RED RIVER OF THE NORTH BASIN

05078500 CLEARWATER RIVER AT RED LAKE FALLS, MN

LOCATION.--Lat 4753'15", long 9616'25", in NW *1* / *4* NE *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 *2* (revised).
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, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	174	214	e280	e240	e215	2460	373	239	440	799	200	98
2	152	e270	e270	e235	e215	1920	357	215	403	743	203	98
3	134	e240	e265	e235	e215	1430	367	210	357	695	203	99
4	114	e330	e260	e235	e210	1220	389	220	327	661	181	91
5	105	e310	e260	e230	e210	1020	412	214	291	618	169	75
6	119	e270	e250	e230	e210	955	425	205	266	575	159	79
7	126	e250	e250	e220	e210	772	484	224	267	903	146	81
8	126	e230	e250	e220	e210	736	509	221	261	1130	127	73
9	168	e230	e240	e220	e205	576	531	211	245	859	122	68

10	194	e240	e240	e220	e205	559	512	211	215	702	109	63
11	208	e250	e250	e220	e205	e540	525	207	200	604	113	66
12	208	e260	e250	e220	e205	e560	527	246	189	539	107	68
13	208	e260	e250	e220	e200	e550	586	1500	178	500	105	65
14	357	e260	e250	e215	e200	e540	847	1560	190	470	106	64
15	492	e250	e250	e210	e200	e500	819	1240	225	511	115	67
16	480	e250	e240	e210	e210	e480	749	3310	233	536	100	68
17	406	e240	e250	e210	e220	e470	694	5840	238	529	95	62
18	361	e239	e250	e210	e240	e450	637	5490	257	540	92	60
19	340	e233	e250	e220	e260	e440	583	4360	390	656	88	60
20	325	e230	e250	e220	e275	e420	554	3140	1360	586	87	49
21	291	e230	e250	e220	e290	e420	536	2450	1560	531	88	52
22	271	e240	e240	e220	e325	e400	477	1940	1320	522	87	52
23	248	e250	e240	e225	e380	e350	427	1530	1060	463	88	56
24	236	e260	e240	e220	e450	304	383	1180	1220	424	94	50
25	224	e270	e240	e220	e610	300	354	947	1540	394	87	45
26	214	e260	e250	e225	e900	314	331	815	1300	357	84	47
27	211	e260	e250	e220	e1400	364	332	718	1510	310	86	44
28	211	e275	e250	e220	e2100	429	307	605	1310	285	95	41
29	205	e280	e250	e220	---	411	278	531	1040	261	100	46
30	220	e280	e250	e215	---	394	249	534	882	231	97	51
31	205	---	e240	e215	---	393	---	479	---	206	84	---
TOTAL	7333	7661	7755	6860	10775	20677	14554	40792	19274	17140	3617	1938
MEAN	237	255	250	221	385	667	485	1316	642	553	117	64.6
MAX	492	330	280	240	2100	2460	847	5840	1560	1130	203	99
MIN	105	214	240	210	200	300	249	205	178	206	84	41
AC-FT	14550	15200	15380	13610	21370	41010	28870	80910	38230	34000	7170	3840
CFSM	.17	.19	.18	.16	.28	.48	.35	.95	.47	.40	.08	.05
IN.	.20	.21	.21	.18	.29	.56	.39	1.10	.52	.46	.10	.05

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	189	141	90.9	73.3	70.2	242	1171	692	486	401	205	177
MAX	1350	1233	260	221	385	1136	3507	5059	3042	2389	1686	1267
(WY)	1972	1972	1910	1998	1998	1995	1997	1950	1962	1997	1985	1973
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 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1909 - 1998		
ANNUAL TOTAL	279424		158376				
ANNUAL MEAN	766		434		325a		
HIGHEST ANNUAL MEAN					855		1950
LOWEST ANNUAL MEAN					64.4		1939
HIGHEST DAILY MEAN	7460	Apr 15	5840	May 17	9930	Apr 25	1979
LOWEST DAILY MEAN	98	Sep 14	41	Sep 28	.10	Sep 15	1936
ANNUAL SEVEN-DAY MINIMUM	110	Sep 9	46	Sep 24	.24	Sep 12	1936
INSTANTANEOUS PEAK FLOW			6340	May 17	10300b	Apr 25	1979
INSTANTANEOUS PEAK STAGE			10.27	May 17	15.85c	Mar 6	1983
INSTANTANEOUS LOW FLOW					.00d	Sep 15	1936
ANNUAL RUNOFF (AC-FT)	554200		314100		235700		
ANNUAL RUNOFF (CFSM)	.55		.31		.24		
ANNUAL RUNOFF	7.53		4.27		3.20		

(INCHES)							
10 PERCENT EXCEEDS	2520		852		795		
50 PERCENT EXCEEDS	240		250		111		
90 PERCENT EXCEEDS	120		92		38		

a Median of annual mean discharges is 280 ft *3* /s.
b Gage-height, 12.38 ft.
c From highwater mark, backwater from ice.
d Also occurred Sep. 14, 1939, and Aug. 19-22, 1940.