

RED RIVER OF THE NORTH BASIN

05087500 MIDDLE RIVER AT ARGYLE, MN

LOCATION.--Lat 48° 20'25", long 96° 48'58", in NE1/4NW1/4 sec. 15, T.156 N., R.48 W., Marshall County, Hydrologic Unit 09020309, on left bank 30 ft upstream of bridge on County Highway 4 in Argyle and 14 mi upstream from mouth.

DRAINAGE AREA.--265 mi²

PERIOD OF RECORD.--March to September 1945, October 1950 to September 1981, February 1982 to current year. Monthly discharge only for some periods, published in WSP 1728. October 1981 to January 1982, operated as a high-flow partial-record station.

GAGE.--Water-stage recorder. Datum of gage is 828.53 ft above mean sea level. Prior to Nov. 8, 1951, nonrecording gage and Nov. 8, 1951 to Sept. 18, 1952, water-stage recorder at site 800 ft downstream at datum 1.0 ft higher. Sept. 19, 1952 to June 28, 1982, recording gage at site 800 feet downstream at present datum. June 29, 1982 to Sept. 20, 1983, nonrecording gage at present site and datum.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of April 1950 reached a stage of 15.25 ft present datum, site then in use, from floodmarks, discharge, 2,790 ft³/s.

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	.85	15	e5.6	e3.2	e2.7	e2.0	e60	387	e40
15	12	1.5							
2	.82	15	e5.7	e3.1	e2.6	e2.0	e150	348	e37
63	9.8	1.8							
3	.72	15	e5.4	e3.0	e2.6	e2.0	e280	330	e34
47	8.2	1.6							
4	.60	16	e5.5	e3.0	e2.6	e2.0	e270	203	31
211	7.0	1.7							
5	.55	e16	e5.4	e3.0	e2.5	e2.1	e260	170	27
552	6.9	2.5							
6	.55	e15	e5.4	e2.9	e2.5	e2.1	e260	144	26
882	6.2	2.0							
7	.58	e15	e5.2	e2.9	e2.4	e2.1	e255	129	30
896	5.6	1.8							
8	.64	e14	e5.2	e2.8	e2.4	e2.1	e250	128	34
741	5.1	2.4							

9	.69	e15	e5.2	e2.8	e2.4	e2.1	e250	157	34
583	4.6	2.0							
10	.77	e15	e5.0	e2.7	e2.3	e2.2	e260	224	33
452	3.9	1.6							
11	.77	e14	e5.0	e2.7	e2.3	e2.3	e260	266	27
339	3.3	1.2							
12	.80	e13	e5.0	e2.6	e2.3	e2.3	e270	251	22
255	2.8	1.2							
13	.84	e11	e5.0	e2.6	e2.2	e2.3	e280	223	15
224	2.3	1.6							
14	.89	e10	e4.9	e2.7	e2.2	e2.3	e300	191	11
190	2.1	2.3							
15	.88	e9.0	e4.8	e2.7	e2.3	e2.4	e350	161	9.7
204	3.1	1.9							
16	.80	e8.0	e4.7	e2.8	e2.2	e2.4	e400	145	7.6
292	4.3	4.6							
17	.72	e7.6	e4.6	e2.8	e2.2	e2.5	e560	139	8.2
300	3.2	6.0							
18	.81	e7.0	e4.5	e2.9	e2.2	e2.5	e3000	133	9.4
238	2.6	9.8							
19	.83	e6.4	e4.4	e2.8	e2.3	e2.6	3800	115	7.7
186	3.7	4.4							
20	.89	e6.0	e4.3	e2.8	e2.3	e2.6	3380	103	6.3
141	4.1	3.2							
21	1.2	e5.6	e4.3	e2.7	e2.3	e2.6	2740	97	4.5
110	3.6	3.4							
22	2.0	e5.4	e4.2	e2.7	e2.3	e2.6	2360	88	3.9
89	3.5	3.1							
23	3.2	e5.2	e4.1	e2.8	e2.3	e2.6	2030	82	4.5
75	3.0	3.4							
24	6.5	e5.0	e4.0	e2.7	e2.3	e2.7	1650	78	6.4
65	2.7	2.4							
25	6.9	e4.8	e3.9	e2.6	e2.2	e2.8	1310	75	4.2
52	2.7	2.5							
26	9.8	e4.5	e3.9	e2.5	e2.2	e2.9	1090	e68	3.3
42	2.9	2.8							
27	11	e4.3	e3.8	e2.4	e2.2	e3.0	948	e62	4.6
33	2.0	3.1							
28	9.3	e4.5	e3.7	e2.4	e2.1	e3.0	847	e58	17
25	1.8	5.4							
29	10	e5.0	e3.6	e2.4	---	e3.1	603	e50	13
21	2.2	5.2							
30	14	e5.4	e3.5	e2.5	---	e3.3	496	e47	12
18	1.8	4.5							
31	15	---	e3.3	e2.7	---	e3.5	---	e44	---
15	1.5	---							
TOTAL	103.90	292.7	143.1	85.2	65.4	77.0	28969	4696	523.3
7356	128.5	90.9							
MEAN	3.35	9.76	4.62	2.75	2.34	2.48	966	151	17.4
237	4.15	3.03							

MAX	15	16	5.7	3.2	2.7	3.5	3800	387	40
896	12	9.8							
MIN	.55	4.3	3.3	2.4	2.1	2.0	60	44	3.3
15	1.5	1.2							
AC-FT	206	581	284	169	130	153	57460	9310	1040
14590	255	180							
CFSM	.01	.04	.02	.01	.01	.01	3.64	.57	.07
.90	.02	.01							
IN.	.01	.04	.02	.01	.01	.01	4.07	.66	.07
1.03	.02	.01							

- 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	9.84	7.51	2.85	1.25	.86	30.8	222	89.7	66.5
57.8	10.7	15.6							
MAX	94.1	108	22.2	8.77	3.72	335	963	896	660
688	265	272							
(WY)	1983	1995	1995	1995	1995	1995	1997	1996	1970
1975	1993	1993							
MIN	.000	.000	.000	.000	.000	.000	.20	2.12	.37
.000	.000	.000							
(WY)	1954	1954	1954	1953	1953	1954	1991	1981	1973
1961	1961	1952							
<i>SUMMARY STATISTICS FOR 1996 CALENDAR YEAR</i>			<i>FOR 1997 WATER YEAR</i>			<i>WATER YEARS 1945 - 1997</i>			
ANNUAL TOTAL			46619.29			42531.00			
ANNUAL MEAN			127			117			43.0a
HIGHEST ANNUAL MEAN									
127		1996							
LOWEST ANNUAL MEAN									
1.60		1977							
HIGHEST DAILY MEAN			4800	May 19		3800	Apr 19		4800
May 19	1996								
LOWEST DAILY MEAN			.55	Oct 5, 6		.55	Oct 5, 6		.00b
Aug 18	1952								
ANNUAL SEVEN-DAY MIN			.62	Oct 3		.62	Oct 3		.00
Aug 18	1952								
INSTANTANEOUS PEAK FLOW						4330	Apr 19		5020
May 19	1996								
INSTANTANEOUS PEAK STAGE						17.96	Apr 19		18.27c
May 19	1996								
ANNUAL RUNOFF (AC-FT)			92470			84360			31130
ANNUAL RUNOFF (CFSM)			.48			.44			.16
ANNUAL RUNOFF (INCHES)			6.54			5.97			2.20
10 PERCENT EXCEEDS			173			260			87
50 PERCENT EXCEEDS			4.1			4.6			2.3
90 PERCENT EXCEEDS			.92			2.0			.00

a Median of annual mean discharges is 38 ft³/s.

b Many days, several years.

c From floodmark.