

RED RIVER OF THE NORTH BASIN

05051522 RED RIVER OF THE NORTH AT HICKSON, ND

LOCATION.--Lat 46° 39'35", long 96° 47'44", in SW¼ sec. 19, T.137 N., R.48 W., Clay County, MN, Hydrologic Unit 09020104, on right bank 60 ft downstream from bridge on township road, and 1 mi southeast of Hickson, ND.

DRAINAGE AREA.--4,300 mi² , approximately.

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 877.06 ft above sea level.

REMARKS.--Records good except those for periods of estimated daily discharges, which are fair. Flow regulated by Orwell Reservoir, capacity, 14,100 acre-ft at 1,070 ft above sea level, adjustment of 1912; Lake Traverse, capacity, 137,000 acre-ft, available for flood control, numerous other controlled lakes and ponds, and several power plants.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
JUL	AUG	SEP							
1	255	210	e323	e375	e537	e969	e1280	7240	2530
1390	797	718							
2	250	182	e317	e389	e547	e986	e2320	6890	2490
1360	764	692							
3	257	295	e307	e375	e565	e1000	e3180	6570	2420
1290	752	677							
4	279	434	e302	e375	e593	e1010	e4420	6270	2340
1250	764	677							
5	291	459	e297	e373	e592	e992	e5660	5950	2230
1280	762	682							
6	316	374	e287	e344	e574	e957	e8210	5610	2170
1290	781	707							
7	347	341	e287	e328	e559	e918	e10800	5340	2210
1250	783	722							
8	309	302	e397	e314	e544	e887	e12300	5090	2230
1230	772	739							
9	251	271	e455	e319	e554	e892	e12500	4830	2200
1230	752	740							
10	225	254	e514	e349	e546	e903	12400	4480	2160
1180	751	730							

11	199	178	e553	e375	e545	e897	12400	4140	2110
1140	757	673							
12	170	157	e531	e386	e539	e880	12300	3840	2030
1100	754	609							
13	155	189	e475	e328	e543	e866	12500	3570	1940
1060	750	371							
14	150	250	e449	e317	e557	e861	13000	3380	1890
1040	747	258							
15	143	271	e433	e357	e575	e877	13100	3230	1880
1060	743	520							
16	141	274	e415	e403	e581	e906	12400	3120	1820
1010	738	696							
17	144	222	e400	e449	e614	e859	11800	3020	1770
938	704	696							
18	167	165	e367	e463	e630	e842	11600	2950	1690
898	682	628							
19	231	179	e368	e455	e660	e847	11700	2900	1530
879	678	602							
20	258	207	e321	e428	e727	e848	12000	2850	1470
871	688	598							
21	252	224	e275	e443	e764	e845	12300	2810	1420
857	703	554							
22	245	e274	e320	e460	e777	e842	12000	2790	1430
843	704	526							
23	231	e332	e382	e514	e806	e835	11400	2830	1440
834	701	521							
24	220	e343	e371	e583	e861	e834	10900	2890	1420
830	702	523							
25	223	e337	e368	e549	e910	e835	10300	2890	1380
828	720	569							
26	317	e324	e363	e527	e928	e834	9720	2850	1310
832	727	550							
27	311	e314	e340	e513	e937	e831	9190	2780	1270
841	715	520							
28	256	e323	e328	e498	e949	e831	8630	2720	1180
834	679	508							
29	225	e330	e335	e484	---	e870	8030	2660	1120
821	664	502							
30	224	e333	e362	e504	---	e916	7580	2620	1200
812	686	505							
31	244	---	e358	e534	---	e987	---	2580	---
807	690	---							
TOTAL	7286	8348	11600	13111	18514	27657	295920	121690	54280
31885	22610	18013							
MEAN	235	278	374	423	661	892	9864	3925	1809
1029	729	600							
MAX	347	459	553	583	949	1010	13100	7240	2530
1390	797	740							
MIN	141	157	275	314	537	831	1280	2580	1120
807	664	258							
AC-FT	14450	16560	23010	26010	36720	54860	587000	241400	107700

63240 44850 35730

- e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1997, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
JUL	AUG	SEP							
MEAN	397	332	291	284	336	922	2205	1285	1039
840	511	434							
MAX	1558	900	817	747	745	2687	9864	3925	2485
2674	2674	2135							
(WY)	1994	1987	1986	1986	1987	1995	1997	1997	1986
1993	1993	1993							
MIN	2.02	.000	.000	4.95	14.0	75.9	165	22.0	86.4
73.4	35.6	12.6							
(WY)	1977	1977	1977	1977	1977	1977	1977	1977	1977
1977	1977	1976							

<i>SUMMARY STATISTICS</i>	<i>FOR 1996 CALENDAR YEAR</i>	<i>FOR 1997 WATER YEAR</i>	<i>WATER YEARS 1975 - 1997</i>	
ANNUAL TOTAL	377687	630914		
ANNUAL MEAN	1032	1729		740
HIGHEST ANNUAL MEAN				
1729		1997		
LOWEST ANNUAL MEAN				
53.1		1977		
HIGHEST DAILY MEAN	6190	Apr 14	13100	Apr 15
15 1997				13100 Apr
LOWEST DAILY MEAN	141	Sep 20	141	Oct 16
26 1976				.00 Oct
ANNUAL SEVEN-DAY MINIMUM	153	Oct 12	153	Oct 12
26 1976				.00 Oct
INSTANTANEOUS PEAK FLOW			13300	Apr 14
14 1997				13300 Apr
INSTANTANEOUS PEAK STAGE			37.60	Apr 16
16 1997				37.60 Apr
ANNUAL RUNOFF (AC-FT)	749100	1251000		536000
10 PERCENT EXCEEDS	2760	4440		1780
50 PERCENT EXCEEDS	457	722		394
90 PERCENT EXCEEDS	220	258		85

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1976 to current year.

11...	1500	--	756	430	8.0	--	--	--	23.0	
7.4	--	1.0								
SEP										
15...	1615	--	483	497	7.3	--	--	--	21.0	
8.7	--	2.0								
	HARD-	ALKA-	COLI-	STREP-				MAGNE-	MAGNE-	
	NESS	LINITY	FORM,	TOCOCCI				SIUM,	SIUM,	SODIUM,
SODIUM,	AD-		SODIUM							
TOTAL	LAB		FECAL,	FECAL,	CALCIUM	CALCIUM	SIUM,	SIUM,	SODIUM,	
(MG/L	SORP-		0.7	KF AGAR	TOTAL	DIS-	TOTAL	DIS-	TOTAL	DIS-
SOLVED	UM-MF		(COLS.	RECOVER	SOLVED	RECOVER	SOLVED	RECOVER	RECOVER	
DATE	AS	AS	(COLS./	PER	-ABLE	(MG/L	-ABLE	(MG/L	-ABLE	
(MG/L	SODIUM	RATIO	100 ML)	100 ML)	(MG/L)	AS CA)	(MG/L)	AS MG)	(MG/L)	AS
NA)	PERCENT									
	(00900)	(90410)	(31625)	(31673)	(00918)	(00915)	(00921)	(00925)	(00923)	
	(00930)	(00932)	(00931)							
APR										
18...	150	97	--	--	--	34	--	15	--	
7.5	10	0.3								
MAY										
19...	--	175	740	K500	55	--	30	--	13	--
	--	--								
JUN										
09...	--	185	K16	44	67	--	37	--	14	--
	--	--								
JUL										
21...	--	--	K42	K40	--	--	--	--	--	--
	--	--								
AUG										
11...	--	198	K100	110	44	--	29	--	7.3	--
	--	--								
SEP										
15...	--	203	100	160	44	--	30	--	11	--
	--	--								
	POTAS-	POTAS-		CHLO-	FLUO-	SOLIDS,	SOLIDS,			
NITRO-	NITRO-	NITRO-		RIDE,	RIDE,	SUM OF	RESIDUE	SOLIDS,	SOLIDS,	
GEN,	GEN,	GEN,	SULFATE	DIS-	DIS-	CONSTI-	AT 180	DIS-	DIS-	
NO2+NO3	TOTAL	DIS-	DIS-	DIS-	DIS-	TUENTS,	DEG. C	SOLVED	SOLVED	
TOTAL	AMMONIA	ORGANIC						(TONS	(TONS	
DATE	RECOVER	SOLVED	SOLVED	SOLVED	SOLVED	DIS-	DIS-	PER	PER	
(MG/L	TOTAL	TOTAL	(MG/L	(MG/L	(MG/L	SOLVED	SOLVED	AC-FT)	DAY)	AS
N)	(MG/L	(MG/L	AS SO4)	AS CL)	AS F)	(MG/L)	(MG/L)			
	AS N)	AS N)								
	(00939)	(00935)	(00945)	(00940)	(00950)	(70301)	(70300)	(70303)	(70302)	
	(00630)	(00610)	(00605)							
APR										
18...	--	4.0	70	7.3	0.20	196	203	0.28	6530	--

