

RED RIVER OF THE NORTH BASIN

05061000 BUFFALO RIVER NEAR HAWLEY, MN

LOCATION.--Lat 46° 51'00", long 96° 19'45", in NW¼SE¼ sec. 14, T.139 N., R.45 W., Clay County, Hydrologic Unit 09020106, near left downstream end of bridge on farm lane, 2 mi southwest of Hawley.

DRAINAGE AREA.--322 mi².

PERIOD OF RECORD.--March 1945 to current year, WY 1981 (annual maximum only), March 1982 to September 1985 (no winter records).

REVISED RECORDS.--WSP 1308: 1945-46(M), 1948(M).

GAGE.--Water-stage recorder. Datum of gage is 1,111.91 ft above sea level. Prior to Jan. 29, 1953, nonrecording gage at bridge 1,800 ft upstream at datum 3.17 ft lower.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 11.3 ft, present datum, spring of 1921, from information by local resident.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
JUL	AUG	SEP							
1	30	e96	e43	e33	e35	e30	e100	355	233
197	92	131							
2	37	e94	e43	e34	e34	e30	e380	326	218
193	89	138							
3	29	e92	e43	e34	e34	e30	e450	309	209
206	108	114							
4	26	e82	e43	e33	e34	e29	e1400	300	204
245	109	98							
5	24	e80	e42	e33	e34	e29	e1900	286	191
286	105	86							
6	25	e81	e42	e32	e34	e29	e2360	265	177
296	112	78							
7	23	e83	e42	e32	e33	e29	e1600	249	167
284	109	73							
8	22	e86	e42	e32	e33	e29	e1520	250	156
316	98	77							
9	22	e79	e42	e31	e33	e29	e1430	250	149
329	93	76							

10	21	e72	e42	e31	e33	e29	e1350	240	143
311	91	76							
11	21	e68	e42	e32	e32	e29	e1230	235	136
281	88	69							
12	21	e64	e42	e32	e32	e28	e1180	236	129
264	84	79							
13	21	e59	e41	e32	e32	e28	e1350	230	137
301	81	103							
14	20	e54	e40	e32	e32	e28	1600	222	141
434	78	97							
15	20	e51	e40	e32	e31	e28	1540	216	144
417	80	83							
16	20	e52	e39	e32	e31	e28	1370	209	139
368	79	77							
17	27	e55	e39	e33	e31	e28	1190	203	136
310	80	71							
18	34	e53	e38	e33	e31	e28	1160	196	131
258	78	65							
19	39	e46	e38	e34	e31	e28	1070	190	129
233	76	61							
20	35	e45	e37	e36	e31	e28	979	187	132
215	74	57							
21	36	e44	e37	e37	e30	e28	899	182	126
202	72	55							
22	36	e44	e37	e37	e30	e28	808	188	113
188	68	52							
23	34	e44	e36	e37	e30	e27	723	279	204
174	71	49							
24	32	e43	e36	e36	e30	e24	650	375	213
160	70	47							
25	32	e43	e35	e36	e30	e22	580	435	416
149	64	49							
26	35	e43	e35	e36	e30	e18	525	433	353
139	63	46							
27	38	e43	e34	e36	e30	e15	483	400	261
131	61	43							
28	40	e43	e34	e35	e30	e14	452	348	180
125	60	45							
29	59	e43	e34	e35	---	e16	417	306	193
116	58	45							
30	100	e43	e33	e35	---	e20	385	278	208
107	57	44							
31	e105	---	e33	e35	---	e29	---	256	---
98	57	---							
TOTAL	1064	1825	1204	1048	891	815	31081	8434	5468
7333	2505	2184							
MEAN	34.3	60.8	38.8	33.8	31.8	26.3	1036	272	182
237	80.8	72.8							
MAX	105	96	43	37	35	30	2360	435	416
434	112	138							

MIN	20	43	33	31	30	14	100	182	113
98	57	43							
AC-FT	2110	3620	2390	2080	1770	1620	61650	16730	10850
14550	4970	4330							
CFSM	.11	.19	.12	.10	.10	.08	3.22	.84	.57
.73	.25	.23							
IN.	.12	.21	.14	.12	.10	.09	3.59	.97	.63
.85	.29	.25							

- e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1997, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
JUL	AUG	SEP							
MEAN	39.1	36.9	25.2	21.1	21.9	85.9	268	130	99.3
101	52.1	38.3							
MAX	151	176	63.8	54.7	99.6	434	1036	372	530
784	472	182							
(WY)	1974	1972	1972	1981	1981	1966	1997	1985	1962
1993	1955	1957							
MIN	11.6	12.2	10.6	9.94	9.88	15.0	33.3	21.5	12.7
10.1	5.87	8.52							
(WY)	1979	1977	1977	1962	1949	1969	1981	1977	1977
1976	1976	1976							

<i>SUMMARY STATISTICS</i>	<i>FOR 1996 CALENDAR YEAR</i>	<i>FOR 1997 WATER YEAR</i>	<i>WATER YEARS 1945 - 1997</i>
ANNUAL TOTAL	38405	63852	
ANNUAL MEAN	105	175	76.7
HIGHEST ANNUAL MEAN			
175	1997		
LOWEST ANNUAL MEAN			
16.7	1977		
HIGHEST DAILY MEAN	1190	Apr 13	2360a
Apr 6 1997			Apr 6
LOWEST DAILY MEAN	18	Sep 19	14
Aug 25 1976			Mar 28
ANNUAL SEVEN-DAY MINIMUM	19	Sep 16	18
Aug 22 1976			Mar 24
INSTANTANEOUS PEAK FLOW			2360b
Apr 6 1997			Apr 6
INSTANTANEOUS PEAK STAGE			10.77c
Apr 6 1997			Apr 6
INSTANTANEOUS LOW FLOW			
Aug 26 1977			2.8
ANNUAL RUNOFF (AC-FT)	76180	126700	55580
ANNUAL RUNOFF (INCHES)	4.44	7.38	3.24
10 PERCENT EXCEEDS	254	371	181
50 PERCENT EXCEEDS	38	60	32
90 PERCENT EXCEEDS	25	29	14

- a Estimated, backwater from ice.
- b Daily discharge, estimated, backwater from ice.
- c Backwater from ice.