Water-Data Report 2012

06326500 POWDER RIVER NEAR LOCATE, MT

Powder Basin
Lower Powder Subbasin

LOCATION.--Lat 46°25'46", long 105°18'37" referenced to North American Datum of 1983, in SW ¼ SW ¼ SE ¼ sec.23, T.8 N., R.51 E., Custer County, MT, Hydrologic Unit 10090209, on left bank at downstream side of bridge on U.S. Highway 12, 0.1 mi west of Locate, and 25 mi east of Miles City, and at river mile 29.4.

DRAINAGE AREA.--13,068 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March 1938 to current year.

REVISED RECORDS.--Water Supply Paper (WSP) 926: 1939. WSP 1309: 1938-39, maximum discharge. WSP 1729: Drainage area. Water Data Report MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,384.79 ft, referenced to the National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to July 11, 1947, nonrecording gage located at bridge 1.5 mi upstream, and July 11, 1947 to Sept. 30, 1965, water-stage recorder located at site near upstream bridge at different elevation. Oct. 1, 1965 to Oct. 4, 1966, nonrecording gage, and Oct. 5, 1966 to Mar. 21, 1978, water-stage recorder located at present site and elevation. Mar. 22, 1978 to Apr. 23, 1981, water-stage recorder located 1.5 mi upstream at different elevation, Apr. 24 to Aug. 20, 1981, water-stage recorder located at present site and elevation, and Aug. 21, 1981 to Sept. 30, 1981, water-stage recorder located 1.5 mi upstream at different elevation. Oct. 1, 1981 to Apr. 5, 1995 water-stage recorder located at site 1.5 miles downstream at different elevation. Apr. 7, 1995 to present, water-stage recorders located on each bank and used depending on control conditions.

REMARKS.--Records are fair except for estimated daily discharges, which are poor. Some regulation occurs by three reservoirs in Wyoming with combined usable capacity of 36,800 acre-ft. Diversions for irrigation include about 101,800 acres upstream from station. 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 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	174	287	e400	e270	e320	e650	642	464	288	152	e13	3.5
2	174	287	e380	e280	e310	e550	627	511	568	144	12	3.1
3	173	291	e360	e290	e300	e500	624	573	576	116	e12	3.1
4	174	297	e320	e300	e310	e480	611	570	512	89	e13	3.1
5	171	299	e270	e300	e320	e560	592	616	451	75	11	3.1
6	168	303	e250	e290	e290	e640	595	578	415	126	11	4.0
7	168	320	e230	e280	e300	e720	579	547	419	91	e10	5.3
8	174	326	e220	e290	e310	e840	545	572	650	65	9.1	6.3
9	186	329	e250	e300	e320	e1,000	547	561	776	50	8.9	7.1
10	186	343	e260	e300	e260	1,300	563	529	873	44	8.4	7.0
11	186	339	e250	e270	e270	2,040	541	508	e820	38	9.3	6.8
12	181	330	e250	e280	e300	1,940	526	475	e755	33	10	6.7
13	201	319	e240	e300	e330	1,690	513	435	706	e25	e11	7.1
14	265	321	e250	e300	e330	1,480	515	427	653	e25	9.9	7.0
15	273	321	e260	e290	e320	1,420	491	424	644	25	e9.5	7.2
16	292	330	e270	e260	e320	1,330	505	392	604	26	9.0	7.4
17	323	339	e280	e270	e320	1,210	506	359	538	27	13	7.9
18	326	381	e280	e260	e340	1,090	537	327	486	32	19	8.5
19	324	397	e270	e220	e340	1,010	538	323	436	29	18	8.3
20	320	e200	e270	e240	e350	919	519	309	400	26	13	8.1
21	320	e120	e260	e270	e350	863	533	280	375	24	8.8	8.0
22	318	e180	e260	e280	e350	820	536	256	329	21	6.9	8.3
23	315	e230	e260	e290	e370	787	521	217	288	e18	5.3	9.4
24	315	e280	e270	e300	e360	747	483	187	253	e24	e4.5	10
25	291	e300	e280	e320	e350	718	444	195	246	e28	e5.5	11
26	296	e350	e280	e310	e330	703	427	189	250	e24	4.3	11
27	302	e380	e280	e300	e350	661	432	257	217	30	4.0	11
28	309	e430	e290	e300	e450	662	452	237	204	31	3.7	16
29	296	e450	e300	e320	e600	654	464	294	172	24	e3.5	18
30	294	e430	e290	e320	---	660	469	279	161	17	3.2	19
31	287	---	e300	e320	---	654	---	277	---	e14	3.3	---
Total	7,782	9,509	8,630	8,920	9,770	29,298	15,877	12,168	14,065	1,493	283.1	242.3
Mean	251	317	278	288	337	945	529	393	469	48.2	9.13	8.08
Max	326	450	400	320	600	2,040	642	616	873	152	19	19
Min	168	120	220	220	260	480	427	187	161	14	3.2	3.1
Ac-ft	15,440	18,860	17,120	17,690	19,380	58,110	31,490	24,140	27,900	2,960	562	481

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	243	219	151	145	404	1,177	725	1,201	1,613	561	203	158
Max	921	790	417	476	3,850	4,627	3,062	5,970	8,045	2,015	1,096	898
(WY)	(1941)	(1999)	(1942)	(1981)	(1943)	(1972)	(1965)	(1978)	(1944)	(1993)	(1941)	(1941)
Min	1.77	12.5	12.5	4.53	2.82	80.2	109	51.2	25.9	9.34	1.30	0.19
(WY)	(1961)	(1961)	(1961)	(1950)	(1950)	(1950)	(1961)	(2004)	(2004)	(2004)	(1988)	(1960)

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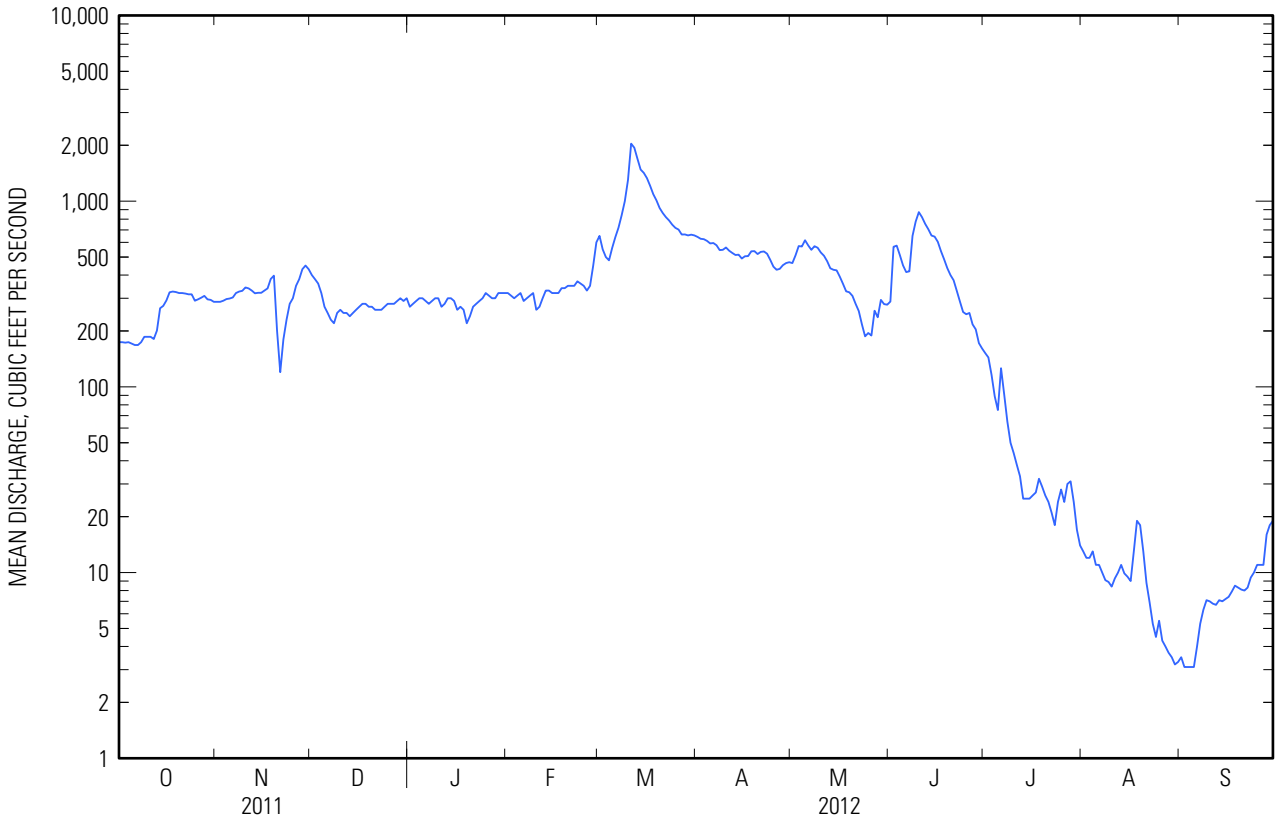
SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1939 - 2012	
Annual total	485,920		118,037.4			
Annual mean	1,331		323		567	
Highest annual mean					1,622	1944
Lowest annual mean					79.1	2004
Highest daily mean	20,500	May 21	2,040	Mar 11	26,000	Feb 19, 1943
Lowest daily mean	114	Sep 19	3.1	Sep 2	0.00	Jan 16, 1950
Annual seven-day minimum	117	Sep 14	3.2	Aug 30	0.00	Jan 16, 1950
Maximum peak flow			[a]2,600	Mar 11	[d]31,000	Feb 19, 1943
Maximum peak stage			[b]5.19	Mar 7	[b]12.20	Mar 16, 1978
Instantaneous low flow			[c]2.7	Aug 30	0.00	Many days [f]
Annual runoff (ac-ft)	963,800		234,100		410,500	
10 percent exceeds	4,360		631		1,310	
50 percent exceeds	308		294		230	
90 percent exceeds	167		9.1		40	

[a]Gage height, 4.30 ft.
[b]Backwater from ice.
[c]Gage height, -0.05 ft.
[d]Gage height, 11.23 ft, observed.
[b]Backwater from ice.
[f]On many days in 1950, 1960-61, 1998, and 2006.