



Water-Data Report 2009

05317000 COTTONWOOD RIVER NEAR NEW ULM, MN

Minnesota Basin
Cottonwood Subbasin

LOCATION.--Lat 44°17'29", long 94°26'24" referenced to North American Datum of 1927, in SW ¼ NE ¼ sec.33, T.110 N., R.30 W., Brown County, MN, 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 mi².

SURFACE-WATER RECORDS

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. Unpublished, 2009: 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 796.83 ft above sea level (NGVD of 1929). July 1, 1909 to Dec. 13, 1913, non-recording gage at site 2.7 mi upstream at different datum. Mar. 15, 1931 to Mar. 31, 1938, non-recording gage 2.2 mi upstream at datum 11.41 ft higher. Aug. 23, 1938 to June 25, 1948, non-recording 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 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 20	2015	(ice)	*8.01
Mar 25	0500	*1,330	6.50

Minimum discharge, 14 ft³/s, Aug. 15, gage height, 2.22 ft.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	38	71	e72	e40	e34	e143	459	290	170	158	34	29
2	38	69	e70	e39	e34	e137	423	300	161	143	31	27
3	36	67	e68	e39	e34	e134	394	300	151	130	32	26
4	36	67	e66	e38	e32	e133	367	290	143	126	29	25
5	38	68	e64	e36	e32	e133	356	287	136	118	29	24
6	37	78	e64	e36	e33	e156	339	277	141	110	25	23
7	53	83	e64	e35	e34	e209	331	277	147	104	27	22
8	52	84	e62	e35	e35	e272	329	295	185	105	25	21
9	53	85	e61	e35	e38	e357	325	325	246	112	26	28
10	54	85	e60	e35	e46	e350	321	346	358	117	26	24
11	61	85	e59	e35	e121	e314	315	383	389	118	22	22
12	58	92	e59	e35	e168	e293	309	408	394	117	20	30
13	63	91	e57	e34	e199	e270	301	401	364	119	22	40
14	59	92	e57	e33	e195	e258	295	383	333	115	18	30
15	53	93	e56	e32	e195	e280	290	356	307	107	15	27
16	49	103	e54	e31	e230	e367	283	329	291	98	22	24
17	48	105	e53	e32	e235	e586	276	304	291	90	32	22
18	47	95	e52	e33	e191	e685	272	281	305	85	31	21
19	46	94	e51	e33	e179	e709	271	269	362	79	63	20
20	46	97	e50	e33	e174	e739	267	253	349	72	106	19
21	48	67	e49	e33	e169	e769	264	236	322	67	74	21
22	63	e96	e47	e33	e168	e840	261	220	297	66	61	21
23	88	e100	e46	e32	e164	981	255	219	282	59	57	24
24	83	e99	e45	e31	e164	1,110	250	209	287	52	49	22
25	102	e94	e44	e31	e162	1,300	244	207	265	47	56	36
26	101	e92	e44	e32	e159	1,130	265	204	246	45	56	39
27	99	e90	e43	e32	e157	884	261	201	234	42	51	56
28	92	e85	e43	e32	e151	728	258	196	211	38	43	55
29	84	e83	e42	e32	---	626	263	190	189	35	38	49
30	80	e79	e42	e33	---	543	271	184	172	34	33	44
31	76	---	e40	e33	---	500	---	177	---	33	30	---
Total	1,881	2,589	1,684	1,053	3,533	15,936	9,115	8,597	7,728	2,741	1,183	871
Mean	60.7	86.3	54.3	34.0	126	514	304	277	258	88.4	38.2	29.0
Max	102	105	72	40	235	1,300	459	408	394	158	106	56
Min	36	67	40	31	32	133	244	177	136	33	15	19
Ac-ft	3,730	5,140	3,340	2,090	7,010	31,610	18,080	17,050	15,330	5,440	2,350	1,730
Cfs/m	0.05	0.07	0.04	0.03	0.10	0.40	0.23	0.21	0.20	0.07	0.03	0.02
In.	0.05	0.07	0.05	0.03	0.10	0.46	0.26	0.25	0.22	0.08	0.03	0.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 2009, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	187	162	112	64.1	106	630	1,060	631	675	364	184	149
Max	3,208	1,099	572	453	638	3,350	7,075	3,497	5,831	3,815	1,791	2,438
(WY)	(1969)	(1980)	(1980)	(2006)	(2006)	(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)

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SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1909 - 2009	
Annual total	137,481		56,911			
Annual mean	376		156		^a 385	
Highest annual mean					1,796	1993
Lowest annual mean					41.1	1940
Highest daily mean	2,770	May 4	1,300	Mar 25	27,100	Apr 9, 1969
Lowest daily mean	35	Sep 27	15	Aug 15	0.60	Aug 1, 1934
Annual seven-day minimum	37	Sep 24	21	Aug 10	0.64	Feb 1, 1940
Maximum peak flow			^b 1,330	Mar 25	28,700	Apr 10, 1969
Maximum peak stage			^c 8.01	Mar 20	20.86	Apr 8, 1965
Instantaneous low flow			14	Aug 15	^d 0.50	Nov 27, 1952
Annual runoff (ac-ft)	272,700		112,900		278,900	
Annual runoff (cfsm)	0.289		0.120		0.296	
Annual runoff (inches)	3.93		1.63		4.02	
10 percent exceeds	1,220		335		937	
50 percent exceeds	100		85		102	
90 percent exceeds	47		30		15	

^a Median of annual mean discharges is 280 ft³/s.

^b Gage height, 6.50 feet.

^c Backwater from ice.

^d Minimum observed.

