

RED RIVER OF THE NORTH BASIN

05054000 RED RIVER OF THE NORTH AT FARGO, ND

LOCATION.--Lat 46° 51'40", long 96° 47'00", in NW1/4NE1/4 sec. 18, T.139 N., R.48 W., Cass County, Hydrologic Unit 09020104, at water treatment plant on 4th St. S. in Fargo, 25 mi upstream from mouth of Sheyenne River, and at mile 453.

DRAINAGE AREA.--6,800 mi² , approximately.

PERIOD OF RECORD.--May 1901 to current year. Published as "at Moorhead, Minn.", 1901. Monthly discharge only for some periods, in WSP 1308.

REVISED RECORDS.--WSP 1308: 1902-4, 1906-7, 1910-14, 1916, 1918, 1924. WSP 1388: 1905-6, 1917-20(M), 1935(M), 1938-39(M), 1943.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 861.8 ft above sea level. Oct. 1, 1960 to Sept. 30, 1962, water-stage recorder at present site at datum 5.6 ft higher. See WSP 1728 or 1913 for history of changes prior to Oct. 1, 1960.

REMARKS.--Records poor. 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, other controlled lakes and ponds, and several power plants. Some small diversions for municipal supply. Figures of daily discharge do not include diversions to cities of Fargo, ND and Moorhead, MN, and from Sheyenne River.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 7, 1897, reached a stage of 39.1 ft present datum, discharge, 25,000 ft³/s at site 1.5 mi downstream.

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	278	278	254	327	e590	e940	e2400	13200	2940
1920	943	845							
2	278	239	251	328	e580	e940	3030	12100	3030
1980	949	762							
3	284	249	249	334	e580	e940	4100	11100	3000
1920	911	733							
4	282	465	239	362	e580	e940	e4800	10300	2960
1890	866	721							
5	302	644	227	348	e580	e950	6740	9620	2890
1880	988	715							
6	325	591	220	338	e580	e950	9290	8970	2810

1920	970	729							
7	382	446	193	323	e580	e950	11600	8340	2800
1960	911	762							
8	402	365	209	312	e580	e940	14600	7770	e2750
1860	898	830							
9	350	294	324	326	e580	e940	18000	7190	e2700
1790	898	771							
10	268	261	413	e350	e580	e930	19700	6600	e2650
1710	883	776							
11	239	223	448	e400	e590	e930	19900	6020	e2600
1620	904	731							
12	210	160	476	e450	e590	e920	20300	5460	e2580
1680	903	702							
13	180	147	434	e430	e590	e920	20500	4900	2550
1530	886	534							
14	160	177	389	e420	e590	e930	22000	4370	2480
1450	869	337							
15	152	219	372	e450	e590	e930	24600	3910	2500
1430	867	353							
16	143	241	368	e480	e600	e940	26300	3520	2430
1410	858	646							
17	169	234	370	e510	e630	e940	27800	3210	2360
1300	830	688							
18	171	173	316	e550	e660	e940	27000	2960	2300
1220	785	674							
19	191	135	386	e520	e690	e950	25800	2750	2250
1190	766	605							
20	256	137	372	e500	e720	e950	25600	2600	2120
1170	763	619							
21	286	146	332	e490	e760	e950	25400	2550	2020
1130	770	592							
22	276	163	336	e500	e800	e960	24700	2610	2020
1110	778	546							
23	269	211	368	e480	e850	e970	23800	3190	2670
1090	780	553							
24	254	257	441	e550	e900	e980	22900	3100	2270
1080	780	540							
25	246	263	474	e620	e920	e980	21300	2900	2020
1060	786	566							
26	359	261	477	e610	e920	e980	19800	2830	1880
1060	794	619							
27	420	248	415	e610	e920	e1000	18400	2820	1770
1060	786	585							
28	359	244	371	e600	e930	e1000	17000	2830	1680
1040	776	572							
29	440	238	361	e600	---	e1000	15700	2840	1560
1010	735	553							
30	324	249	314	e600	---	e1000	14400	2870	1660
981	727	553							
31	274	---	321	e600	---	e1100	---	2900	---
955	746	---							

TOTAL	8529	7958	10720	14318	19060	29690	537460	166330	72250
44406	26106	19212							
MEAN	275	265	346	462	681	958	17920	5365	2408
1432	842	640							
MAX	440	644	477	620	930	1100	27800	13200	3030
1980	988	845							
MIN	143	135	193	312	580	920	2400	2550	1560
955	727	337							
AC-FT	16920	15780	21260	28400	37810	58890	1066000	329900	143300
88080	51780	38110							
(+)	1440	1330	1430	1480	1360	1530	1150	1160	1340
1290	1420	1220							
*	18360	17110	22690	29880	39170	60420	1067000	331100	144600
89370	53200	39330							

- e Estimated
- + Diversions in acre-feet to cities of Fargo and Moorhead.
- * Adjusted for diversions to cities of Fargo and Moorhead.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 1997, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
JUL	AUG	SEP							
MEAN	314	273	226	210	213	724	1929	1092	1038
861	416	318							
MAX	1741	942	800	740	778	4722	17920	5365	5122
5692	3293	2280							
(WY)	1994	1907	1987	1986	1987	1995	1997	1997	1962
1962	1993	1993							
MIN	.000	.000	.000	.000	.18	26.8	102	8.12	2.87
.000	.000	.000							
(WY)	1935	1937	1938	1933	1933	1937	1934	1934	1936
1934	1932	1934							
<i>SUMMARY STATISTICS</i>	<i>FOR 1996 CALENDAR YEAR</i>			<i>FOR 1997 WATER YEAR</i>			<i>WATER YEARS 1901 - 1997</i>		
ANNUAL TOTAL	494896			956039			636		
ANNUAL MEAN	1352 (*1378)			2619 (*2655)					
HIGHEST ANNUAL MEAN	2619			1997					
LOWEST ANNUAL MEAN	17.5			1934					
HIGHEST DAILY MEAN	27800			Apr 16			27800 Apr 17		
27800	Apr 17			1997					
LOWEST DAILY MEAN	127			Sep 19			135 Nov 19		
.00	Jul 25			1932					
ANNUAL SEVEN-DAY MINIMUM	150			Sep 17			167 Oct 13		
.00	Jul 25			1932					
INSTANTANEOUS PEAK FLOW	28000			Apr 17			28000 Apr 17		
28000	Apr 17			1997					
INSTANTANEOUS PEAK STAGE	39.72			Apr 18			39.72 Apr 18		
39.72	Apr 18			1997					
ANNUAL RUNOFF (AC-FT)	981600(*999900)			1896000(*1912000)					
460500									

02...	1440	12100	--	--	--	--	19.0	13.5	--	--
14...	0945	4460	736	--	--	--	7.0	11.0	--	--

SOLIDS, SOLIDS,
 OF RESIDUE SOLIDS,
 CONSTI- AT 180
 TUENTS, DEG. C
 DIS- DIS-
 SOLVED SOLVED
 (MG/L (MG/L
 (70301) (70300) (70303)

MAGNE- SODIUM POTAS- CHLO- FLUO- SUM
 SIUM, SODIUM, AD- SIUM, SULFATE RIDE, RIDE,
 DIS- DIS- SORP- DIS- DIS- DIS- DIS-
 SOLVED SOLVED TION SOLVED SOLVED SOLVED SOLVED
 (TONS (MG/L (MG/L SODIUM RATIO (MG/L (MG/L (MG/L (MG/L
 AS MG) AS NA) PERCENT AS K) AS SO4) AS CL) AS F)
 (00925) (00930) (00932) (00931) (00935) (00945) (00940) (00950)

APR	19...	15	11	14	0.4	4.8	73	6.9	0.10	201
	222	0.30								

SOLIDS,
 MOLYB- SELE- STRON-
 DENUM, NIUM, TIUM,
 DIS- DIS- DIS-
 SOLVED SOLVED SOLVED
 (UG/L (UG/L (UG/L
 (01060) (01145) (01080)

MANGA-
 ARSENIC IRON, LEAD, LITHIUM NESE, MERCURY
 DIS- DIS- DIS- DIS- DIS- DIS-
 SOLVED SOLVED SOLVED SOLVED SOLVED SOLVED
 (UG/L (UG/L (UG/L (UG/L (UG/L (UG/L
 AS AS) AS FE) AS PB) AS LI) AS MN) AS HG) AS
 (70302) (01000) (01046) (01049) (01130) (01056) (71890)

APR	19...	15100	3	50	<1.0	20	10	0.1	<1.0	<1	170
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