

RED RIVER OF THE NORTH BASIN--Continued

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. 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 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	904	1600	1350	e740	e700	e640	14600	3460	4390	2310	e1800	1770
2	858	1580	1460	e740	e700	e640	13800	3350	4280	2310	e1750	2510
3	876	1550	1600	e740	e700	e640	12800	3240	3900	2240	1690	4480
4	849	1540	1630	e740	e680	e640	10700	3210	3720	2120	1610	8590
5	898	1530	1580	e740	e680	e640	11700	3140	4000	2090	1570	11200
6	909	1490	1650	e740	e680	e640	12800	3270	4090	2150	1520	12600
7	916	1410	e1500	e740	e680	e640	13400	3380	3830	2280	1480	11400
8	843	1160	e1400	e740	e680	e640	12600	3570	3590	2370	1440	9410
9	820	1030	e1300	e740	e680	e640	11200	4190	3540	2500	1480	7780
10	827	1160	e1150	e740	e680	e640	10100	4810	3710	2570	1460	6720
11	817	1180	e1100	e720	e680	e660	9190	8560	4360	2780	1720	5910
12	844	854	e1100	e720	e680	e660	8470	10600	4480	2910	2050	5420
13	814	727	e1050	e720	e680	e660	7840	11200	4170	2940	2840	5280
14	796	1000	e1050	e720	e680	e660	7510	11900	3950	2810	3220	5520
15	798	1100	e1000	e740	e680	e660	7370	10500	3820	2470	3110	5940
16	820	e1000	e1000	e720	e680	e700	7010	8820	3650	2470	2880	5950
17	1040	e800	e980	e720	e680	e750	6470	7620	3440	2350	3150	5560
18	2280	e640	e950	e720	e680	e800	6100	6700	3300	2540	2910	5000
19	3370	e600	e940	e720	e660	e860	5910	5930	3110	2510	2550	4490
20	2760	e600	e850	e700	e660	e920	5650	5670	2790	2320	2270	3960
21	2750	e640	e800	e700	e660	e1000	5460	5390	2670	2160	2120	3560
22	2470	e800	e760	e700	e660	e1200	5250	5020	2660	2170	2040	3310
23	2260	e1200	e760	e700	e660	e1300	5010	4740	2640	2250	2840	3230
24	2110	e1400	e760	e700	e660	e1500	4790	4440	2560	2180	5010	3220
25	1680	1500	e760	e700	e660	e1800	4540	4210	2560	2110	4540	2960
26	1600	1540	e760	e700	e660	e2500	4360	4010	2640	e2050	3460	3190
27	1590	1470	e760	e700	e660	e3000	4160	3890	2630	e2000	2800	3260
28	1660	1350	e760	e700	e660	e5000	3950	3810	2540	e1980	2260	3400
29	1640	1310	e760	e700	---	e8500	3750	3690	2480	e1950	2010	3370
30	1610	1360	e760	e700	---	e14000	3550	3630	2330	e1900	1860	3260
31	1600	---	e760	e700	---	15200	---	3710	---	e1850	1810	---
TOTAL	44009	35121	33040	22300	18900	68730	240040	169660	101830	71640	73250	162250
MEAN	1420	1171	1066	719	675	2217	8001	5473	3394	2311	2363	5408
MAX	3370	1600	1650	740	700	15200	14600	11900	4480	2940	5010	12600
MIN	796	600	760	700	660	640	3550	3140	2330	1850	1440	1770
AC-FT	87290	69660	65530	44230	37490	136300	476100	336500	202000	142100	145300	321800
CFSM	.27	.22	.20	.14	.13	.42	1.52	1.04	.64	.44	.45	1.03
IN.	.31	.25	.23	.16	.13	.49	1.69	1.20	.72	.51	.52	1.15

e Estimated

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	842	700	582	518	502	1009	3109	2152	1697	1366	852	868
MAX	2836	3172	1900	1663	1778	4257	11870	15290	7205	6851	3868	5408
(WY)	1972	1972	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

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1901 - 1999
ANNUAL TOTAL	684703	1040770	
ANNUAL MEAN	1876	2851	1179
HIGHEST ANNUAL MEAN			3129
LOWEST ANNUAL MEAN			83.6
HIGHEST DAILY MEAN	11500	May 18	27500
LOWEST DAILY MEAN	600	Nov 19	2.5
ANNUAL SEVEN-DAY MINIMUM	726	Nov 16	3.9
INSTANTANEOUS PEAK FLOW			18800
INSTANTANEOUS PEAK STAGE			23.44
INSTANTANEOUS LOW FLOW			28400
ANNUAL RUNOFF (AC-FT)	1358000	2064000	854400
ANNUAL RUNOFF (CFSM)	.36	.54	.22
ANNUAL RUNOFF (INCHES)	4.83	7.35	3.04
10 PERCENT EXCEEDS	3190	6010	2620
50 PERCENT EXCEEDS	1400	1850	705
90 PERCENT EXCEEDS	907	680	116

a From highwater mark, backwater from ice.
 b From regulation by power plant upstream.

