

05079000 RED LAKE RIVER AT CROOKSTON, MN

LOCATION.--Lat 47°46'32", long 96°36'33", in SW¹/₄SW¹/₄ sec. 30, T.150 N., R.46 W., Polk County, Hydrologic Unit 09020303, on right bank 100 ft upstream from Sargent Street bridge in Crookston, 0.3 mi downstream from Interstate Power Co.'s dam, 0.6 mi downstream from bridge on U.S. Highway 75, and 53 mi upstream from mouth.

DRAINAGE AREA.--5,270 mi².

PERIOD OF RECORD.--May 1901 to current year. Monthly discharge only for some periods, published in WSP 1308. Figures of daily discharge for Apr. 3-30, 1904, published in WSP 130, have been found unreliable and should not be used.

REVISED RECORDS.--WSP 1115: 1906, 1915-16, 1919-20, 1922, 1925, 1927, 1929. WSP 1308: 1916(M), 1919(M), 1928(M), 1930(M). (See also PERIOD OF RECORD).

GAGE.--Water-stage recorder. Datum of gage is 832.72 ft above sea level (NGVD of 1929). May 18, 1901 to June 30, 1909, nonrecording gage at bridge 300 ft upstream at same datum. July 1, 1909 to Sept. 25, 1911, nonrecording gage, Sept. 26, 1911 to Sept. 30, 1919, water-stage recorder, Oct. 1, 1919 to Sept. 30, 1930, nonrecording gage, at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diurnal fluctuation prior to 1975 caused by power plant 1,000 ft upstream. Runoff from 1,950 mi² in the headwaters of Red Lake River is completely controlled by dam at outlet of Lower Red Lake. Flow partially affected by occasional regulation at Thief and Mud Lakes in Thief River basin (see station 05076000).

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,460	9,580	1,310	e880	e1,080	e1,030	e9,850	2,260	3,360	3,890	1,160	1,130
2	1,380	8,550	1,410	e830	e1,170	e1,050	e10,100	2,240	3,180	5,050	1,110	1,100
3	1,520	7,380	1,460	e780	e1,210	e1,070	e9,940	2,220	3,020	4,960	1,060	1,110
4	1,550	6,320	1,310	e750	e1,220	e1,090	8,910	2,110	2,930	5,340	1,040	1,130
5	1,540	5,580	e1,280	e725	e1,210	e1,110	7,270	1,990	2,890	5,370	1,040	1,110
6	1,500	5,080	e1,280	e720	e1,180	e1,130	6,210	1,900	3,260	4,830	1,000	1,210
7	1,340	4,630	e1,270	e720	e1,140	e1,130	5,870	1,840	6,070	4,420	957	1,320
8	1,180	4,180	e1,330	e720	e1,100	e1,130	5,460	1,870	7,160	3,940	868	1,410
9	1,140	3,840	1,340	e690	e1,100	e1,150	5,020	1,960	7,800	3,580	883	1,480
10	1,270	3,580	e1,370	e665	e1,100	e1,170	4,650	2,930	7,490	3,400	875	1,440
11	1,310	3,310	e1,370	e670	e1,110	e1,170	4,340	3,290	6,810	3,120	830	1,280
12	1,270	3,150	e1,370	e675	e1,110	e1,170	4,390	3,060	8,280	2,870	826	1,300
13	1,300	3,030	e1,370	e635	e1,110	e1,140	5,310	2,890	9,980	2,720	833	1,290
14	e1,100	2,880	e1,360	e585	e1,100	e1,100	5,720	2,810	9,490	2,630	871	1,250
15	903	2,810	e1,360	e570	e1,060	e1,100	5,110	2,760	10,200	2,570	874	1,220
16	1,080	2,730	e1,300	e580	e1,020	e1,110	4,540	2,760	9,130	2,470	856	1,170
17	890	2,460	e1,300	e580	e975	e1,120	4,240	2,730	7,630	2,390	879	1,180
18	858	2,360	e1,270	e580	e970	e1,140	3,940	2,710	6,370	2,320	1,010	1,140
19	894	2,330	e1,240	e580	e970	e1,170	3,670	2,670	5,380	2,280	1,300	1,110
20	931	2,330	e1,210	e585	e975	e1,200	3,390	2,520	4,620	2,160	1,500	1,010
21	933	2,250	e1,020	e580	e980	e1,250	3,070	2,410	4,080	2,060	1,630	995
22	954	2,150	e960	e570	e990	e1,300	2,870	2,370	3,630	2,380	1,630	994
23	903	2,150	e950	e605	e1,000	e1,330	2,660	2,340	3,370	2,520	1,300	944
24	932	e1,970	e950	e660	e1,020	e1,360	2,520	2,350	3,220	2,530	1,120	929
25	1,240	e1,670	e955	e670	e1,030	e1,360	2,480	2,390	3,090	2,470	1,070	940
26	1,850	e1,230	e960	e670	e1,020	e1,490	2,420	2,420	3,050	2,370	1,130	974
27	2,150	e1,510	e970	e705	e1,020	e1,750	2,380	2,470	2,950	2,260	1,140	950
28	2,420	e1,470	e980	e760	e1,020	e2,700	2,360	2,820	2,850	1,880	1,140	940
29	2,350	e1,450	e985	e825	---	e4,200	2,340	3,290	2,850	1,410	1,240	934
30	4,240	1,260	e955	e915	---	e5,900	2,300	3,600	2,970	1,270	1,260	932
31	9,210	---	e920	e1,010	---	e8,280	---	3,530	---	1,240	1,220	---
TOTAL	51,598	103,220	37,115	21,490	29,990	53,400	143,330	79,510	157,110	92,700	33,652	33,922
MEAN	1,664	3,441	1,197	693	1,071	1,723	4,778	2,565	5,237	2,990	1,086	1,131
MAX	9,210	9,580	1,460	1,010	1,220	8,280	10,100	3,600	10,200	5,370	1,630	1,480
MIN	858	1,230	920	570	970	1,030	2,300	1,840	2,850	1,240	826	929
AC-FT	102,300	204,700	73,620	42,630	59,490	105,900	284,300	157,700	311,600	183,900	66,750	67,280
CFSM	0.32	0.65	0.23	0.13	0.20	0.33	0.91	0.49	0.99	0.57	0.21	0.21
IN.	0.36	0.73	0.26	0.15	0.21	0.38	1.01	0.56	1.11	0.65	0.24	0.24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 2005, BY WATER YEAR (WY)

MEAN	866	775	606	528	514	1,029	3,107	2,158	1,796	1,409	884	884
MAX	2,836	3,620	1,900	1,663	1,778	4,257	11,870	15,290	7,205	6,851	3,868	5,408
(WY)	(1972)	(2001)	(1904)	(1951)	(1998)	(1995)	(1997)	(1950)	(1962)	(1975)	(1985)	(1999)
MIN	8.02	10.1	5.34	15.6	17.8	24.9	232	154	80.4	26.2	12.3	8.87
(WY)	(1937)	(1937)	(1937)	(1934)	(1937)	(1936)	(1981)	(1934)	(1934)	(1936)	(1934)	(1934)

05079000 RED LAKE RIVER AT CROOKSTON, MN—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1901 - 2005	
ANNUAL TOTAL	545,642		837,037			
ANNUAL MEAN	1,491		2,293		1,210	
HIGHEST ANNUAL MEAN					3,129	1950
LOWEST ANNUAL MEAN					83.6	1934
HIGHEST DAILY MEAN	10,900	May 31	10,200	Jun 15	27,500	Apr 18, 1997
LOWEST DAILY MEAN	105	Jan 31	570	Jan 15,22	2.5	Sep 29, 1936
ANNUAL SEVEN-DAY MINIMUM	109	Jan 30	579	Jan 15	3.9	Sep 28, 1936
MAXIMUM PEAK FLOW			a10,300	Jun 15	b28,400	Apr 12, 1969
MAXIMUM PEAK STAGE			c21.23	Apr 2	d28.40	Apr 17, 1997
INSTANTANEOUS LOW FLOW					f0.00	Jul 13, 1960
ANNUAL RUNOFF (AC-FT)	1,082,000		1,660,000		876,300	
ANNUAL RUNOFF (CFSM)	0.283		0.435		0.230	
ANNUAL RUNOFF (INCHES)	3.85		5.91		3.12	
10 PERCENT EXCEEDS	3,570		5,030		2,670	
50 PERCENT EXCEEDS	978		1,340		750	
90 PERCENT EXCEEDS	125		875		120	

- a Gage height, 16.97 ft.
- b Gage height, 27.33 ft.
- c Backwater from ice.
- d From highwater mark, backwater from ice.
- e Estimated.
- f From regulation by power plant upstream.

