

05082500 RED RIVER OF THE NORTH AT GRAND FORKS, ND

LOCATION.--Lat 47°55'38", long 97°01'34", in sec.2, T.151 N., R.50 W., Grand Forks County, Hydrologic Unit 09020301, on right bank 200 ft upstream from the DeMers Avenue bridge, 0.4 mi downstream from Red Lake River, and at mile 297.6.

DRAINAGE AREA.--30,100 mi² (approximately), including 3,800 mi² in closed basins.

PERIOD OF RECORD.--April 1882 to current year. Prior to January 1904 monthly discharge only, published in WSP 1308.

REVISED RECORDS.--WSP 855: 1936(M). WSP 1115: 1942. WSP 1175: 1897(M). WSP 1388: 1904, 1914-15, 1917-19, 1921-22, 1927, 1950. WSP 1728: Drainage area. WRD-ND-81-1: 1882, 1897 (M).

GAGE.--Acoustic-doppler velocity meter and water-stage recorder. Datum of gage is 779.00 ft above sea level, National Geodetic Vertical Datum of 1929. Oct. 1, 1983, to Sept. 30, 1986, datum of gage was 780.00 ft at same site. Apr. 14, 1965, to Sept. 30, 1983, water-stage recorder 1.9 mi downstream at a datum of 778.35 ft. Nov. 3, 1933, to Apr. 13, 1965, water-stage recorder 0.3 mi upstream at 778.35 ft datum. See WSP 1728 or 1913 for history of changes prior to Nov. 3, 1933.

REMARKS.--Records good except those for Nov. 29 to Apr. 3, which are fair, and for estimated discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,190	2,330	1,590	1,280	e880	628	4,890	2,770	3,550	15,200	2,730	485
2	2,150	2,040	e1,500	1,250	858	615	4,230	3,180	3,340	14,700	2,620	447
3	2,100	2,060	e1,350	1,200	843	628	3,620	3,170	3,140	14,100	2,410	414
4	2,130	2,110	e1,280	1,200	806	e640	3,040	3,180	2,980	13,400	2,190	469
5	2,140	2,140	e1,250	1,170	813	e650	2,610	3,040	2,830	12,400	2,240	456
6	2,150	2,200	e1,250	1,140	e810	e660	2,320	2,800	2,650	10,900	2,130	425
7	2,170	2,340	e1,250	1,180	e800	671	2,230	3,110	2,500	9,150	1,960	400
8	2,240	2,250	e1,280	1,070	e780	661	2,160	3,670	2,530	7,420	1,840	400
9	2,330	2,270	1,300	1,110	e780	633	2,200	3,840	2,800	6,210	1,730	339
10	2,240	2,340	1,340	1,170	e770	650	2,390	e4,200	3,070	5,700	1,680	318
11	2,160	e2,290	1,360	1,100	e760	658	2,510	e5,000	3,030	5,370	1,550	339
12	2,340	e2,200	1,400	1,010	e760	663	2,460	5,710	3,540	5,290	1,500	336
13	2,290	1,980	1,460	e1,020	742	665	2,370	5,450	3,880	5,110	1,460	445
14	2,240	1,370	1,480	e1,000	748	682	2,240	5,320	4,080	5,720	1,420	425
15	2,360	1,240	1,500	e980	656	764	2,110	5,060	4,120	5,850	1,390	389
16	2,300	1,340	1,510	e960	628	805	2,040	4,760	3,900	5,680	1,330	432
17	2,210	1,420	1,500	e940	623	874	2,080	4,550	3,590	5,420	1,250	624
18	2,260	1,550	1,490	e930	722	1,150	2,020	4,430	3,150	5,080	1,210	1,060
19	2,180	1,780	1,480	e920	663	2,450	2,160	e4,400	2,860	4,830	1,130	901
20	2,100	2,060	1,480	e910	643	3,990	2,350	e4,800	2,800	4,610	1,010	812
21	2,180	2,180	1,460	e910	665	4,900	2,630	e5,400	2,730	4,340	939	909
22	2,230	2,190	1,440	e910	655	5,330	3,000	5,850	2,690	4,030	852	906
23	2,260	2,250	1,420	e900	689	5,380	3,350	5,850	2,930	3,620	810	777
24	e2,200	2,240	1,420	e890	690	5,850	3,560	5,590	5,200	3,320	761	587
25	e2,400	e2,000	1,390	e860	682	5,840	3,540	5,180	7,940	3,180	616	546
26	e2,500	e1,600	1,350	e860	640	5,620	3,310	4,820	10,100	3,240	551	625
27	e2,600	1,480	1,340	e860	646	5,250	3,110	4,610	13,400	3,200	481	611
28	2,730	1,500	1,280	e830	701	5,120	2,960	4,460	15,800	3,100	541	620
29	2,720	1,590	1,280	e800	---	5,510	2,750	4,210	16,200	2,930	626	549
30	2,640	1,650	e1,270	e720	---	5,830	2,610	4,020	15,700	2,940	605	528
31	2,480	---	1,270	e780	---	5,800	---	3,810	---	2,860	573	---
TOTAL	71,220	57,990	42,970	30,860	20,453	79,567	82,850	136,240	157,030	198,900	42,135	16,574
MEAN	2,297	1,933	1,386	995	730	2,567	2,762	4,395	5,234	6,416	1,359	552
MAX	2,730	2,340	1,590	1,280	880	5,850	4,890	5,850	16,200	15,200	2,730	1,060
MIN	2,100	1,240	1,250	720	623	615	2,020	2,770	2,500	2,860	481	318
AC-FT	141,300	115,000	85,230	61,210	40,570	157,800	164,300	270,200	311,500	394,500	83,570	32,870
CFSM	0.09	0.07	0.05	0.04	0.03	0.10	0.11	0.17	0.20	0.24	0.05	0.02
IN.	0.10	0.08	0.06	0.04	0.03	0.11	0.12	0.19	0.22	0.28	0.06	0.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 2003, BY WATER YEAR (WY)

MEAN	1,483	1,362	1,055	883	863	2,696	10,060	5,471	4,255	3,745	1,856	1,504
MAX	5,127	9,971	3,832	2,656	3,520	15,370	56,210	36,500	19,250	25,230	17,050	6,251
(WY)	(1995)	(2001)	(2001)	(2001)	(1998)	(1995)	(1997)	(1950)	(1962)	(1975)	(1993)	(1993)
MIN	12.1	30.5	17.8	18.8	2.87	42.1	954	373	151	88.5	30.6	20.3
(WY)	(1937)	(1937)	(1937)	(1937)	(1937)	(1937)	(1938)	(1934)	(1934)	(1936)	(1934)	(1936)

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SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1904 - 2003	
ANNUAL TOTAL	1,988,990		936,789			
ANNUAL MEAN	5,449		2,567		2,921	
HIGHEST ANNUAL MEAN					10,070	1997
LOWEST ANNUAL MEAN					244	1934
HIGHEST DAILY MEAN	37,400	Jul 14	16,200	Jun 29	127,000	Apr 18, 1997
LOWEST DAILY MEAN	1,240	Nov 15	318	Sep 10	1.8	Sep 2, 1977
ANNUAL SEVEN-DAY MINIMUM	1,280	Dec 4	365	Sep 6	2.5	Feb 12, 1937
MAXIMUM PEAK FLOW			17,000	Jun 28	a137,000	Apr 18, 1997
MAXIMUM PEAK STAGE			24.35	Jun 29	b54.35	Apr 22, 1997
ANNUAL RUNOFF (AC-FT)	3,945,000		1,858,000		2,116,000	
ANNUAL RUNOFF (CFSM)	0.21		0.098		0.11	
ANNUAL RUNOFF (INCHES)	2.81		1.33		1.51	
10 PERCENT EXCEEDS	14,200		5,300		6,300	
50 PERCENT EXCEEDS	2,720		2,100		1,400	
90 PERCENT EXCEEDS	1,530		631		282	

- a Maximum observed, affected by breakout flow from Red River of the North about 20 miles upstream of gage, that entered Red Lake River about 2 miles from the confluence with Red River of the North.
- b From floodmark.
- c Estimated.

