

05291000 WHETSTONE RIVER NEAR BIG STONE CITY, SD

LOCATION.--Lat 45°17'30", long 96°29'14", in SE¼NW¼ sec. 18, T.121 N., R.46 W., Grant County, Hydrologic Unit 07020001, on right bank 20 ft downstream from former highway bridge site, 1.5 mi west of Big Stone City, S.D., and 4.5 mi upstream from Big Stone Lake.

DRAINAGE AREA.--398 mi².

PERIOD OF RECORD.--March 1910 to November 1912 (no winter records), and March 1931 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 895: Drainage area. WSP 1308: 1932(M), 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 996.96 ft in sea level (NGVD of 1912). Mar. 8, 1910 to Nov. 30, 1912, nonrecording gage 2 mi downstream at different datum. Mar. 18, 1931 to May 3, 1939, nonrecording gage, at site 20 ft upstream at present datum. May 4, 1939 to Nov. 8, 1952, water-stage recorder at site 80 ft down-stream at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair to poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 26 ft in June 1919, present site and datum, from information by local resident, discharge 29,000 ft³/s, from dam break.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 230 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 17	1000	*e325	*5.19	No other peak greater than base discharge.			

Minimum discharge (daily), e1.6 ft³/s, Sept. 9.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	14	e13	e9.1	e7.4	e4.5	e37	28	21	32	6.4	e2.3
2	5.2	12	11	e9.0	e7.5	e4.4	e37	27	20	26	6.2	e2.3
3	5.3	12	e11	e8.9	e7.3	e4.3	e36	26	19	22	5.9	e2.2
4	11	12	e11	e8.8	e7.2	e4.2	e36	24	19	20	5.8	e2.1
5	13	12	e10	e8.6	e6.9	e4.2	e34	26	19	18	5.5	e2.0
6	12	12	e10	e8.5	e6.7	e4.1	e31	27	20	16	5.4	e2.0
7	11	12	e10	e8.4	e6.6	e4.1	e28	27	22	14	5.4	e1.9
8	9.7	12	e10	e8.4	e6.4	e4.0	e26	30	34	12	5.0	e1.8
9	9.0	11	e11	e8.4	e6.2	e3.9	e24	41	33	13	e4.9	e1.6
10	9.5	13	e12	e8.4	e6.0	e3.9	e22	53	32	12	e4.9	e1.8
11	9.1	13	e12	e8.4	e5.8	e3.8	e21	99	31	11	e4.6	e2.0
12	8.9	12	e11	e8.2	e5.6	e3.8	e20	101	28	10	e3.7	e1.9
13	7.6	12	e11	e8.0	e5.5	e3.8	e20	79	25	8.8	e3.2	e1.7
14	7.1	12	e11	e7.8	e5.5	e19	e20	76	24	8.1	e2.9	e1.9
15	8.4	12	e11	e7.5	e5.4	e73	e21	75	21	7.5	e2.7	e2.1
16	8.6	13	e11	e7.3	e5.4	e174	e24	87	18	7.0	e2.5	e2.0
17	8.7	12	e11	e7.1	e5.4	e325	e30	77	16	7.4	e2.2	e1.9
18	9.4	11	e11	e6.9	e5.4	e231	e41	61	14	8.6	e2.1	e2.6
19	9.0	12	e11	e6.8	e5.5	e143	e55	67	13	7.3	e2.2	e3.4
20	9.0	12	e11	e6.6	e5.8	e87	70	54	10	13	e2.3	e3.1
21	9.5	12	e11	e6.4	e5.8	e73	85	44	8.6	20	e2.5	e3.9
22	9.7	12	e10	e6.1	e5.6	e69	72	40	8.9	28	e2.7	e4.1
23	9.6	12	e10	e5.8	e5.3	e73	57	38	8.6	33	e2.5	e4.4
24	9.7	11	e10	e5.6	e5.1	e66	48	36	9.4	25	e2.1	e3.9
25	9.7	12	e9.6	e5.5	e5.0	e61	41	35	18	20	e1.8	e3.4
26	9.1	11	e9.3	e5.6	e4.8	e57	36	33	116	15	e1.7	e2.8
27	9.5	11	e9.3	e6.0	e4.7	e53	33	32	195	12	e1.7	e2.6
28	11	11	e9.6	e6.4	e4.6	e48	31	31	122	10	e2.5	e2.5
29	9.5	11	e9.6	e6.6	---	e43	27	28	63	8.6	e2.7	e2.9
30	9.7	10	e9.4	e6.9	---	e39	28	25	43	7.2	e2.4	2.9
31	11	---	e9.3	e7.2	---	e38	---	24	---	6.4	e2.3	---
TOTAL	285.2	356	327.1	229.2	164.4	1,725.0	1,091	1,451	1,031.5	458.9	108.7	76.0
MEAN	9.20	11.9	10.6	7.39	5.87	55.6	36.4	46.8	34.4	14.8	3.51	2.53
MAX	13	14	13	9.1	7.5	325	85	101	195	33	6.4	4.4
MIN	5.2	10	9.3	5.5	4.6	3.8	20	24	8.6	6.4	1.7	1.6
AC-FT	566	706	649	455	326	3,420	2,160	2,880	2,050	910	216	151
CFSM	0.02	0.03	0.03	0.02	0.01	0.14	0.09	0.12	0.09	0.04	0.01	0.01
IN.	0.03	0.03	0.03	0.02	0.02	0.16	0.10	0.14	0.10	0.04	0.01	0.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 2003, BY WATER YEAR (WY)

MEAN	14.7	14.8	10.0	6.63	15.2	155	222	92.9	78.7	56.8	19.4	10.3
MAX	280	122	56.0	36.3	168	612	1,677	491	478	885	327	77.0
(WY)	(1996)	(1996)	(1999)	(1994)	(1998)	(1978)	(1997)	(1972)	(1984)	(1993)	(1991)	(1995)
MIN	0.60	0.40	0.20	0.000	0.000	2.85	3.63	0.77	1.42	0.035	0.000	0.36
(WY)	(1932)	(1935)	(1935)	(1934)	(1934)	(1969)	(1934)	(1934)	(1936)	(1934)	(1934)	(1935)

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SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1910 - 2003	
ANNUAL TOTAL	14,740.2		7,304.0		a59.6	
ANNUAL MEAN	40.4		20.0		232	
HIGHEST ANNUAL MEAN					1.52	
LOWEST ANNUAL MEAN					1934	
HIGHEST DAILY MEAN	1,080	Mar 30	325	Mar 17	8,090	Apr 8, 2001
LOWEST DAILY MEAN	4.3	Sep 24	1.6	Sep 9	b0.00	Sep 13, 1931
ANNUAL SEVEN-DAY MINIMUM	4.6	Sep 19	1.8	Sep 7	0.00	Jul 31, 1933
MAXIMUM PEAK FLOW			c325	Mar 17	9,930	Apr 8, 2001
MAXIMUM PEAK STAGE			d5.19	Mar 17	15.93	Apr 8, 2001
INSTANTANEOUS LOW FLOW			f1.6	Sep 9	b0.00	Sep 13, 1931
ANNUAL RUNOFF (AC-FT)	29,240		14,490		43,210	
ANNUAL RUNOFF (CFSM)	0.10		0.050		0.15	
ANNUAL RUNOFF (INCHES)	1.38		0.68		2.04	
10 PERCENT EXCEEDS	89		43		110	
50 PERCENT EXCEEDS	18		10		9.0	
90 PERCENT EXCEEDS	8.3		2.7		1.5	

- a Median of annual mean discharges is 44 ft³/s.
- b Many days, several years.
- c Estimated, maximum daily.
- d Backwater from ice.
- e Estimated.
- f Minimum daily discharge, backwater from beaver dam.

