

ST. CROIX RIVER BASIN--Continued

05335151 LOWER TAMARACK RIVER NEAR MARKVILLE, MN

LOCATION.--Lat 46°04'49", long 92°23'37", in SE¹/₄NW¹/₄ sec. 32, T. 42 N., R. 16 W., Pine County, Hydrologic Unit 07030001, at township road 3 miles southeast of Markville.

DRAINAGE AREA.-- 188 mi².

PERIOD OF RECORD.--October 1998 to November 1999.

GAGE.--Water-stage recorder.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e31	e31	e70	e37	e18	e19	413	93	50	178	1270	120
2	e29	e30	e68	e30	e18	e19	367	85	50	177	882	103
3	e28	e30	65	e26	e17	e19	333	77	49	165	641	96
4	e28	e29	62	e22	e17	e18	456	72	45	179	930	89
5	e28	e28	79	e20	e17	e17	740	87	69	171	919	115
6	e29	e28	138	e19	e17	e16	888	138	240	216	634	136
7	e31	e28	135	e17	e17	e15	994	283	292	225	437	118
8	e33	e28	117	e16	e17	e15	981	425	301	197	327	186
9	e34	e29	112	e15	e17	e15	823	389	248	217	273	287
10	e33	e65	110	e14	e18	e15	642	316	200	188	282	264
11	e32	e84	89	e13	e19	e15	553	270	198	153	265	209
12	e30	e80	85	e14	e20	e15	538	307	257	129	259	191
13	e29	e76	81	e15	e20	e16	483	319	232	111	518	209
14	e29	e74	71	e16	e19	e17	416	284	176	97	589	186
15	e29	e72	73	e17	e20	e18	373	245	132	87	435	164
16	e31	e70	59	e18	e19	e20	406	219	102	83	326	139
17	e31	e70	59	e19	e19	e24	401	214	85	105	260	122
18	e56	e68	57	e19	e19	e27	359	210	69	99	239	109
19	e52	e74	e56	e19	e19	e32	322	183	58	112	240	103
20	e47	e84	e54	e19	e19	38	286	173	52	115	210	112
21	e44	e76	e50	e19	e19	42	257	176	45	93	186	99
22	e41	e76	e48	e20	e18	48	235	158	104	81	175	89
23	e38	e80	e47	e19	e18	52	209	144	267	72	232	81
24	e36	e100	e47	e18	e18	59	186	139	497	118	490	74
25	e34	e92	e45	e18	e18	65	168	123	436	129	449	69
26	e32	e88	e43	e18	e18	71	150	106	336	256	310	78
27	e32	e82	e40	e17	e18	88	135	93	255	437	248	115
28	e32	e80	e41	e18	e19	207	123	82	211	381	219	111
29	e32	e76	e42	e18	---	403	113	72	219	281	192	95
30	e32	e74	e44	e18	---	470	101	63	197	233	163	85
31	e32	---	e42	e18	---	457	---	54	---	742	141	---
TOTAL	1074	1902	2129	586	512	2352	12451	5599	5472	5827	12741	3954
MEAN	34.6	63.4	68.7	18.9	18.3	75.9	415	181	182	188	411	132
MAX	56	100	138	37	20	470	994	425	497	742	1270	287
MIN	28	28	40	13	17	15	101	54	45	72	141	69
AC-FT	2130	3770	4220	1160	1020	4670	24700	11110	10850	11560	25270	7840
CFSM	.18	.34	.37	.10	.10	.40	2.21	.96	.97	1.00	2.19	.70
IN.	.21	.38	.42	.12	.10	.47	2.46	1.11	1.08	1.15	2.52	.78

e Estimated

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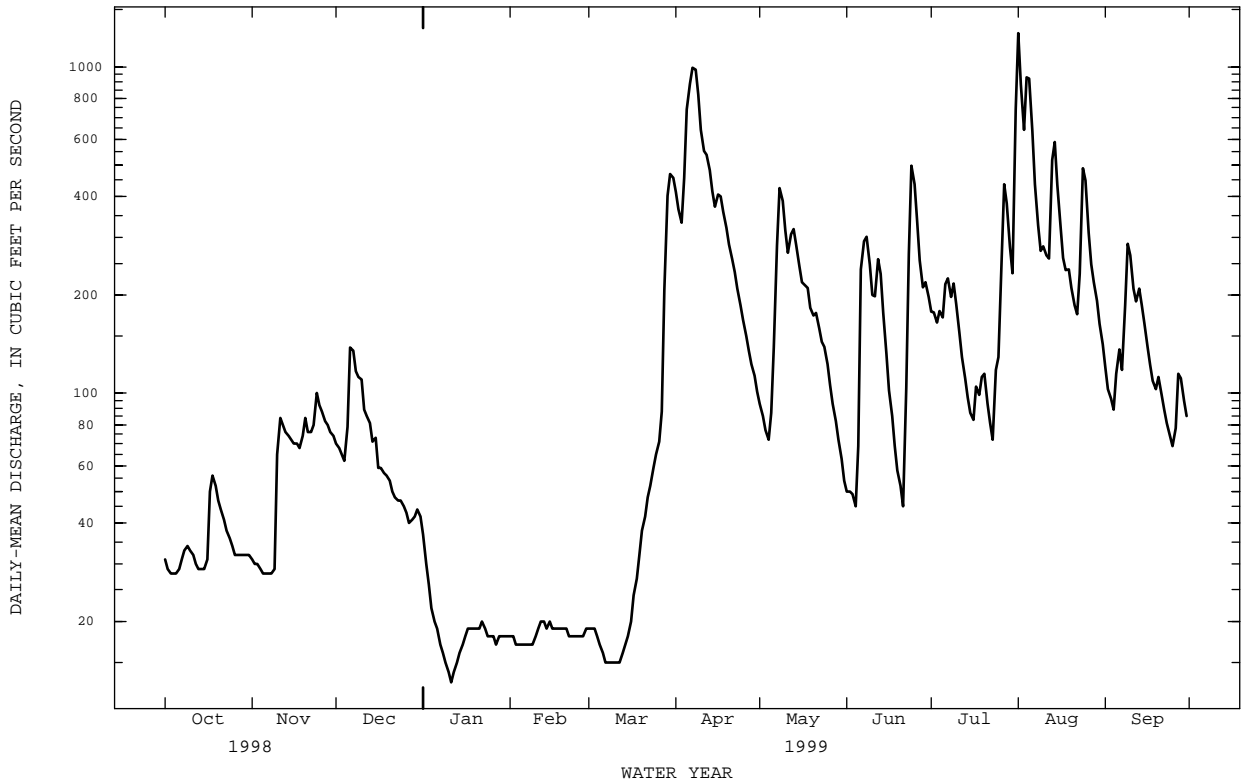
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	34.6	63.4	68.7	18.9	18.3	75.9	415	181	182	188	411	132
MAX	34.6	63.4	68.7	18.9	18.3	75.9	415	181	182	188	411	132
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999
MIN	34.6	63.4	68.7	18.9	18.3	75.9	415	181	182	188	411	132
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999

SUMMARY STATISTICS

FOR 1999 WATER YEAR

ANNUAL TOTAL	54599
ANNUAL MEAN	150
HIGHEST DAILY MEAN	1270 Aug 1
LOWEST DAILY MEAN	13 Jan 11
ANNUAL SEVEN-DAY MINIMUM	15 Jan 8
INSTANTANEOUS PEAK FLOW	1340 Aug 1
INSTANTANEOUS PEAK STAGE	10.45 Aug 1
ANNUAL RUNOFF (AC-FT)	108300
ANNUAL RUNOFF (CFSM)	.80
ANNUAL RUNOFF (INCHES)	10.80
10 PERCENT EXCEEDS	376
50 PERCENT EXCEEDS	81
90 PERCENT EXCEEDS	18



ST. CROIX RIVER BASIN--Continued

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(National Water Quality Assessment Program)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1998 to September 1999.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CAC03 (39086)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV										
23...	1550	80	--	121	7.7	2.3	5.6	--	.028	<.010
DEC										
10...	1430	114	--	--	--	--	--	--	.028	<.010
JAN										
14...	1645	16	--	192	7.6	.1	12.8	--	.112	.013
FEB										
24...	1030	18	--	231	7.2	-.1	--	--	.113	<.010
MAR										
12...	1630	15	--	232	7.4	.9	12.9	10	.067	<.010
29...	1210	380	380	66	7.0	1.8	12.9	--	.106	<.010
APR										
07...	1120	994	--	40	6.3	3.3	11.8	--	.029	<.010
29...	0950	114	--	69	7.3	11.9	10.1	--	.032	<.010
MAY										
12...	1120	308	--	55	7.3	11.5	9.8	--	.028	<.010
JUN										
10...	1420	196	--	67	7.2	21.8	7.0	--	.044	<.010
24...	0930	527	--	60	6.9	20.0	7.1	--	.038	<.010
JUL										
09...	1130	221	--	77	7.2	19.7	7.4	--	.027	<.010
26...	1300	258	--	78	6.9	25.5	6.5	--	.049	<.010
AUG										
11...	0950	271	--	72	7.3	18.8	7.4	--	.053	<.010
SEP										
08...	1450	224	--	98	7.3	19.3	8.3	--	<.020	<.010

DATE	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV									
23...	.63	.70	.146	E.040	<0.05	.014	2.7	3	100
DEC									
10...	.71	.83	.094	<.050	<0.05	.014	1.7	2	67
JAN									
14...	.67	.71	.101	.032	.023	.021	4.8	3	82
FEB									
24...	.48	.51	.168	.037	.021	.015	5.9	2	75
MAR									
12...	.41	.40	.193	.034	.018	.020	6.6	3	95
29...	.81	1.1	.485	.090	.029	.017	1.2	18	92
APR									
07...	.84	.88	.224	.055	.026	.010	.64	16	80
29...	.78	2.2	<.050	.028	.016	.017	1.3	5	89
MAY									
12...	1.0	2.3	<.050	.034	.018	<.010	.52	5	89
JUN									
10...	1.2	2.1	.051	.051	.029	.018	.51	7	78
24...	1.0	1.2	.055	.082	.038	.026	.92	20	87
JUL									
09...	1.3	1.5	.082	.081	.051	.015	.63	--	--
26...	1.1	1.4	.119	.092	.034	.010	<.10	10	98
AUG									
11...	1.2	1.3	.054	.079	.037	.014	.68	11	88
SEP									
08...	1.1	1.4	.086	.093	.036	.018	1.2	16	89

