

RED RIVER OF THE NORTH BASIN

05087500 MIDDLE RIVER AT ARGYLE, MN

LOCATION.--Lat 4820'25", long 9648'58", in NE 1 / 4 NW 1 / 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.--255 mi² (*revised*).

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 1997 TO SEPTEMBER 1998

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	41	17	e6.8	e2.9	e800	219	33	55	627	20	.68
2	6.0	41	17	e6.4	e2.8	e1000	186	34	52	506	18	2.7
3	8.8	43	17	e6.2	e2.7	e820	147	29	49	396	14	4.5
4	8.0	42	17	e6.0	e2.7	e700	123	27	44	333	12	4.0
5	10	41	18	e6.0	e2.6	e600	112	24	44	321	8.8	e3.7
6	15	36	18	e5.6	e2.6	e500	105	20	44	295	6.9	e3.4
7	12	37	17	e5.2	e2.6	e430	113	18	38	298	5.6	e3.0
8	13	41	16	e5.2	e2.6	e360	124	17	31	302	4.7	e2.6
9	25	46	15	e5.2	e2.6	e300	147	17	24	327	5.3	e2.4

10	51	e44	15	e5.0	e2.7	e240	150	16	20	311	4.3	e2.2
11	76	e41	14	e5.2	e2.7	e200	146	18	17	262	4.0	e2.2
12	84	e39	15	e5.2	e2.7	e160	134	19	16	218	3.7	e2.0
13	86	e37	14	e5.2	e2.7	e130	130	28	15	189	3.2	e1.9
14	159	e36	14	e5.0	e2.7	e100	193	43	15	169	2.3	e1.8
15	209	e34	13	e5.0	e2.8	e90	269	55	19	148	2.0	e1.8
16	223	e33	13	e4.8	e2.8	e76	280	69	14	133	1.9	e1.8
17	221	e31	12	e4.5	e2.9	e66	253	124	11	130	1.6	4.2
18	200	e30	12	e4.3	e3.0	e62	210	337	9.9	104	1.4	2.5
19	159	e28	11	e4.2	e3.3	e60	169	452	17	82	6.0	2.2
20	121	e26	11	e4.1	e3.8	57	130	464	20	74	2.8	4.1
21	94	e25	10	e4.1	e4.5	55	108	375	91	90	2.4	4.0
22	76	e22	9.9	e4.0	e5.4	53	91	278	169	116	2.2	e4.0
23	65	e21	9.5	e4.0	e6.6	50	78	203	191	147	2.4	e4.0
24	54	e20	9.0	e3.9	e9.0	52	70	147	191	151	1.8	e4.5
25	47	e19	8.6	e3.9	e12	54	64	104	226	128	1.1	e4.6
26	41	e18	8.1	e3.7	e45	62	57	78	420	93	.93	e5.2
27	38	e18	8.5	e3.7	e200	74	50	64	777	71	.84	e4.8
28	34	18	8.0	e3.5	e500	129	46	53	1190	52	.92	e4.7
29	33	18	7.8	e3.4	---	182	43	54	1040	41	.73	e4.8
30	32	18	e7.4	e3.2	---	221	37	66	796	33	.64	e5.0
31	38	---	e7.0	e3.1	---	234	---	61	---	26	.76	---
TOTAL	2244.4	944	389.8	145.6	838.7	7917	3984	3327	5645.9	6173	143.22	99.28
MEAN	72.4	31.5	12.6	4.70	30.0	255	133	107	188	199	4.62	3.31
MAX	223	46	18	6.8	500	1000	280	464	1190	627	20	5.2
MIN	5.6	18	7.0	3.1	2.6	50	37	16	9.9	26	.64	.68
AC-FT	4450	1870	773	289	1660	15700	7900	6600	11200	12240	284	197
CFSM	.28	.12	.05	.02	.12	1.00	.52	.42	.74	.78	.02	.01
IN.	.33	.14	.06	.02	.12	1.15	.58	.49	.82	.90	.02	.01

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	11.2	8.02	3.05	1.33	1.48	35.4	220	90.0	69.0	60.7	10.6	15.3
MAX	94.1	108	22.2	8.77	30.0	335	966	896	660	688	265	272
(WY)	1983	1995	1995	1995	1998	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

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1945 - 1998		
ANNUAL TOTAL	45569.5		31851.90				
ANNUAL MEAN	125		87.3		43.9a		
HIGHEST ANNUAL MEAN					127		1996
LOWEST ANNUAL MEAN					1.60		1977
HIGHEST DAILY MEAN	3800	Apr 19	1190	Jun 28	4800	May 19	1996
LOWEST DAILY MEAN	1.2	Sep 11	.64	Aug 30	.00b	Aug 18	1952
ANNUAL SEVEN-DAY MINIMUM	1.7	Sep 9	.79	Aug 26	.00	Aug 18	1952
INSTANTANEOUS PEAK FLOW			1300c	Jun 28	5020	May 19	1996
INSTANTANEOUS PEAK STAGE			14.93d	Mar 1	18.27e	May 19	1996
ANNUAL RUNOFF (AC-FT)	90390		63180		31810		
ANNUAL RUNOFF (CFSM)	.49		.34		.17		
ANNUAL RUNOFF (INCHES)	6.65		4.65		2.34		
10 PERCENT	260		229		90		

EXCEEDS							
50 PERCENT EXCEEDS	12		22		2.5		
90 PERCENT EXCEEDS	2.2		2.7		.00		

a Median of annual mean discharges is 40 ft³/s.

b Many days, several years.

c Gage-height, 14.26 ft.

d Backwater from ice.

e From floodmark.

