

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 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,010	4,760	e8,650	e9,260	e9,680	e5,240	13,700	16,800	36,400	14,600	7,060	6,650
2	3,910	4,750	e8,300	e9,020	e9,670	e5,630	13,400	16,400	38,500	14,000	7,000	6,710
3	3,780	4,780	e8,000	e9,100	e9,790	e6,050	13,200	16,000	38,300	13,700	6,980	7,070
4	3,840	4,720	e8,000	e8,980	e9,200	e5,750	12,600	14,900	37,000	13,600	6,940	7,190
5	3,830	4,630	e8,000	e8,920	e9,080	e5,990	13,100	14,900	35,900	13,600	6,500	7,310
6	3,810	4,690	e7,900	e8,800	e8,570	e6,560	14,200	15,000	34,900	13,600	5,680	8,370
7	3,830	6,230	e7,700	e8,580	e8,880	e8,280	16,300	15,000	34,600	13,800	4,900	9,930
8	3,860	e5,850	e7,800	e8,330	e9,260	e8,290	20,200	13,900	35,300	13,900	4,580	13,800
9	3,860	e4,850	e7,800	e8,170	e9,360	e8,400	24,600	12,900	35,000	13,800	4,540	16,400
10	3,840	e4,800	e7,800	e8,160	e9,280	e8,370	24,700	12,600	34,100	13,900	4,630	15,600
11	3,800	e5,800	e7,800	e8,100	e9,550	e8,600	23,600	13,400	33,100	15,300	4,780	13,900
12	3,870	6,090	e7,700	e8,170	e9,500	e8,500	23,000	16,100	32,100	15,300	4,850	13,200
13	3,850	6,380	e7,400	e8,950	e9,110	e8,720	22,100	20,100	31,200	16,100	4,850	12,300
14	3,830	6,380	e7,600	e9,790	e8,390	e8,380	21,200	24,800	30,600	17,100	4,830	10,800
15	3,820	6,370	e7,700	e10,000	e8,190	e8,350	20,300	26,100	30,200	16,800	4,790	9,030
16	3,890	6,390	e7,700	e10,700	e7,090	e9,230	19,700	25,900	29,700	15,700	4,760	8,960
17	3,970	6,490	e7,700	e10,600	e6,240	10,300	19,400	25,500	29,000	14,900	4,710	11,100
18	3,960	6,570	e7,700	e10,500	e5,360	9,740	19,100	26,900	27,100	14,300	4,700	14,100
19	4,000	7,080	e7,700	e10,300	e5,090	9,570	19,200	27,600	26,300	13,800	e4,650	14,700
20	3,920	7,380	e7,700	e9,590	e5,130	9,370	19,700	27,900	23,300	13,300	e4,650	14,500
21	4,320	7,700	e7,800	e9,850	e5,160	9,470	20,500	29,400	20,300	13,200	e4,600	15,800
22	4,580	7,770	e7,600	e9,880	e5,160	9,340	21,200	29,600	19,200	13,100	e4,650	17,500
23	4,630	7,530	e7,400	e10,300	e5,160	8,690	21,100	28,900	16,800	12,100	4,750	18,300
24	4,640	e7,350	e7,200	e10,200	e5,130	7,770	20,900	28,000	15,700	11,300	4,720	18,900
25	4,600	e6,900	e7,050	e10,200	e5,130	7,480	20,200	27,600	15,400	10,600	4,700	19,600
26	4,620	e7,000	e7,100	e10,100	e5,130	7,520	19,800	27,200	15,200	10,300	4,850	20,100
27	4,620	e7,100	e7,100	e10,200	e5,240	7,480	19,300	26,400	15,100	8,840	4,940	19,800
28	4,590	e7,150	e7,150	e10,400	e5,210	8,050	18,700	26,300	15,000	7,650	4,970	19,400
29	4,630	e8,300	e7,200	e10,000	e5,210	9,090	17,900	25,200	14,900	7,320	4,910	17,900
30	4,660	e8,600	e8,700	e10,200	---	10,200	17,500	25,300	14,800	7,300	4,950	16,800
31	4,690	---	e9,300	e9,880	---	12,400	---	31,100	---	7,210	6,050	---
TOTAL	128,060	190,390	240,250	295,230	212,950	256,810	570,400	687,700	815,000	400,020	160,470	405,720
MEAN	4,131	6,346	7,750	9,524	7,343	8,284	19,010	22,180	27,170	12,900	5,176	13,520
MAX	4,690	8,600	9,300	10,700	9,790	12,400	24,700	31,100	38,500	17,100	7,060	20,100
MIN	3,780	4,630	7,050	8,100	5,090	5,240	12,600	12,600	14,800	7,210	4,540	6,650
AC-FT	254,000	377,600	476,500	585,600	422,400	509,400	1,131,000	1,364,000	1,617,000	793,400	318,300	804,700
CFSM	0.21	0.33	0.40	0.49	0.38	0.43	0.98	1.14	1.40	0.67	0.27	0.70
IN.	0.25	0.37	0.46	0.57	0.41	0.49	1.09	1.32	1.56	0.77	0.31	0.78

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2004, BY WATER YEAR (WY)

MEAN	11,710	11,350	10,170	9,158	8,678	8,903	15,510	19,580	20,240	16,750	11,510	11,060
MAX	42,410	37,280	27,790	18,430	17,240	16,640	38,100	52,880	49,480	47,970	33,700	30,620
(WY)	(1942)	(1972)	(1972)	(1972)	(1969)	(1945)	(1966)	(1950)	(1950)	(1950)	(1944)	(1988)
MIN	4,131	3,796	3,190	2,900	3,129	2,926	4,378	4,106	3,676	3,483	3,422	3,746
(WY)	(2004)	(1977)	(1930)	(1931)	(1931)	(1931)	(1977)	(1977)	(1980)	(1980)	(1980)	(1998)

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SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1929 - 2004	
ANNUAL TOTAL	2,047,370		4,363,000			
ANNUAL MEAN	5,609		11,920		12,900	
HIGHEST ANNUAL MEAN					23,260	1950
LOWEST ANNUAL MEAN					4,470	1931
HIGHEST DAILY MEAN	9,340	Jul 1	38,500	Jun 2	71,300	May 11, 1950
LOWEST DAILY MEAN	3,450	Sep 12	3,780	Oct 3	928	Dec 26, 1929
ANNUAL SEVEN-DAY MINIMUM	3,570	Sep 9	3,830	Oct 3	1,500	Dec 24, 1929
MAXIMUM PEAK FLOW			38,700	Jun 2	71,600	May 12, 1950
MAXIMUM PEAK STAGE			14.09	Jun 2	21.04	May 12, 1950
ANNUAL RUNOFF (AC-FT)	4,061,000		8,654,000		9,344,000	
ANNUAL RUNOFF (CFSM)	0.289		0.614		0.665	
ANNUAL RUNOFF (INCHES)	3.93		8.37		9.03	
10 PERCENT EXCEEDS	7,700		24,900		25,500	
50 PERCENT EXCEEDS	5,530		9,000		10,300	
90 PERCENT EXCEEDS	3,890		4,650		5,000	

e Estimated.

