

MINNESOTA RIVER BASIN--Continued

05291000 WHETSTONE RIVER NEAR BIG STONE CITY, SD

LOCATION.--Lat 45°17'30", long 96°29'14", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ 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 downstream 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 30	0200	*1,690	*7.89	May 13	2300	278	3.38
Apr 8	1900	233	3.12	Jun 23	0000	550	4.80
May 10	1500	243	3.17				

Minimum discharge, 4.0 ft³/s, Sept. 25, gage height, 0.79 ft.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.8	15	22	e22	e20	e42	320	108	34	23	9.3	8.1
2	9.6	15	24	e22	e20	e38	220	86	32	20	8.3	7.8
3	9.5	15	26	e22	e20	e35	130	72	30	20	14	7.3
4	9.3	15	26	e21	e20	e33	97	63	29	18	16	6.9
5	9.8	15	26	e21	e20	e32	89	57	29	17	14	6.9
6	10	15	28	e21	e21	e31	88	54	30	16	13	7.4
7	9.5	15	30	e21	e21	e30	108	53	29	15	12	7.0
8	10	16	27	e22	e22	e29	197	64	30	14	11	6.0
9	11	17	27	e23	e22	e28	195	133	32	13	10	6.0
10	13	16	25	e23	e23	e27	148	225	29	13	10	6.4
11	13	17	26	e23	e24	e27	133	185	26	13	10	6.3
12	15	16	26	e23	e25	e27	134	164	24	13	15	6.3
13	17	15	24	e22	e27	e26	119	220	23	13	18	6.2
14	16	17	24	e22	e29	e26	108	247	22	12	22	6.1
15	15	18	23	e21	e31	e26	98	169	20	11	22	5.9
16	14	17	24	e21	e33	e27	90	121	19	11	18	5.2
17	13	17	24	e21	e37	e27	79	94	18	9.4	15	4.8
18	14	17	22	e20	e43	e27	70	81	17	10	12	4.9
19	13	17	e28	e20	e64	e27	62	71	17	9.7	10	4.9
20	13	16	24	e20	e89	e27	55	66	16	10	9.8	4.9
21	12	17	e23	e20	e95	e26	55	62	74	12	15	4.6
22	12	16	e22	e20	e97	e26	56	60	442	15	18	4.4
23	12	17	e22	e20	e90	e26	56	59	427	16	14	4.4
24	13	22	e23	e21	e83	e26	56	55	204	15	13	4.3
25	13	31	e23	e21	e74	e26	54	54	101	15	11	4.8
26	18	29	e23	e20	e65	e25	51	53	67	14	11	5.3
27	17	e36	e23	e20	e53	e32	52	51	52	13	11	6.5
28	15	33	e22	e20	e47	e79	66	51	40	12	9.6	5.5
29	15	26	e22	e20	---	e362	82	49	33	12	8.8	6.2
30	15	23	e22	e20	---	1080	101	45	26	11	8.4	6.2
31	15	---	e22	e20	---	549	---	41	---	9.8	8.3	---
TOTAL	401.5	571	753	653	1215	2849	3169	2913	1972	425.9	397.5	177.5
MEAN	12.95	19.03	24.29	21.06	43.39	91.90	105.6	93.97	65.73	13.74	12.82	5.917
MAX	18	36	30	23	97	1080	320	247	442	23	22	8.1
MIN	9.3	15	22	20	20	25	51	41	16	9.4	8.3	4.3
AC-FT	796	1130	1490	1300	2410	5650	6290	5780	3910	845	788	352
CFSM	0.03	0.05	0.06	0.05	0.11	0.23	0.27	0.24	0.17	0.03	0.03	0.01
IN.	0.04	0.05	0.07	0.06	0.11	0.27	0.30	0.27	0.18	0.04	0.04	0.02

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	14.75	14.81	9.997	6.623	15.38	155.9	224.2	93.53	79.29	57.36	19.58	10.45
MAX	280	122	56.0	36.3	168	612	1677	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

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1910 - 2002

ANNUAL TOTAL		62342.7		15497.4								
ANNUAL MEAN		170.8		42.46						60.21a		
HIGHEST ANNUAL MEAN										232		1997
LOWEST ANNUAL MEAN										1.52		1934
HIGHEST DAILY MEAN				8090	Apr 8		1080	Mar 30		8090	Apr 8	2001
LOWEST DAILY MEAN				5.2	Jan 1		4.3	Sep 24		0.00b	Sep 13	1931
ANNUAL SEVEN-DAY MINIMUM				6.0	Jan 1		4.6	Sep 19		0.00	Jul 31	1933
MAXIMUM PEAK FLOW							1690	Mar 30		9930	Apr 8	2001
MAXIMUM PEAK STAGE							7.89	Mar 30		15.93	Apr 8	2001
INSTANTANEOUS LOW FLOW							4.0	Sep 25		0.00b	Sep 13	1931
ANNUAL RUNOFF (AC-FT)			123700				30740			43620		
ANNUAL RUNOFF (CFSM)			0.43				0.11			0.15		
ANNUAL RUNOFF (INCHES)			5.83				1.45			2.06		
10 PERCENT EXCEEDS			387				89			112		
50 PERCENT EXCEEDS			17				22			9.0		
90 PERCENT EXCEEDS			7.0				9.4			1.4		

a Median of annual mean discharges is 46.1 ft³/s.
 b Many days, several years.
 e Estimated.

