	169	150	172	e100	e110	104	180	3,100	1,470	236	59	57
22	161	149	175	e90	e130	104	194	2,950	1,290	217	56	63
23	156	146	181	e100	e150	104	248	2,790	1,210	196	55	67
24	154	144	159	e110	e130	104	291	2,550	1,190	184	53	63
25	151	146	156	e120	e115	105	260	2,430	1,110	188	54	66
26	151	160	150	132	e125	107	245	2,630	1,070	163	55	68
27	151	161	145	120	134	106	231	2,610	1,020	140	56	69
28	151	155	138	e105	135	104	231	2,140	982	130	54	71
29	164	129	151	e110	---	107	228	1,610	939	124	51	69
30	158	e125	138	e115	---	114	275	1,280	962	115	49	69
31	150	---	164	e115	---	112	---	1,060	---	107	46	---
Total	4,502	4,708	4,419	3,729	2,821	3,164	5,488	40,698	59,382	13,457	2,061	1,585
Mean	145	157	143	120	101	102	183	1,313	1,979	434	66.5	52.8
Max	169	191	181	161	150	128	291	3,100	3,940	954	104	71
Min	78	125	100	90	55	75	108	318	939	107	46	41
Ac-ft	8,930	9,340	8,770	7,400	5,600	6,280	10,890	80,720	117,800	26,690	4,090	3,140

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2006, BY WATER YEAR (WY)*

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	214	188	152	134	126	127	207	1,130	2,712	1,213	231	183
Max	417	282	214	214	197	179	390	2,241	4,638	4,307	709	534
(WY)	(1973)	(1998)	(1976)	(1984)	(1985)	(1979)	(1962)	(1976)	(1997)	(1975)	(1968)	(1968)
Min	74.9	108	71.8	54.7	55.2	92.9	66.7	429	894	193	21.9	27.7
(WY)	(2002)	(1988)	(1988)	(2001)	(2001)	(2002)	(1961)	(1953)	(1987)	(1988)	(1961)	(1988)

* During periods of operation (April 1947 to December 1953, March 1955 to current year).*

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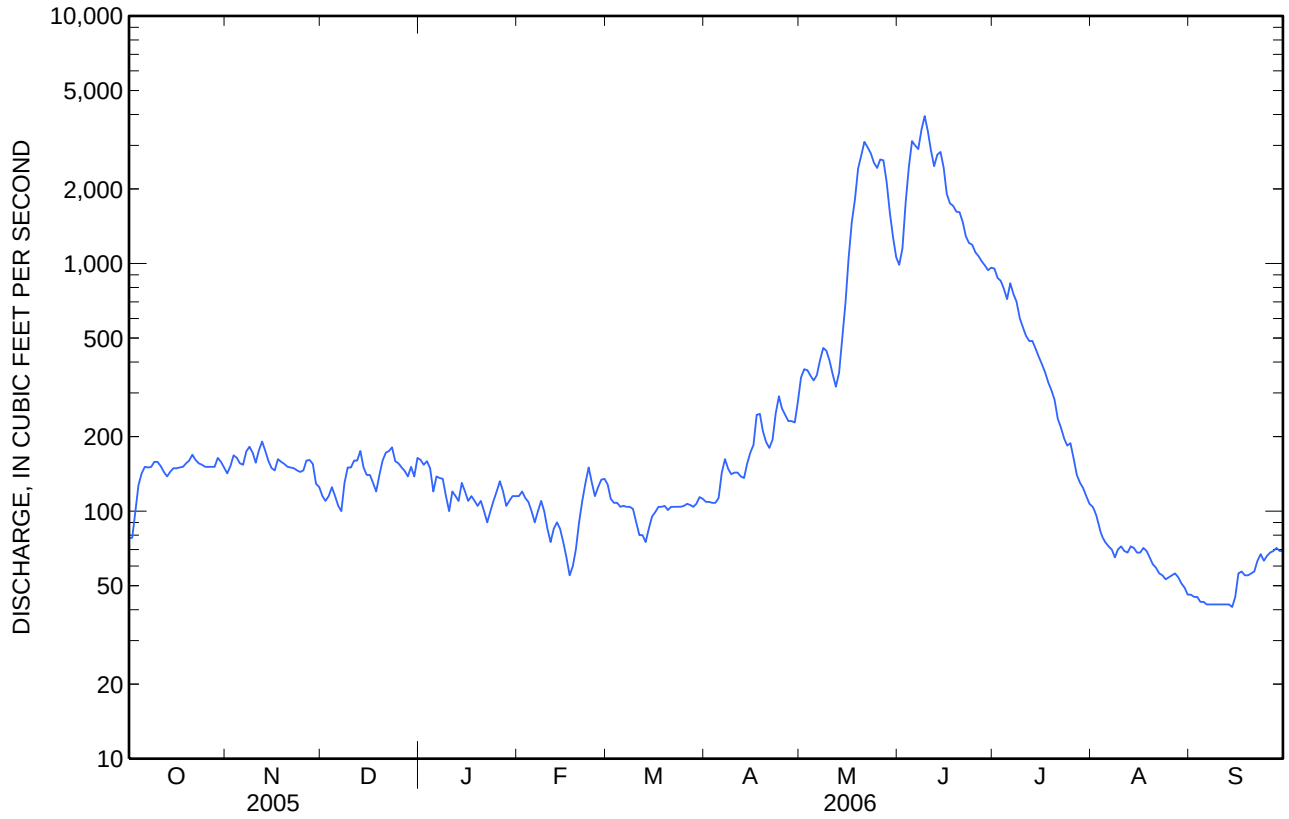
SUMMARY STATISTICS

	Calendar Year 2005		Water Year 2006		Water Years 1948 – 2006*	
Annual total	154,683		146,014			
Annual mean	424		400		554	
Highest annual mean					905	1975
Lowest annual mean					310	2001
Highest daily mean	4,660	Jun 23	3,940	Jun 9	8,540	Jul 5, 1975
Lowest daily mean	60	Jan 14	41	Sep 14	12	Aug 26, 1961
Annual seven-day minimum	62	Sep 17	42	Sep 8	13	Aug 25, 1961
Maximum peak flow			4,420	Jun 9	[b]9,940	Jun 5, 1997
Maximum peak stage			6.02	Jun 9	9.00	Jun 5, 1997
Instantaneous low flow			[a]41	Sep 6	10	Aug 26, 1961
Annual runoff (ac-ft)	306,800		289,600		401,200	
10 percent exceeds	1,380		1,170		1,700	
50 percent exceeds	146		142		177	
90 percent exceeds	80		63		99	

* During periods of operation (April 1947 to December 1953, March 1955 to current year).
[a] Gage height, 1.07 ft.
[b] From rating curve extended above 6,000 ft³/s.