

RED RIVER OF THE NORTH BASIN

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN

LOCATION.--Lat 47° 21'10", long 96° 50'50", on line between secs.24 and 25, T.145 N., R.49 W., Trail County, Hydrologic Unit 09020107, on left bank on upstream side of highway bridge, 0.5 mi west of Halstad, 2.5 mi downstream from Wild Rice River, and at mile 375.2.

DRAINAGE AREA.--21,800 mi² , approximately, including 3,800 mi² in closed basins.

PERIOD OF RECORD.--April 1936 to June 1937 (no winter records), April 1942 to September 1960 (spring and summer months only), May 1961 to current year.

REVISED RECORDS.--WSP 1388: 1936, 1950. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 826.65 ft above sea level. Prior to July 17, 1961, nonrecording gage at same site and datum.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1897 reached a stage of about 38.5 ft.

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	492	986	e900	e750	e1050	e1650	e3000	36900	5740
5570	2220	1190							
2	485	884	e900	e760	e1070	e1700	e4000	34500	5560
6890	2160	1290							
3	500	1020	e900	e760	e1100	e1700	e6000	31900	5530
6900	2130	1350							
4	495	951	e900	e780	e1120	e1750	e10000	29700	5330
6520	2140	1290							
5	485	931	e860	e780	e1140	e1800	e16000	28000	5100
6100	2070	1290							
6	485	1080	e820	e780	e1150	e1800	e21000	26600	4820
5650	2030	1290							
7	488	1240	e780	e780	e1180	e1800	e23000	25200	4570
5290	2170	1250							
8	493	1250	e740	e760	e1200	e1850	e24000	23800	4440
5160	2050	1270							
9	522	1170	e700	e750	e1200	e1850	e26000	22200	4430
5080	1850	1410							
10	558	1050	e660	e720	e1200	e1850	e28000	20600	4360

4950	1750	1420							
11	538	e780	e640	e680	e1200	e1850	e30000	18800	4190
4800	1690	1330							
12	478	e740	e620	e660	e1200	e1850	e34000	17200	4000
4740	1640	1310							
13	434	e680	e600	e660	e1200	e1850	e37000	15500	3820
5700	1610	1290							
14	383	e630	e600	e700	e1200	e1900	e42000	14000	3640
8770	1570	1240							
15	328	e600	e600	e720	e1200	e1900	e44000	12800	3500
8890	1550	1090							
16	282	e600	e630	e720	e1200	e1900	e45000	11700	3440
7690	1530	950							
17	258	e650	e650	e700	e1200	e1900	e55000	10800	3350
6800	1510	963							
18	263	e700	e680	e700	e1250	e1900	e64000	9960	3250
5960	1480	1180							
19	276	e740	e700	e720	e1250	e1900	69900	9110	3160
5070	1440	1260							
20	306	e750	e720	e760	e1300	e1900	69900	8210	3080
4460	1400	1220							
21	290	e750	e740	e800	e1350	e1900	66200	7340	3030
3950	1380	1160							
22	315	e700	e730	e820	e1400	e1900	61300	6720	2880
3590	1370	1120							
23	410	e650	e720	e820	e1450	e2000	57000	6400	3270
3330	1360	1090							
24	482	e650	e680	e850	e1500	e2000	53400	6880	6480
3130	1330	1040							
25	500	e700	e660	e850	e1550	e2000	50200	7610	9380
2980	1300	994							
26	508	e750	e680	e880	e1550	e2000	47300	7580	8750
2850	1290	981							
27	547	e780	e720	e930	e1550	e2000	44600	7200	7240
2750	1280	1020							
28	643	e800	e740	e980	e1600	e2100	42400	6800	6160
2660	1260	1050							
29	731	e840	e740	e1000	---	e2200	40700	6480	5140
2550	1250	1030							
30	825	e880	e750	e1030	---	e2400	38900	6210	4780
2440	1250	1040							
31	1030	---	e750	e1040	---	e2500	---	5990	---
2320	1210	---							
TOTAL	14830	24932	22510	24640	35560	59600	1153800	482690	142420
153540	50270	35408							
MEAN	478	831	726	795	1270	1923	38460	15570	4747
4953	1622	1180							
MAX	1030	1250	900	1040	1600	2500	69900	36900	9380
8890	2220	1420							
MIN	258	600	600	660	1050	1650	3000	5990	2880

2320	1210	950							
AC-FT	29420	49450	44650	48870	70530	118200	2289000	957400	282500
304500	99710	70230							

- e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1997, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
JUL	AUG	SEP							
MEAN	791	714	551	465	490	2296	7870	3681	2634
2634	1124	721							
MAX	2875	1843	1253	1023	1270	9444	38460	15570	10310
20060	11700	3360							
(WY)	1995	1995	1987	1987	1997	1995	1997	1997	1962
1975	1993	1993							
MIN	61.5	92.3	51.2	32.1	45.9	249	705	449	242
153	59.5	38.4							
(WY)	1977	1977	1977	1977	1977	1962	1981	1977	1977
1988	1977	1976							

SUMMARY STATISTICS FOR 1996 CALENDAR YEAR FOR 1997 WATER YEAR WATER YEARS 1961 - 1997

ANNUAL TOTAL	1136591	2200200	
ANNUAL MEAN	3105	6028	2011
HIGHEST ANNUAL MEAN			
6028	1997		
LOWEST ANNUAL MEAN			
214	1977		
HIGHEST DAILY MEAN	25100	Apr 18	69900
Apr 19 1997			Apr 19
LOWEST DAILY MEAN	228	Sep 22	258
Sep 2 1976			Oct 17
ANNUAL SEVEN-DAY MINIMUM	256	Sep 19	284
Aug 28 1976			Oct 16
INSTANTANEOUS PEAK FLOW			71500
Apr 19 1997			Apr 19
INSTANTANEOUS PEAK STAGE			40.74
Apr 19 1997			Apr 19
INSTANTANEOUS LOW FLOW			258
Oct 8 1936			Oct 17
ANNUAL RUNOFF (AC-FT)	2254000	4364000	1457000
10 PERCENT EXCEEDS	8300	17800	4320
50 PERCENT EXCEEDS	900	1380	783
90 PERCENT EXCEEDS	496	642	213

	(00930)	(00932)	(00931)	(00935)	(00945)	(00940)	(00950)	(70301)	(70300)	
(70303)										
APR										
a21...	11	14	0.4	5.3	60	5.0	0.20	192	214	0.29
SEP										
15...	35	21	0.9	6.5	110	26	0.20	418	438	0.60

STRON-	SOLIDS,					MANGA-		MOLYB-	SELE-	
TIUM,	DIS-	ARSENIC	IRON,	LEAD,	LITHIUM	NESE,	MERCURY	DENUM,	NIUM,	
DIS-	SOLVED	DIS-	DIS-	DIS-	DIS-	DIS-	DIS-	DIS-	DIS-	
SOLVED	(TONS	SOLVED	SOLVED	SOLVED	SOLVED	SOLVED	SOLVED	SOLVED	SOLVED	
DATE	PER	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L
(UG/L	DAY)	AS AS)	AS FE)	AS PB)	AS LI)	AS MN)	AS HG)	AS MO)	AS SE)	AS
SR)	(70302)	(01000)	(01046)	(01049)	(01130)	(01056)	(71890)	(01060)	(01145)	
(01080)										
APR										
a21...	40000	3	20	<1.0	20	10	<0.1	<1.0	<1	170
SEP										
15...	1290	4	50	<1.0	40	10	<0.1	<1.0	1	230

- a Replicate sample also collected for quality-assurance puposes.