

UPPER MISSISSIPPI RIVER MAIN STEM--Continued

05345000 VERMILLION RIVER NEAR EMPIRE, MN

LOCATION.--Lat 44°40'00", long 93°03'17", in SW¹/₄NW¹/₄ sec. 24, T.114 N., R.19 W., Dakota County, Hydrologic Unit 07040001, on right bank and just downstream from County Road 79, 2 mi west of Empire and 4 mi northeast of Farmington.

DRAINAGE AREA.--129 mi².

PERIOD OF RECORD.--May 1942 to June 1945 (no record during July, August, and September 1944), September 1969 to September 1973 (discharge measurements only), October 1973 to current year. Prior to October 1975 published as "near Empire City".

GAGE.--Water-stage recorder. Datum of gage is 851.99 ft above sea level (NGVD of 1929, levels by U.S. Army Corps of Engineers). April 12, 1942 to June 30, 1944, and October 1, 1944 to July 7, 1945, nonrecording gage at same site and present datum.

REMARKS.--Records fair except those for estimated daily discharges, which are fair to poor. Some regulation at lower flows by wastewater treatment plant upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1965, reached a stage of 7.5 ft, from information by local resident; discharge 6,200 ft³/s, from rating extended above 2,100 ft³/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	51	50	45	42	131	55	59	106	57	62	49
2	53	50	50	45	44	110	57	58	147	61	62	48
3	50	48	51	45	45	97	57	57	115	62	58	55
4	49	48	50	45	42	93	54	55	133	57	56	54
5	47	50	49	44	43	84	54	55	289	67	53	52
6	45	47	49	45	43	80	52	54	247	84	53	49
7	44	47	48	44	43	79	50	53	151	67	52	49
8	46	47	47	45	44	81	50	75	122	223	65	47
9	46	47	47	44	45	95	51	74	103	537	65	54
10	45	53	46	45	45	89	50	68	92	843	58	52
11	45	67	46	44	43	79	56	76	80	481	55	52
12	44	57	46	44	45	76	57	78	75	246	52	50
13	44	56	46	45	44	78	63	71	76	176	72	51
14	43	53	46	45	44	78	65	67	84	146	67	51
15	44	53	46	45	45	77	66	64	79	126	54	49
16	44	49	44	44	44	72	66	63	84	114	51	49
17	45	49	44	45	44	68	66	65	77	105	94	48
18	46	49	44	45	44	69	64	119	75	98	100	48
19	46	49	45	44	44	68	68	159	72	96	77	47
20	47	48	45	e42	44	67	78	116	97	92	68	48
21	46	48	43	e42	44	64	91	97	108	88	63	47
22	46	49	43	43	45	63	84	87	95	83	60	48
23	45	59	42	43	52	64	82	80	86	79	57	48
24	45	76	43	43	80	72	78	73	81	76	54	48
25	46	64	44	42	147	73	71	66	76	77	54	48
26	45	58	44	42	399	69	70	63	73	77	55	47
27	46	59	44	42	370	66	70	61	69	75	53	46
28	45	56	44	43	201	60	64	66	64	68	53	45
29	46	54	45	43	154	59	61	63	65	65	52	45
30	63	52	46	44	---	58	59	78	61	61	50	45
31	55	---	45	45	---	56	---	87	---	61	50	---
TOTAL	1452	1593	1422	1362	2369	2375	1909	2307	3082	4548	1875	1469
MEAN	46.8	53.1	45.9	43.9	81.7	76.6	63.6	74.4	103	147	60.5	49.0
MAX	63	76	51	45	399	131	91	159	289	843	100	55
MIN	43	47	42	42	42	56	50	53	61	57	50	45
AC-FT	2880	3160	2820	2700	4700	4710	3790	4580	6110	9020	3720	2910
CFSM	.36	.41	.36	.34	.63	.59	.49	.58	.80	1.14	.47	.38
IN.	.42	.46	.41	.39	.68	.68	.55	.67	.89	1.31	.54	.42

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2000, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	56.3	51.3	40.4	32.2	38.6	102	109	92.9	92.5	76.3	59.7	71.4
MAX	160	133	79.5	58.6	89.8	199	281	223	290	258	234	313
(WY)	1995	1993	1993	1998	1998	1983	1998	1986	1993	1997	1997	1992
MIN	14.9	15.6	12.4	11.0	13.1	25.4	35.2	29.3	23.0	16.0	14.3	14.6
(WY)	1977	1977	1977	1977	1977	1975	1977	1977	1988	1988	1976	1976

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1942 - 2000
ANNUAL TOTAL	35119	25763	
ANNUAL MEAN	96.2	70.4	68.8
HIGHEST ANNUAL MEAN			147 1998
LOWEST ANNUAL MEAN			23.6 1977
HIGHEST DAILY MEAN	518 Apr 12	843 Jul 10	3000 Sep 16 1992
LOWEST DAILY MEAN	34 Jan 7	42 Dec 23 ^a	8.4 Jan 15 1975
ANNUAL SEVEN-DAY MINIMUM	34 Jan 7	42 Jan 20	9.0 Jan 13 1975
INSTANTANEOUS PEAK FLOW		949 Jul 10	6570 Sep 16 1992
INSTANTANEOUS PEAK STAGE		7.30 Jul 10	10.00 Sep 16 1992
INSTANTANEOUS LOW FLOW		37 Jan 26 ^b	6.8 Aug 15 1992
ANNUAL RUNOFF (AC-FT)	69660	51100	49820
ANNUAL RUNOFF (CFSM)	.75	.55	.53
ANNUAL RUNOFF (INCHES)	10.13	7.43	7.24
10 PERCENT EXCEEDS	197	95	132
50 PERCENT EXCEEDS	65	54	45
90 PERCENT EXCEEDS	42	44	20

^a Also occurred Jan. 20,21,25-27, Feb. 1,4.
^b Also occurred Feb. 11, result of regulation.
^e Estimated.

