

RAINY RIVER BASIN--Continued

05133500 RAINY RIVER AT MANITOU RAPIDS, MN
(International Gaging Station)

LOCATION.--Lat 48°38'04", long 93°54'47", in NW¹/₄SE¹/₄ sec. 36, T.160 N., R.26 W., Koochiching County, Hydrologic Unit 09030004, on left bank at Manitou Rapids, 4 mi west of Indus.

DRAINAGE AREA.--19,400 mi² (approximately).

PERIOD OF RECORD.--July 1928 to current year. Monthly discharge only for some periods, published in WSP 1308. October 1911 to October 1924 (gage heights only) at site near Birchdale in files of U.S. Army Corps of Engineers. Published as "near Birchdale" 1932-34.

GAGE.--Water-stage recorder. Datum of gage is 1,062.48 ft above sea level (NGVD of 1929). Prior to Nov. 10, 1934, nonrecording gage at site near Birchdale, 7 mi. downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Diurnal fluctuation caused by power plants at International Falls. Some regulation at Rainy and Namakan Lakes affects low and medium flows.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16200	16400	12800	e7300	e7700	e8100	10300	7080	11700	23400	12200	13400
2	15500	16700	12600	e7200	e7900	e8000	7430	7090	12300	23100	12500	14000
3	15000	17600	12600	e6800	e8000	e7700	6560	7010	13500	22600	12000	14600
4	14600	17900	12300	e7400	e8000	e7400	6550	7060	13900	24000	11700	14600
5	14300	18000	e9740	e8300	e7700	6930	6620	7260	13900	24700	11200	12700
6	14100	18000	e10300	e8300	e5000	6810	7030	7360	13400	26300	9560	13200
7	13900	17900	12100	e8300	e4800	7890	7650	7510	12400	26700	11100	13200
8	14400	17700	12100	e8200	e9000	8280	8710	7790	11800	25700	13600	13500
9	15200	17500	12200	e5600	e9300	8380	9210	10700	12000	25100	14200	13100
10	16100	17500	12300	e5500	e9400	9170	9240	13000	11700	24900	14500	11600
11	16700	17300	12100	e8200	e9400	9430	10200	14200	10400	24900	15600	11600
12	16800	16300	e9820	e9700	e9500	8260	10200	16800	9990	25200	16300	12900
13	17800	14800	e9560	e9900	e7200	8150	9990	18600	11700	25300	16400	12800
14	17900	14300	12100	e9800	e6900	9010	10400	19200	12600	25100	16500	12600
15	16500	14100	12300	e9600	e8200	8930	9970	19100	13900	24100	16500	12400
16	15800	13900	11700	e8000	e8000	8450	7710	18600	14400	23400	16400	11700
17	15600	13900	e12000	e8000	e7600	7720	7170	17800	14600	22700	15400	10200
18	15400	13800	e10200	e8700	e7700	7180	7620	16400	14600	19300	15100	10000
19	15500	13800	e8620	e8700	e7700	5970	7710	15800	14500	16500	14900	10700
20	16700	13900	e8570	e8600	e4700	5670	7690	15900	14700	15400	14800	10500
21	17100	13800	e8140	e8400	e4500	6680	7690	15000	15400	14900	14700	11200
22	17400	13700	e7680	e8000	e7300	6600	7370	14800	18100	12700	14700	10700
23	18500	13600	e7580	e5300	e8400	6430	7070	15900	21000	10500	14500	9940
24	18900	13700	e7320	e5200	e8300	6520	7010	16500	24000	10200	14500	7860
25	18800	13600	e7710	e7500	e8200	6670	7560	16500	24800	11400	14400	7700
26	18900	13600	e6830	e7900	e8100	6640	7670	15800	24600	12300	13600	9770
27	17500	13700	e7150	e6000	e7600	6750	7200	14600	23800	12900	12400	10200
28	16800	13700	e6780	e8300	e6800	9200	7070	12700	22900	13100	11800	9940
29	16600	13600	e6870	e8200	e7500	11500	7040	11900	23100	12700	13100	10100
30	16500	13400	e6890	e5100	---	11800	7030	11100	22900	11600	12700	9720
31	16500	---	e7350	e5000	---	11900	---	11400	---	11500	12400	---
TOTAL	507500	457700	306310	237000	220400	248120	240670	410460	478590	602200	429260	346430
MEAN	16370	15260	9881	7645	7600	8004	8022	13240	15950	19430	13850	11550
MAX	18900	18000	12800	9900	9500	11900	10400	19200	24800	26700	16500	14600
MIN	13900	13400	6780	5000	4500	5670	6550	7010	9990	10200	9560	7700
AC--FT	1007000	907800	607600	470100	437200	492100	477400	814100	949300	1194000	851400	687100
CFSM	.84	.79	.51	.39	.39	.41	.41	.68	.82	1.00	.71	.60
IN.	.97	.88	.59	.45	.42	.48	.46	.79	.92	1.15	.82	.66

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2000, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	11920	11360	10190	9130	8720	8961	15490	19560	19800	16620	11440	11130
MAX	42410	37280	27790	18430	17240	16640	38100	52880	49480	47970	33700	30620
(WY)	1942	1972	1972	1972	1969	1945	1966	1950	1950	1950	1944	1988
MIN	4728	3796	3190	2900	3129	2926	4378	4106	3676	3483	3422	3746
(WY)	1981	1977	1930	1931	1931	1931	1977	1977	1980	1980	1980	1998

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1929 - 2000
ANNUAL TOTAL	5774750	4484640	
ANNUAL MEAN	15820	12250	12880
HIGHEST ANNUAL MEAN			23260
LOWEST ANNUAL MEAN			4470
HIGHEST DAILY MEAN	40700	May 14	71300
LOWEST DAILY MEAN	3500	Jan 9	928
ANNUAL SEVEN-DAY MINIMUM	3610	Jan 3	1500
INSTANTANEOUS PEAK FLOW			71600
INSTANTANEOUS PEAK STAGE			21.04
ANNUAL RUNOFF (AC-FT)	11450000	8895000	9327000
ANNUAL RUNOFF (CFSM)	.82		.66
ANNUAL RUNOFF (INCHES)	11.07	8.60	9.02
10 PERCENT EXCEEDS	27600	18000	25300
50 PERCENT EXCEEDS	15800	11800	10300
90 PERCENT EXCEEDS	5410	7040	5000

e Estimated.

