

## RED RIVER OF THE NORTH BASIN--Continued

05078500 CLEARWATER RIVER AT RED LAKE FALLS, MN

LOCATION.--Lat 47°53'15", long 96°16'25", in NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 22, T.151 N., R.44 W., Red Lake County, Hydrologic Unit 09020305, on left bank 40 ft downstream from Great Northern Railroad bridge in Red Lake Falls, 1.4 mi upstream from mouth, and 3 mi downstream from Badger Creek.

DRAINAGE AREA.--1,380 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1909 to September 1917, October 1934 to September 1981, March 1982 to current year. Monthly discharge only for October, November, 1934, published in WSP 1308. October 1981 to February 1982, operated as a high-flow partial-record station.

REVISED RECORDS.--WSP 355: 1911-12. WSP 1438: 1910-11, 1917(M). WDR MN-84-1:1983.

GAGE.--Water-stage recorder. Datum of gage is 948.94 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Sept. 12, 1911, nonrecording gage at site 0.5 mi upstream, and Sept. 12, 1911 to Sept. 30, 1917, nonrecording gage at site 40 ft upstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor.

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	46	155	e220	e140	e128	e143	5270	461	594	316	456	391
2	43	155	e235	e135	e128	e145	4740	445	559	326	408	1050
3	42	155	e245	e132	e128	e148	3730	429	501	318	368	1860
4	47	150	e255	e130	e128	e150	3600	415	454	298	375	3040
5	58	141	e260	e126	e128	e151	4570	424	437	333	364	4810
6	84	140	e265	e124	e128	e153	4760	444	540	494	323	4740
7	86	146	e270	e122	e129	e156	4170	511	824	574	304	3840
8	78	131	e272	e121	e129	e159	3610	783	928	598	307	2820
9	87	130	e273	e120	e129	e162	3180	940	1010	e600	302	2230
10	90	144	e273	e120	e130	e164	2800	1450	1400	e760	292	1870
11	85	109	e270	e120	e130	e168	2470	2740	1550	e960	353	1610
12	82	76	e270	e120	e130	e171	2210	3430	1330	e1060	476	1570
13	86	e109	e265	e120	e130	e180	1990	4500	1150	1000	690	1640
14	88	e126	e260	e121	e130	e185	1830	4530	1030	920	805	1730
15	91	e134	252	e121	e130	e195	1670	3840	924	827	795	1710
16	87	e126	265	e121	e130	e205	1490	3160	790	747	772	1540
17	237	e119	258	e122	e130	e220	1350	2700	680	816	705	1350
18	502	e105	250	e122	e130	e240	1320	2320	583	874	653	1170
19	487	94	249	e123	e130	e280	1250	1990	507	724	643	1040
20	387	e107	e245	e124	e130	e320	1160	1740	448	628	582	952
21	317	e93	e230	e124	e130	e370	1050	1550	410	622	513	878
22	269	e100	e215	e125	e131	e440	977	1390	368	619	471	804
23	236	e110	e205	e126	e134	e530	901	1230	351	623	728	734
24	215	e120	e195	e126	e136	e670	830	1100	335	608	852	672
25	204	e130	e185	e126	e137	e950	786	989	331	541	763	620
26	196	e140	e175	e126	e138	e1500	751	897	331	505	605	608
27	196	e155	e170	e127	e140	e2500	692	811	318	614	521	642
28	187	e170	e160	e127	e141	3640	601	743	319	697	458	707
29	173	e190	e155	e128	---	4650	546	664	314	657	427	697
30	163	e205	e150	e128	---	4970	491	594	307	581	409	643
31	161	---	e145	e128	---	5680	---	572	---	498	387	---
TOTAL	5110	3965	7137	3875	3672	29595	64795	47792	19623	19738	16107	47968
MEAN	165	132	230	125	131	955	2160	1542	654	637	520	1599
MAX	502	205	273	140	141	5680	5270	4530	1550	1060	852	4810
MIN	42	76	145	120	128	143	491	415	307	298	292	391
AC-FT	10140	7860	14160	7690	7280	58700	128500	94800	38920	39150	31950	95140
CFSM	.12	.10	.17	.09	.10	.69	1.57	1.12	.47	.46	.38	1.16
IN.	.14	.11	.19	.10	.10	.80	1.75	1.29	.53	.53	.43	1.29

e Estimated

05078500 CLEARWATER RIVER AT RED LAKE FALLS, MN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	189	141	92.8	74.0	71.1	251	1184	704	488	404	209	196
MAX	1350	1233	260	221	385	1136	3507	5059	3042	2389	1686	1599
(WY)	1972	1972	1910	1998	1998	1995	1997	1950	1962	1997	1985	1999
MIN	10.0	19.0	21.4	21.4	19.1	13.6	61.0	32.2	26.5	8.34	1.49	2.92
(WY)	1935	1935	1937	1940	1937	1937	1981	1977	1980	1936	1936	1936

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1909 - 1999
ANNUAL TOTAL	151839	269377	
ANNUAL MEAN	416	738	331 <sup>a</sup>
HIGHEST ANNUAL MEAN			855 1950
LOWEST ANNUAL MEAN			64.4 1939
HIGHEST DAILY MEAN	5840	May 17	5680 Mar 31
LOWEST DAILY MEAN	41	Sep 28	42 Oct 3
ANNUAL SEVEN-DAY MINIMUM	45	Sep 27	58 Oct 1
INSTANTANEOUS PEAK FLOW			6020 Mar 31
INSTANTANEOUS PEAK STAGE			9.75 Mar 31
INSTANTANEOUS LOW FLOW			30 <sup>d</sup> Nov 12
ANNUAL RUNOFF (AC-FT)	301200	534300	239800
ANNUAL RUNOFF (CFSM)	.30	.53	.24
ANNUAL RUNOFF (INCHES)	4.09	7.26	3.26
10 PERCENT EXCEEDS	852	1780	807
50 PERCENT EXCEEDS	225	331	114
90 PERCENT EXCEEDS	84	122	38

- a Median of annual mean discharges is 286 ft<sup>3</sup>/s.
- b Gage-height, 12.38 ft.
- c From highwater mark, backwater from ice.
- d Result of freezeup.
- e Also occurred Sep. 14, 1939, and Aug. 19-22, 1940.

