

## MINNESOTA RIVER BASIN--Continued

05317000 COTTONWOOD RIVER NEAR NEW ULM, MN

LOCATION.--Lat 44°17'29", long 94°26'24", in SW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 33, T.110 N., R.30 W., Brown County, Hydrologic Unit 07020008, on left bank 600 ft upstream from highway bridge, 1.8 mi south of New Ulm, and 3.2 mi upstream from mouth.

DRAINAGE AREA.--1,300 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1909 to December 1913, March 1931 to March 1938, August 1938 to current year (winter records incomplete prior to 1936).

REVISED RECORDS.--WSP 355: 1912.

GAGE.--Water-stage recorder. Datum of gage is 796.83 ft above sea level (NGVD of 1929). July 1, 1909 to Dec. 13, 1913, nonrecording gage at site 2.7 mi upstream at different datum. Mar. 15, 1931 to Mar. 31, 1938, nonrecording gage 2.2 mi upstream at datum 11.41 ft higher. Aug. 23, 1938 to June 25, 1948, nonrecording gage at present site and datum.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar 31	(daily)	e1,400	--	Jun 4	0700	*5,390	*11.95
May 9	2300	1,780	7.79	Jun 23	0900	2,830	9.36

Minimum discharge, 52 ft<sup>3</sup>/s, Oct. 7, gage height, 2.90 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	61	327	e175	e173	e230	1320	956	708	878	200	209
2	69	63	324	e175	e170	e225	1200	967	706	750	174	189
3	66	60	278	e176	e170	e220	1160	898	2050	652	151	171
4	61	59	324	e178	e171	e217	998	812	5050	582	142	156
5	58	59	366	e180	e173	e213	846	743	4120	537	139	142
6	54	58	495	e182	e178	e212	739	687	3110	487	155	131
7	53	60	648	e183	e182	e212	688	671	2450	447	190	120
8	53	60	666	e183	e188	e214	680	778	1970	402	269	112
9	54	60	e555	e183	e196	e215	678	1420	1620	355	369	103
10	57	59	e550	e182	e206	e216	670	1730	1360	336	370	98
11	56	56	e470	e181	e210	e217	679	1710	1260	369	286	88
12	55	57	e440	e180	e222	e217	689	1690	1420	416	259	80
13	62	57	e420	e178	e230	e218	734	1610	1270	359	233	76
14	70	56	e405	e176	e245	e220	798	1460	1050	340	210	77
15	73	58	e360	e174	e255	e220	846	1350	951	307	190	73
16	68	57	e320	e173	e265	e221	854	1250	883	273	175	70
17	65	57	e290	e172	e275	e222	826	1130	826	245	160	68
18	65	58	e260	e171	e289	e223	765	1020	825	221	142	71
19	68	55	e235	e170	e294	e223	700	938	731	200	129	71
20	70	56	e220	e170	e297	e222	644	877	758	183	123	69
21	68	56	e210	e170	e296	e221	612	828	1040	171	186	66
22	66	58	e200	e171	e293	e221	593	778	2170	159	220	59
23	80	65	e195	e172	e288	e221	595	740	2760	147	456	56
24	81	120	e190	e173	e280	e222	624	684	2480	137	617	54
25	73	154	e187	e174	e269	e224	644	631	2540	165	577	77
26	73	353	e186	e175	e255	e230	626	588	2230	148	484	97
27	67	482	e185	e176	e247	e255	611	564	1860	129	411	89
28	64	471	e182	e178	e239	e340	618	556	1550	137	341	82
29	63	385	e178	e178	---	e560	690	531	1270	215	291	80
30	61	328	e176	e177	---	e1000	833	557	1050	278	261	81
31	61	---	e175	e176	---	e1400	---	634	---	241	235	---
TOTAL	2008	3638	10017	5462	6552	9271	22960	29788	52068	10266	8145	2915
MEAN	64.8	121	323	176	234	299	765	961	1736	331	263	97.2
MAX	81	482	666	183	297	1400	1320	1730	5050	878	617	209
MIN	53	55	175	170	170	212	593	531	706	129	123	54
AC-FT	3980	7220	19870	10830	13000	18390	45540	59080	103300	20360	16160	5780
CFSM	0.05	0.09	0.25	0.14	0.18	0.23	0.59	0.74	1.34	0.25	0.20	0.07
IN.	0.06	0.10	0.29	0.16	0.19	0.27	0.66	0.85	1.49	0.29	0.23	0.08

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	172	159	110	58.3	101	644	1083	599	634	371	191	150
MAX	3208	1099	572	282	628	3350	7075	3497	5831	3815	1791	2438
(WY)	1969	1980	1980	1992	1983	1997	1969	1993	1993	1993	1993	1986
MIN	4.57	7.97	5.77	1.61	1.47	13.9	40.0	7.57	8.58	4.37	1.05	3.28
(WY)	1934	1940	1936	1940	1940	1965	1959	1934	1911	1934	1934	1933

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1909 - 2002

ANNUAL TOTAL		321696		163090								
ANNUAL MEAN		881		447						383a		
HIGHEST ANNUAL MEAN										1796		1993
LOWEST ANNUAL MEAN										41.1		1940
HIGHEST DAILY MEAN			18700		Apr 25		5050		Jun 4	27100		Apr 9 1969
LOWEST DAILY MEAN			44		Jan 20		53		Oct 7, 8	0.60		Aug 1 1934
ANNUAL SEVEN-DAY MINIMUM			44		Feb 16		55		Oct 6	0.64		Feb 1 1940
MAXIMUM PEAK FLOW							5390		Jun 4	28700		Apr 10 1969
MAXIMUM PEAK STAGE							11.95		Jun 4	20.86		Apr 8 1965
INSTANTANEOUS LOW FLOW							52		Oct 7	0.50b		Nov 27 1952
ANNUAL RUNOFF (AC-FT)			638100				323500			277200		
ANNUAL RUNOFF (CFSM)			0.68				0.34			0.29		
ANNUAL RUNOFF (INCHES)			9.21				4.67			4.00		
10 PERCENT EXCEEDS			2040				1010			920		
50 PERCENT EXCEEDS			128				221			97		
90 PERCENT EXCEEDS			46				63			14		

a Median of annual mean discharges is 252 ft<sup>3</sup>/s.

b Minimum observed.

e Estimated.



