

05345000 VERMILLION RIVER NEAR EMPIRE, MN

LOCATION.--Lat 44°40'00", long 93°03'17", in SW $\frac{1}{4}$ NW $\frac{1}{4}$ 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 good. 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 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	e40	33	31	29	44	83	54	187	60	51	39
2	38	e39	32	31	29	70	77	52	168	58	52	38
3	40	e41	31	30	28	70	72	53	149	60	51	36
4	43	e42	31	29	28	66	69	51	124	72	53	35
5	44	e43	32	29	28	55	66	50	109	63	50	39
6	44	e42	31	28	29	51	65	50	119	64	48	76
7	42	e40	32	28	29	53	62	49	108	75	48	56
8	42	e38	32	28	29	51	61	49	96	71	47	46
9	45	e36	32	28	30	48	62	51	138	65	46	43
10	48	e36	32	28	29	52	63	69	246	61	45	42
11	51	37	30	30	29	65	62	60	226	93	45	41
12	55	38	30	30	29	57	60	61	269	130	46	40
13	53	37	30	29	29	55	58	76	355	98	44	40
14	48	34	31	30	30	62	57	80	224	82	42	59
15	48	34	31	29	28	60	55	68	160	78	40	166
16	48	34	31	30	30	57	57	64	131	77	51	355
17	47	35	29	30	29	62	57	77	115	74	55	313
18	46	34	30	29	29	86	56	79	103	69	50	149
19	45	34	30	29	30	90	70	68	95	68	46	119
20	44	33	30	28	33	101	68	84	89	65	42	101
21	38	32	31	28	33	84	79	93	86	75	43	90
22	39	33	30	32	33	70	80	128	82	77	43	85
23	37	34	29	28	33	66	72	116	79	66	43	80
24	38	34	30	28	31	68	66	132	75	60	42	78
25	38	33	28	28	31	80	74	119	72	57	42	72
26	38	33	28	29	30	151	75	104	69	56	42	68
27	38	33	30	28	31	120	68	119	68	54	41	67
28	e38	31	33	28	31	134	64	120	68	52	40	65
29	e38	32	33	28	33	123	61	124	64	52	40	63
30	e39	32	32	28	---	102	56	178	61	51	41	59
31	e41	---	31	28	---	91	---	204	---	51	38	---
TOTAL	1,332	1,074	955	897	870	2,344	1,975	2,682	3,935	2,134	1,407	2,560
MEAN	43.0	35.8	30.8	28.9	30.0	75.6	65.8	86.5	131	68.8	45.4	85.3
MAX	55	43	33	32	33	151	83	204	355	130	55	355
MIN	37	31	28	28	28	44	55	49	61	51	38	35
AC-FT	2,640	2,130	1,890	1,780	1,730	4,650	3,920	5,320	7,810	4,230	2,790	5,080
CFSM	0.33	0.28	0.24	0.22	0.23	0.59	0.51	0.67	1.02	0.53	0.35	0.66
IN.	0.38	0.31	0.28	0.26	0.25	0.68	0.57	0.77	1.13	0.62	0.41	0.74

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2004, BY WATER YEAR (WY)

MEAN	61.3	52.4	41.2	33.0	38.4	97.0	114	96.3	97.4	75.1	61.8	72.7
MAX	263	133	79.5	58.6	89.8	199	337	223	290	258	234	313
(WY)	(2003)	(1993)	(1993)	(1998)	(1998)	(1983)	(2001)	(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)

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SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1942 - 2004	
ANNUAL TOTAL	23,615		22,165			
ANNUAL MEAN	64.7		60.6		70.4	
HIGHEST ANNUAL MEAN					147	1998
LOWEST ANNUAL MEAN					23.6	1977
HIGHEST DAILY MEAN	685	May 12	a355	Jun 13	3,000	Sep 16, 1992
LOWEST DAILY MEAN	28	Dec 25	b28	Dec 25	8.4	Jan 15, 1975
ANNUAL SEVEN-DAY MINIMUM	29	Dec 20	28	Jan 23	9.0	Jan 13, 1975
MAXIMUM PEAK FLOW			427	Sep 17	6,570	Sep 16, 1992
MAXIMUM PEAK STAGE			6.14	Sep 17	10.00	Sep 16, 1992
INSTANTANEOUS LOW FLOW			c20	Jan 18	c6.8	Aug 15, 1992
ANNUAL RUNOFF (AC-FT)	46,840		43,960		50,970	
ANNUAL RUNOFF (CFSM)	0.502		0.469		0.545	
ANNUAL RUNOFF (INCHES)	6.81		6.39		7.41	
10 PERCENT EXCEEDS	105		103		133	
50 PERCENT EXCEEDS	46		48		46	
90 PERCENT EXCEEDS	32		29		22	

- a Also occurred Sept. 16.
- b Many days.
- c Result of regulation.
- e Estimated.

