

RED RIVER OF THE NORTH BASIN--Continued

05104500 ROSEAU RIVER BELOW SOUTH FORK NEAR MALUNG, MN

LOCATION.--Lat 48°47'30", long 95°44'40", in NW¹/₄SW¹/₄ sec. 6, T.161 N., R.39 W., Roseau County, Hydrologic Unit 09020314, on left bank 0.3 mi downstream from South Fork and 1.5 mi northwest of Malung.

DRAINAGE AREA.--430 mi².

PERIOD OF RECORD.--October 1946 to current year.

REVISED RECORDS.--WSP 2113: 1948, 1950, 1951, 1956(M), 1957(M), 1962(M). WRIR 97-4249: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,029.67 ft, adjustment of 1912.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some flow bypasses the gaging station through a natural overflow channel 0.8 mi. upstream and returns to river 0.5 mi downstream. Overflow begins at stage of about 13.0 ft, discharge, 1,800 ft³/s. These records include any flow in the overflow channel.

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	11	117	82	e13	e8.6	e8.2	e1400	265	826	229	32	16
2	12	114	88	e12	e8.6	e8.2	e1250	236	967	200	25	18
3	14	107	97	e11	e8.6	e8.2	e1000	211	936	192	23	23
4	15	99	101	e10	e8.4	e8.2	e850	192	913	180	21	43
5	18	92	101	e10	e8.3	e8.2	e800	183	962	750	20	169
6	26	84	91	e9.8	e8.2	e8.2	e900	182	944	684	16	329
7	30	78	83	e9.0	e8.3	e8.1	2440	197	889	415	19	408
8	37	73	88	e8.3	e8.6	e8.0	3190	340	816	246	18	444
9	36	69	77	e8.0	e8.6	e8.4	2800	486	1040	198	17	408
10	30	68	67	e8.0	e8.6	e8.8	2540	544	1400	167	e18	391
11	34	64	59	e8.0	e8.6	e9.2	2570	756	1490	134	e20	387
12	39	51	55	e8.0	e8.6	e9.3	2570	1020	1480	110	e20	364
13	40	66	49	e8.0	e8.4	e9.4	2330	1410	1220	275	e21	372
14	44	66	45	e8.0	e8.2	e9.4	2050	1810	865	551	e22	470
15	42	62	45	e8.2	e8.0	e9.8	1840	2030	640	442	e20	500
16	43	61	41	e8.3	e8.0	e9.8	1650	1890	494	264	e22	483
17	87	59	38	e8.4	e8.0	e10	1440	1610	356	182	e27	437
18	206	56	35	e8.5	e7.7	e10	1270	1320	262	132	e31	373
19	215	46	35	e8.5	e8.0	e11	1110	1050	209	101	e28	316
20	223	44	e34	e8.6	e8.0	e11	985	832	174	82	e27	260
21	220	61	e32	e8.6	e8.2	e12	869	672	152	71	e25	224
22	214	59	e29	e8.6	e8.2	e13	768	579	134	63	e22	192
23	195	61	e27	e8.6	e8.2	e16	685	542	152	61	e23	165
24	176	63	e24	e8.6	e8.2	e30	616	523	164	54	e24	144
25	159	66	e22	e8.6	e8.2	e100	554	489	271	46	e21	125
26	146	69	e20	e8.6	e8.2	e200	506	439	1400	43	21	120
27	140	72	e18	e8.6	e8.2	e450	460	362	1030	42	21	118
28	133	73	e16	e8.6	e8.2	e900	395	293	606	40	20	121
29	128	73	e14	e8.6	---	e1300	338	244	421	40	18	125
30	124	76	e13	e8.6	---	e1700	291	213	290	39	16	126
31	119	---	e13	e8.6	---	e1600	---	428	---	36	14	---
TOTAL	2956	2149	1539	276.2	231.9	6502.4	40467	21348	21503	6069	672	7671
MEAN	95.4	71.6	49.6	8.91	8.28	210	1349	689	717	196	21.7	256
MAX	223	117	101	13	8.6	1700	3190	2030	1490	750	32	500
MIN	11	44	13	8.0	7.7	8.0	291	182	134	36	14	16
AC-FT	5860	4260	3050	548	460	12900	80270	42340	42650	12040	1330	15220
CFSM	.22	.17	.12	.02	.02	.49	3.14	1.60	1.67	.46	.05	.59
IN.	.26	.19	.13	.02	.02	.56	3.50	1.85	1.86	.53	.06	.66

e Estimated

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	66.9	50.4	16.7	7.69	7.57	68.3	616	330	225	161	60.8	82.9
MAX	351	362	65.6	22.2	102	524	2035	1589	1140	1152	585	710
(WY)	1983	1995	1995	1997	1998	1995	1966	1950	1968	1968	1968	1957
MIN	.029	.16	.013	.000	.000	.83	5.60	8.77	4.16	.092	.000	.025
(WY)	1991	1991	1977	1977	1977	1977	1991	1990	1980	1980	1961	1988

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1947 - 1999
ANNUAL TOTAL	48575.6	111384.5	
ANNUAL MEAN	133	305	141 ^a
HIGHEST ANNUAL MEAN			305 1999
LOWEST ANNUAL MEAN			7.28 1990
HIGHEST DAILY MEAN	1380	May 17	3190 Apr 8 6970 May 19 1996
LOWEST DAILY MEAN	2.4	Sep 18	7.7 Feb 18 .00 ^b Jul 23 1961
ANNUAL SEVEN-DAY MINIMUM	3.2	Sep 15	8.0 Feb 14 .00 Jul 23 1961
INSTANTANEOUS PEAK FLOW			3300 Apr 8 7310 May 19 1996
INSTANTANEOUS PEAK STAGE			18.22 Apr 8 23.45 ^c Apr 20 1996
ANNUAL RUNOFF (AC-FT)	96350	220900	102100
ANNUAL RUNOFF (CFSM)	.31	.71	.33
ANNUAL RUNOFF (INCHES)	4.20	9.64	4.46
10 PERCENT EXCEEDS	316	964	327
50 PERCENT EXCEEDS	61	69	19
90 PERCENT EXCEEDS	8.7	8.4	1.8

a Median of annual mean discharges is 124 ft³/s.
 b Many days, several years.
 c From highwater mark, backwater from ice.

